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# I. 應用

## 1 心血管健康

**Ref. 580** 紹述：碧容健®對收縮壓和舒張壓有明顯的有益作用。

Pourmasoumi M, Hadi A, Mohammadi H, Rouhani MH

Effect of Pycnogenol® supplementation on blood pressure: A systematic review and meta-analysis of clinical trials.

Phytotherapy Research. 2019;1- 10, 2019

**Ref. 577** 臨床研究：碧容健®對代謝綜合征參數有顯著的保護作用，可以通過使肥胖受試者降低體重來改善身體成分。

Sedighiyan M, Abdolahi M, Taheri E, Qorbani M, Omidian P, Hosseini S.

The French Maritime Pine Bark Extract Reduce Metabolic Syndrome Risk and Improve Body Composition in Obesity: A New Clinical Approach.

Acta Medica Iranica. 2018;56(3), 2018

**Ref. 570** 臨床研究：碧容健®配合維生素C和E改善了腎移植后患者的腎功能以及心血管風險指標。

Szentesiava Z, Trebaticky B, Zilinska Z, Breza J, Oravec S, Orszaghova Z, Muchova, J.

Improvement in cardiovascular risk markers by the combined effect of natural polyphenols and vitamins in patients after kidney transplantation.

Bratislava Medical Journal. 2022;123(04):254-61, 2022

**Ref. 553** 臨床研究：碧容健®能顯著改善與新冠疫情后有關的一些跡象和癥狀，改善心血管風險因素。

Belcaro G, Cornelli U, Cesarone MR, Scipione C, Scipione V, Hu S, Feragalli B, Corsi M, Cox D, Cotellese R, Hosoi M, Burki C

Preventive effects of Pycnogenol® on cardiovascular risk factors (including 内皮功能) and microcirculation in subjects

recovering from coronavirus disease 2019 (COVID- 19).

Minerva Med. 113(2):300-8, 2022

**Ref. 532** 臨床研究：碧容健®和Centellicum®可降低支架術后新內膜的進展速度。

Belcaro G, Cesarone MR, Scipione C, et al

Pycnogenol®+Centellicum®, post-stent evaluation: prevention of neointima and plaque re-growth.

Minerva Cardioangiolog. 2019;67(6):450-455. doi:10.23736/S0026-4725. 19.05048-5, 2019

**Ref. 531** 臨床研究：碧容健®和Centellicum®聯合有利於減緩中央/冠狀動脈-心血管鈣化的擴散。

Hu S, Belcaro G, Cesarone MR, Feragalli B, Cotellese R, Dugall M, Scipione C, Scipione V, Maione C.

Central cardiovascular calcifications: supplementation with Pycnogenol® and Centellicum®: variations over 12 months.

Minerva Cardioangiolog. 2020 Feb;68(1):22-26. doi: 10.23736/S0026-4725. 19.05052-7. Epub 2019 Oct 15. PMID: 31633315, 2020

**Ref. 530** 臨床研究：這項為期3年的研究顯示，同時補充碧容健®和Centellicum®能改善動脈粥樣硬化的進展和心血管事件的發生。

Belcaro G, Cesarone MR, Scipione C, Scipione V, Dugall M, Shu H, Peterzan P, Corsi M, Luzzi R, Hosoi M, Feragalli B, Cotellese R. Delayed progression of atherosclerosis and cardiovascular events in asymptomatic patients with atherosclerotic plaques: 3-year prevention with the supplementation with Pycnogenol® + Centellicum® .

Minerva Cardioangiolog. 2020 Feb;68(1):15-21. doi: 10.23736/S0026-4725. 19.05051-5. Epub 2019 Oct 11. PMID: 31625707, 2020

**Ref. 508** 臨床研究：碧容健®能改善健康人的勃起功能，對糖尿病患者效果更好。同時，碧容健®可降低總膽固醇和低密度脂蛋白膽固醇，以及糖尿病患者的血糖。

Trebaticky, B., Muchova J, Ziaran S, Bujdak P, Breza J, Durackova Z

Natural polyphenols improve erectile function and lipid profile in patients suffering from erectile dysfunction.

Bratisl Lek Listy, 120(12): p. 941-944, 2019

**Ref. 506** 臨床研究：碧容健®可改善微循環，減輕雷諾綜合征患者的主要癥狀。

Hu, S., M. Hosoi, G. Belcaro, M. Dugall, B. Feragalli, R. Cotellese and R. Luzzi (2019)

Management of mild, primary Raynaud Syndrome: supplementation with Pycnogenol®.

Minerva Cardioangiolog 67(5): 392-398, 2019

**Ref. 453** 臨床研究：碧容健®能進一步緩解更年期癥狀，明顯改善血糖和血脂，並能維持健康的血壓、C反應蛋白和同型半胱氨酸值。

Luzzi R, Belcaro G, Hosoi M, Feragalli B, Cornelli U, Dugall M, Ledda A

Normalization of cardiovascular risk factors in peri-menopausal women with Pycnogenol®.

Minerva Ginecol 69: 29-34, 2017

**Ref. 445 臨床研究：碧容健®可以增加患有肌肉無力的老年人的肌肉力量和心臟射血分數。**

Belcaro G, Dugall M

Preservation of muscular mass and strength in aged subjects with Pycnogenol® supplementation.

Minerva Ortopedica Traumatologica 67(3): 124- 130, 2016

**Ref. 442 描述與動脈粥樣硬化改善有關的碧容健®機制的臨床前研究。**

Liu R, Fan B, Cong H, Ikuyma S, Guan H, Gu J

Pycnogenol® reduces toll-like receptor 4 signaling pathway-mediated atherosclerosis formation in apolipoprotein E-deficient mice.

J Cardiovasc Pharmacol 68: 292-303, 2016

**Ref. 438 臨床研究：碧容健®與Centellicum®聯合可以穩定頸動脈斑塊。**

Luzzi R, Belcaro G, Ippolito E

Carotid plaque stabilization induced by the supplement association Pycnogenol® and centella asiatica (Centellicum®).

Minerva Cardioangiologica 64: 603-609, 2016

**Ref. 434 総述：與碧容健®生物活性和碧容健®用於治療浮腫、潰瘍、血栓形成、CVI和痔瘡的臨床作用有關的研究總結。**

Rohdewald P

Gerbstoffhaltiger Extrakt zur oralen und topischen Behandlung bei CVI und Hämorrhoidalalleiden.

Phlebologie 44: 334-338, 2015

**Ref. 426 臨床前研究表明，碧容健®可以減少動脈粥樣硬化斑塊和脂質沉積，以劑量依賴的方式降低脂肪分化相關蛋白和脂肪細胞脂質結合蛋白的脂質相關蛋白表達。**

Luo H, Wang J, Qiao C, Ma N, Liu D, Zhang W

Pycnogenol® attenuates atherosclerosis by regulating lipid metabolism through the TLR4-NF-kappaB pathway.

Experimental & Molecular Medicine 47, e191; doi:10.1038/emm.2015.74, 2015

**Ref. 415 総述論文包含目前關於碧容健®用於改善代謝綜合征患者和糖尿病患者健康方面的知識。**

Gulati O

Pycnogenol® in Metabolic Syndrome and Related Disorders.

Phytother Res 29: 949-968, 2015

**Ref. 408 臨床研究：碧容健®可改善內皮功能。開放性註冊研究的結果顯示出對臨界高血壓、高血糖和高血脂受試者的重要預防作用。**

Hu S, Belcaro G, Cornelli U, Luzzi R, Cesarone MR, Dugall M, Feragalli B, Errichi B, Ippolito E, Grossi MG, Hosoi M, Gizzi G, Trignani M  
Effects of Pycnogenol® on endothelial dysfunction in borderline hypertensive, hyperlipidemic, and hyperglycemic individuals: the borderline study.

Int Angiol 34(1): 43-52, 2015

**Ref. 393 臨床研究：碧容健®補充有益於美尼爾病及耳鳴患者。**

Luzzi R, Belcaro G, Hu S, Dugall M, Hosoi M, Cacchio M, Ippolito E, Corsi M

Improvement in symptoms and cochlear flow with Pycnogenol® in patients with Meniere's disease and tinnitus.

Minerva Med 105: 245-254, 2014

**Ref. 385 碧容健®有益於新陳代謝及心血管健康。**

Aribal-Ayral P, Özeli-Kavas G, Elhan AH

Pycnogenol®supplementation and its beneficial effects in healthy rats.

Saudi Med J 35(2): 195- 197, 2014

**Ref. 382 臨床研究：項初步亞組研究中可觀測補充碧容健®和積雪草后的亞臨床動脈病變進展，以及抑制斑塊進展情況。**

Belcaro G, Dugall M, Hosoi M, Ippolito E, Cesarone MR, Luzzi R, Cornelli U, Ledda A

Pycnogenol® and Centella Asiatica for asymptomatic atherosclerosis progression.

Int Angiol 1(33): 20-26, 2014

**Ref. 360 臨床研究：碧容健®可在三個月內將代謝綜合征的所有體征和癥狀恢復至健康水準值。**

Belcaro G, Cornelli U, Luzzi R, Cesarone MR, Dugall M, Feragalli B, Errichi S, Ippolito E, Grossi MG, Hosoi M, Cornelli M, Gizzi G

Pycnogenol®supplementation improves health risk factors in subjects with metabolic syndrome.

Phytother Res 27: 1572- 1578, 2013

- Ref. 349 臨床研究：心臟藥物之外再服用碧容健®能顯著增強心臟病患者的血管內皮功能。**  
Enseleit F, Sudano I, Périat D, Winnik S, Wolfrum M, Flammer AJ, Fröhlich GM, Kaiser P, Hirt A, Haile SR, Krasniqi N, Matter CM, Uhlenhut K, Högger P, Neidhart M, Lüscher TF, Ruschitzka F, Noll G  
Effects of Pycnogenol® on endothelial function in patients with stable coronary artery disease: a double-blind, randomized, placebo-controlled, cross-over study.  
Eur Heart J 33(13): 1589-97, 2012
- Ref. 295 臨床研究：碧容健®可減少耳鳴患者因耳蝸血流量增加而引起的“響鈴”或“嘶嘶”噪音感覺。**  
Grossi MG, Belcaro G, Cesarone MR, Duggall M, Hosoi M, Cacchio M, Ippolito E, Bavera P  
Improvement in cochlear flow with Pycnogenol® in patients with tinnitus: a pilot evaluation.  
Panminerva Med 52 (suppl. 1 to No. 2): 63-67, 2010
- Ref. 294 臨床研究：碧容健®協同輔酶Q10可增強心臟功能：射血分數增加、心率降低及體力顯著增強。**  
Belcaro G, Cesarone MR, Dugall M, Hosoi M, Ippolito E, Bavera P, Grossi MG  
Investigation of Pycnogenol® in combination with coenzymeQ10 in heart failure patients (NYHA II/III).  
Panminerva Med 52 (suppl. 1 to No. 2): 21-25, 2010
- Ref. 293 臨床研究：根據尿蛋白減少和腎臟血流量增加判斷，碧容健®可恢復代謝綜合征患者受損害的腎功能。**  
Stuard S, Belcaro G, Cesarone MR, Ricci A, Cornelli U, Gizzi G  
Kidney function in metabolic syndrome may be improved with Pycnogenol®.  
Panminerva Med 52 (suppl. 1 to No. 2): 27-32, 2010
- Ref. 291 碧容健®可保護動物模型的心肌免受糖尿病損害。**  
Klimas J, Kmecova J, Jankyova S, Yaghi D, Priesolova E, Kyselova Z, Musil P, Ochodnický P, Krenek P, Kyselovic J, Matyas S  
Pycnogenol® improves left ventricular function in streptozotocin-induced diabetic cardiomyopathy in rats.  
Phytother Res 24: 969-974, 2010
- Ref. 283 臨床研究：作為高血壓藥物的輔助藥物，碧容健®可改善腎臟的血流量和功能，並進一步改善血壓狀況。**  
Cesarone MR, Belcaro G, Stuard S, Schönlaub F, Di Renzo A, Grossi MG, Dugall M, Cornelli U, Cacchio M, Gizzi G, Pellegrini L  
Kidney Flow and Function in Hypertension: Protective Effects of Pycnogenol® in Hypertensive Participants – A Controlled Study.  
J Cardiovasc Pharmacol Ther 15: 41-46, 2010
- Ref. 281 碧容健®可保護動物模型的腎臟免受氧化應激和局部缺血損害。**  
Ozer Sehiri A, Sener G, Ercan F  
Protective effects of Pycnogenol® against ischemia reperfusion-induced oxidative renal injury in rats.  
Ren Fail 31: 690-697, 2009
- Ref. 257 關於碧容健®多方面有益於心血管健康的評論。**  
Watson RR, Argüelles MC  
Pycnogenol® and 心血管健康.  
Botanical medicine in clinical practice. (ed.) Watson, R.R., Preedy, V.R.; Wallingford, England, CABI Publishing, Ch. 56: 538-544, 2008
- Ref. 237 臨床研究：糖尿病和高血壓藥物之外再服用碧容健®可進一步顯著改善患者的血糖和心血管風險因數，允許大多數患者減少抗高血壓藥物的服用。**  
Zibadi S, Rohdewald P, Park D, Watson RR  
Reduction of cardiovascular risk factors in subjects with Type 2 Diabetes by Pycnogenol® supplementation.  
Nutr Res 28: 315-320, 2008
- Ref. 233 與阿司匹林相比，碧容健®可更有效地降低I型糖尿病藥理學模型的血小板機能亢進，對糖尿病血栓的形成具有一定的預防作用。**  
Nocun M, Ulicna O, Muchova J, Durackova Z, Watala C  
French maritime pine bark extract (Pycnogenol®) reduces thromboxane generation in blood from diabetic male rats.  
Biomed Pharmacother 62: 168- 172, 2007
- Ref. 230 臨床研究：碧容健®通過增加健康男性體內的一氧化氮水準可使得其內皮依賴性血管舒張升高42%。**  
Nishioka K, Hidaka T, Nakamura S, Umemura T, Jitsuiki D, Soga J, Goto C, Chayama K, Yoshizumi M, Higashi Y  
Pycnogenol®, French Maritime Pine Bark Extract, augments endothelium-dependent vasodilation in humans.  
Hypertens Res 30: 775-780, 2007

- Ref. 229** 碧容健®可抵消病毒性感染，預防病毒誘導性心肌炎症。  
 Matsumori A, Higuchi H, Shimada M  
 French maritime pine bark extract inhibits viral replication and prevents development of viral myocarditis.  
*J Card Fail* 13: 785-791, 2007
- Ref. 216** 碧容健®可預防小鼠的心力衰竭損害。  
 Zibadi S, Yu Q, Rohdewald PJ, Larson DF, Watson RR  
 Impact of Pycnogenol® on cardiac extracellular matrix remodeling induced by L-NAME administration to old mice.  
*Cardiovasc Toxicol* 7: 10- 18, 2007
- Ref. 207** 碧容健®顯示出強化體外心肌細胞的作用。  
 Hasegawa N, Kinoshita H, Mochizuki M  
 Pycnogenol® increases the probability of the contraction state in chick embryonic cardiomyocytes, indicating inotropic effects.  
*Phytther Res* 21: 181- 182, 2007
- Ref. 200** 臨床研究：碧容健®可減少高血壓受試者服用低血壓藥物的水腫副作用。  
 Belcaro G, Cesarone MR, Ricci A, Cornelli U, Rohdewald P, Ledda A, Di Renzo A, Stuard S, Cacchio M, Vinciguerra G, Gizzi G, Pellegrini L, Dugall M, Fano F  
 Control of edema in hypertensive subjects treated with calcium antagonist (Nifedipine) or angiotensin-converting enzyme inhibitors with Pycnogenol®.  
*Clin Appl Thromb Hemost* 12: 440-444, 2006
- Ref. 187** 臨床研究：碧容健®可顯著減少6個月治療期內155位絕經女性患者的低密度脂蛋白和增加高密度脂蛋白。  
 Yang HM, Liao MF, Zhu SY, Liao MN, Rohdewald P  
 A randomized, double-blind, placebo-controlled trial on the effect of Pycnogenol® on the climacteric syndrome in peri-menopausal women.  
*Acta Obstet Gynecol Scand* 86: 978-985, 2007
- Ref. 177** 綜述：碧容健®與輔酶Q10協同作用可增強心血管健康。  
 Watson RR  
 Nutraceutical Synergism: Pycnogenol® and Coenzyme Q10 Enhance Cardiovascular Health.  
*Evid Based Integrative Med* 2: 67-70, 2005
- Ref. 168** 綜述：碧容健®可用作心血管健康及糖尿病的營養保健品。  
 Gulati OP  
 The Nutraceutical Pycnogenol®: its role in Cardiovascular Health and blood glucose control.  
*Biomed Rev* 16: 49-57, 2005
- Ref. 140** 碧容健®可增強紅細胞膜的流動性，保護紅細胞免受氧化應激損害。  
 Sivonova M, Waczlikova I, Kilanczyk E, Hrnciarova M, Bryszewska M, Krajnert B, Durackova Z  
 The effect of Pycnogenol® on the erythrocyte membrane fluidity.  
*Gen Physiol Biophys* 23: 39-51, 2004
- Ref. 117** 臨床研究：作為高血壓藥物和硝苯地平的輔助藥物，碧容健®可改善血管內皮功能，允許減少藥物劑量。  
 Liu X, Wei J, Tan F, Zhou S, Würthwein G, Rohdewald P  
 Pycnogenol® French maritime pine bark extract, improves 内皮功能 of hypertensive patients.  
*Life Sci* 74: 855-862, 2004
- Ref. 114** 關於已發表研究中碧容健®對心血管健康有益作用的評論。  
 Watson RR  
 Pycnogenol® and Cardiovascular Health.  
*Evid Based Integrative Med* 1: 27-32, 2003
- Ref. 093** 臨床研究：碧容健®補充會降低總膽固醇和低密度脂蛋白、增加高密度脂蛋白，進而改善動脈粥樣硬化指數。  
 Durackova Z, Trebaticka B, Novotny V, Zitnanova I, Breza J  
 Lipid metabolism and erectile function improvement by Pycnogenol®, extract from the bark of Pinus pinaster in patients suffering from erectile Dysfunction - a pilot study  
*Nutr Res* 23: 1189- 1198, 2003
- Ref. 090** 碧容健®補充會降低總膽固醇和低密度脂蛋白、增加高密度脂蛋白，進而改善動脈粥樣硬化指數。  
 Devaraj S, Vega-López S, Kaul N, Schönlau F, Rohdewald P, Jialal I  
 Supplementation with a pine bark extract rich in polyphenols increases plasma antioxidant capacity and alters plasma lipoprotein profile.  
*Lipids* 37: 931-934, 2002

**Ref. 080** 臨床研究：碧容健®可降低未服用藥物的高血壓患者的血壓。

Hosseini S, Lee J, Sepulveda RT, Rohdewald P, Watson RR

A randomized, double-blind, placebo-controlled, prospective, 16 week crossover study to determine the role of Pycnogenol® in modifying blood pressure in mildly hypertensive patients.

Nutr Res 21: 1251- 1260, 2001

**Ref. 079** 臨床研究：碧容健®能顯著降低慢性靜脈功能不全患者的低密度脂蛋白，而七葉樹籽提取物沒有這種功能。

Koch R

Comparative study of Venostasin® and Pycnogenol® in chronic venous insufficiency.

Phytother Res 16: 1-5, 2002

**Ref. 053** 臨床研究：碧容健®可抑制吸煙誘導的血栓烷B水準的升高，從而解釋了吸煙者服用碧容健®後血小板聚集減少的原因。

Araghi-Niknam M, Hosseini S, Larson D, Rohdewald P, Watson RR

Pine bark extract reduces platelet aggregation.

Int Med 2: 73-77, 1999

**Ref. 043** 臨床研究：碧容健®可抑制心臟病患者的血小板聚集和粘附，改善血液微迴圈。

Wang S, Tan D, Zhao Y, Gao G, Gao X, Hu L

The effect of Pycnogenol® on the microcirculation, platelet function and ischemic myocardium in patients with coronary artery diseases.

Eur Bull Drug Res 7: 19-25, 1999

**Ref. 042** 碧容健®有助於通過血管舒張、抗血小板聚集、自由基清除和毛細血管封閉作用維持健康的血液迴圈。文中還討論了內皮一氧化氮（NO）的作用。

Rohdewald P

Reducing the risk for stroke and heart infarction with Pycnogenol®.

Eur Bull Drug Res 7: 14- 18, 1999

**Ref. 036** 臨床研究：碧容健®以劑量依賴性方式抑制人吸煙誘導的血小板聚集。這種作用會持續6天以上，與阿司匹林不同的是，它不會增加出血。

Pütter M, Grottemeyer KHM, Würthwein G, Araghi-Nik

Pütter M, Grottemeyer KHM, Würthwein G, Araghi-Niknam M, Watson RR, Hosseini S, Rohdewald P

Inhibition of smoking-induced platelet aggregation by aspirin and Pycnogenol®.

Thromb Res 95: 155- 161, 1999

**Ref. 027** 碧容健®阻礙血管收縮。碧容健®通過一氧化氮促進血管舒張活性。

Fitzpatrick DF, Bing B, Rohdewald P

Endothelium-dependent vascular effects of Pycnogenol®.

J Cardiovasc Pharmacol 32: 509-515, 1998

**Ref. 017** 碧容健®可抑制大鼠的血管收縮素II轉化酶（ACE），產生中等降血壓作用。

Blazso G, Gaspar R, Gabor M, Rüve H-J, Rohdewald P

ACE inhibition and hypotensive effect of procyanidin containing extract from the bark of Pinus pinaster Sol.

Pharm Pharmacol Lett 6: 8- 11, 1996

## 2 認知功能

**Ref. 584** 臨床研究：碧容健®能改善帕金森病患者的認知功能和面部/身體表情。

Belcaro G, Cesareone MR, Hu S, Hosoi M, Ledda A, Feragalli B, et al.

Pycnogenol® supplementation alleviates symptoms of Parkinson's disease with mild cognitive impairment.

Journal of neurosurgical sciences. 2022;66(4):371-7, 2022

**Ref. 582** 臨床研究：與哌醋甲酯不同，碧容健®不會導致多動症患兒食慾不振或體重下降。

Weyns A-S, Verlaet AAJ, Van Herreweghe M, Breynaert A, Fransen E, De Meester I, et al.

Clinical Investigation of French Maritime Pine Bark Extract on Attention-Deficit Hyperactivity Disorder as compared to Methylphenidate and Placebo: Part 2: Oxidative Stress and Immunological Modulation.

Journal of Functional Foods. 2022;97:105247, 2022

**Ref. 581** 臨床研究：碧容健®可以替代常用藥物利他能，適用於小兒多動症的活動過度和易衝動，效果好，無不良反應。

Weyns A-S, Verlaet AAJ, Breynaert A, Naessens T, Fransen E, Verhelst H, et al.

Clinical Investigation of French Maritime Pine Bark Extract on Attention-Deficit Hyperactivity Disorder as compared to Methylphenidate and Placebo: Part 1: Efficacy in a Randomised Trial.

Journal of Functional Foods. 2022;97:105246, 2022

- Ref. 566** 在帕金森病模型中，碧容健®通過發揮抗炎、抗氧化和神經保護作用，明顯改善了運動功能、全身僵硬症和抑鬱症。  
 Jafari F, Goudarzvand M, Hajikhani R, Qorbani M, Solati J.  
*Pycnogenol® ameliorates motor function and gene expressions of NF- κ B and Nrf2 in a 6-hydroxydopamine-induced experimental model of Parkinson's disease in male NMRI mice.*  
*Naunyn-Schmiedeberg's Archives of Pharmacology*, 2022
- 
- Ref. 557** 碧容健®對認知功能的有益影響述評。  
 Schönlau F  
*Chapter 23 - The multifactorial contributions of Pycnogenol® for cognitive function improvement.*  
*Nutraceuticals in Brain Health and Beyond*, D. Ghosh Ed., pp. 335-341: Academic Press: 2021, 2021
- 
- Ref. 546** 姜黃素以及碧容健®可能有助於緩解海灣戰爭疾病的癥狀。  
 Donovan EK, Kekes-Szabo S, Lin JC, Massey RL, Cobb JD, Hodgin KS, Ness TJ, Hangee-Bauer C, Younger JW.  
*A Placebo-Controlled, Pseudo-Randomized, Crossover Trial of Botanical Agents for Gulf War Illness: Curcumin (Curcuma longa), Boswellia (Boswellia serrata), and French Maritime Pine Bark (Pinus pinaster).*  
*International Journal of Environmental Research and Public Health* 18(5): 2468., 2021
- 
- Ref. 511** 臨床研究：碧容健®可改善帕金森病患者與認知功能下降有關的一些癥狀和體征。  
 Cesarone, M. R., G. Belcaro, M. Hosoi, A. Ledda, B. Feragalli, C. Maione, C. Scipione, V. Scipione, R. Cotellese and S. Hu  
*Supplementary management with Pycnogenol® in Parkinson's disease to prevent cognitive impairment.*  
*J Neurosurg Sci* 64(3): 258-262, 2020
- 
- Ref. 503** 這篇綜述總結了碧容健®通過血管、抗炎、神經保護和抗氧化過程改善神經認知功能的生物調節作用，並對未來可能的研究進行了展望。  
 Simpson T, Kure C, Stough C  
*Assessing the efficacy and mechanisms of Pycnogenol® on cognitive aging from in vitro animal and human studies.*  
*Frontiers in Pharmacology*, 2019
- 
- Ref. 494** 這項臨床前試驗的結果建議要評估碧容健®在臨床上對輕度認知障礙和阿爾茨海默病早期階段的潛在用途。  
 Paarman K, Prakash SR, Krohn M, Möhle L, Brackhan M, Brüning T, Eiriz I, Pahnke J  
*French maritime pine bark treatment decelerates plaque development and improves spatial memory in Alzheimer's disease mice.*  
*Phytomed* 57: 39-48. doi: 10.1016/j.phymed.2018. 11.033. Epub 2018 Nov 29, 2018
- 
- Ref. 474** 臨床研究：已有研究顯示，碧容健®對存在早期認知損害的受試者可產生很多積極效應，而這種效應可歸因於碧容健®對氧化應激水平的影響。  
 Hosoi M, Belcaro G, Saggino A, Luzzi R, Dugall M, Feragalli B  
*Pycnogenol® supplementation in minimal cognitive dysfunction.*  
*J Neurosurg Sci* 62(3): 279-284, 2018
- 
- Ref. 472** 綜述：碧容健®可提高抗氧化水準，減輕氧化損傷，改善神經化學狀態，因此認為其對兒童多動症有治療效果。  
 Verlaat AAJ, Maasakkers CM, Hermans N, Savelkoul HFJ  
*Rationale for Dietary Antioxidant Treatment of ADHD.*  
*Nutrients* 10, 405; doi: 10.3390/nu10040405, 2018
- 
- Ref. 431** 臨床研究：補充碧容健®12個月可提高55至70歲正常受試者的認知能力，降低氧化應激水準。  
 Belcaro G, Dugall M, Ippolito E, Hu S, Saggino A, Feragalli B  
*The COFU3 Study: Improvement in cognitive function, attention, mental performance with Pycnogenol® in healthy subjects (55-70) with high oxidative stress.*  
*J Neurosurg Sci* 59: 437-446, 2015
- 
- Ref. 424** 在臨床前臨床研究中，碧容健®抵抗腦小膠質細胞的炎症情況。  
 Fan B, Dun S-H, Gu J-Q, Guo Y, Ikuyama S  
*Pycnogenol attenuates the release of proinflammatory cytokines and expression of perilipin 2 in lipopolysaccharides-stimulated microglia in part via inhibition of NF- κ B and AP- 1 activation.*  
*PLOS ONE* 10(9): e0137837.doi:10. 1371/journal, 2015
- 
- Ref. 419** 碧容健®研究採用雙盲，安慰劑對照方案。  
 Stough C, Pase MP  
*Improving cognition in the elderly with nutritional supplements.*  
*Current Directions in Psychological Science* 24: 177- 183, 2015

**Ref. 407** 補充碧容健®12周可改善醫護專業人員的認知功能和氧化應激水準。

Belcaro G, Luzzi R, Dugall M, Ippolito E, Saggino A

Pycnogenol® improves cognitive function, attention, mental performance and specific professional skills in healthy professionals aged 35-55. J Neurosurg Sci 58: 239-248, 2014

**Ref. 345** 臨床研究：碧容健®可顯著改善健康學生的記憶、認知、注意力和情緒。

Luzzi R, Belcaro G, Zulli C, Cesarone MR, Cornelli U, Dugall M, Hosoi M, Feragalli B

Pycnogenol® supplementation improves cognitive function, attention and mental performance in students. Panminerva Med 53: 75-82, 2011

**Ref. 241** 臨床研究：碧容健®能夠顯著改善101位記憶缺失老年人的記憶力，保護他們的神經元細胞膜的多不飽和脂肪酸免受氧化損傷。

Ryan J, Croft K, Wesnes K, Stough C

An examination of the effects of the antioxidant Pycnogenol® on cognitive performance, serum lipid profile, endocrinological and oxidative stress biomarkers in an elderly population.

J Psychopharmacol 22: 553-562, 2008

**Ref. 231** 臨床研究：碧容健®可降低注意力缺陷多動障礙症（ADHD）兒童的應激激素水準。

Dvorakova M, Jezova D, Blazicek P, Trebatchka J, Skodacek I, Suba J, Waczulikova I, Rohdewald P, Durackova Z

Urinary catecholamines in children with attention deficit hyperactivity disorder (ADHD): modulation by a polyphenolic extract from pine bark (Pycnogenol®).

Nutr Neurosci 10: 151- 157, 2007

**Ref. 205** 臨床研究：碧容健®可改善注意力缺陷多動障礙症（ADHD）兒童的抗氧化能力。

Dvorakova M, Sivonova M, Trebatchka J, Skodacek I, Waczulikova I, Muchova J, Durackova Z

The effect of polyphenolic extract from pine bark, Pycnogenol®, on the level of glutathione in children suffering from attention deficit hyperactivity disorder (ADHD).

Redox Rep 11: 163- 172, 2006

**Ref. 204** 臨床研究：碧容健®可預防注意力缺陷多動障礙症（ADHD）兒童的DNA不被氧化。

Chovanova Z, Muchova J, Sivonova M, Dvorakova M, Zitnanova I, Waczulikova I, Trebatchka J, Skodacek I, Durackova Z

Effect of polyphenolic extract, Pycnogenol®, on the level of 8-oxoguanine in children suffering from attention deficit/ hyperactivity disorder. Free Radic Res 40: 1003- 1010, 2006

**Ref. 190** 臨床研究：在一項雙盲安慰劑對照的研究中，碧容健®能夠緩解注意力缺陷多動障礙症（ADHD）兒童的多動症，改善其注意力。

Trebatchka J, Kopasova S, Hradecna Z, Cinovsky K, Skodacek I, Suba J, Muchova J, Zitnanova I, Waczulikova I, Rohdewald P, Durackova Z Treatment of ADHD with French maritime pine bark extract, Pycnogenol®.

Eur Child Adolesc Psychiatry 15: 329-335, 2006

**Ref. 083** 阿爾茨海默患者大腦內的β-澱粉樣蛋白會誘發神經元細胞凋亡（細胞早死亡）。體外實驗顯示，碧容健®能夠抑制神經元細胞的死亡。

Peng QL, Buz'Zard AR, Lau BHS

Pycnogenol® protects neurones from amyloid β peptide-induced apoptosis.

Brain Res Mol Brain Res 104: 55-65, 2002

**Ref. 069** 碧容健®會顯著減少β-澱粉樣蛋白引起的血管損傷。β-澱粉樣變性是阿爾茨海默病（AD）的神經病理學標誌之一。它解釋了碧容健®具有能夠降低阿爾茨海默病風險的作用。

Liu F, Lau BHS, Peng Q, Shah V

Pycnogenol® protects vascular endothelial cells from β-amylid-induced injury.

Biol Pharm Bull 23: 735-737, 2000

**Ref. 052** 碧容健®可改善衰老過程常見癥狀中的學習記憶障礙和記憶缺失。

Liu F, Zhang Y, Lau BHS

Pycnogenol® improves learning impairment and memory deficit in senescence-accelerated mice.

J Anti Aging Med 2: 349-355, 1999

**Ref. 048** 臨床研究：建議使用碧容健®治療注意力缺失症。

Hanley JL

Attention Deficit Disorder.

Impact Communications Inc., Green Bay, WI, USA, 17- 19, 1999

**Ref. 047** 臨床研究：這封寫給編輯的信中有提到服用碧容健®治療注意力缺陷多動障礙症（ADHD）的療效鮮明。

Heimann SW

Pycnogenol® for ADHD?

J Am Acad Child Adolesc Psychiatry 38: 357-358, 1999

### 3 糖尿病及代謝綜合征

- Ref. 534 臨床研究：糖尿病和非糖尿病的口幹綜合征（Xerostomia）患者在補充碧容健®後，唾液流量和粘膜破損和潰瘍得到改善。**  
 Belcaro G, Cesarone MR, Cornelli U, Scipione, C., Scipione, V., Dugall, M., Hu, S., Feragalli, B., Hosoi, M., Maione, C., Cotellese, R., Cesinaro Di Rocco, P.  
*Xerostomia: prevention with Pycnogenol® supplementation: a pilot study.*  
*Minerva Stomatol.* 2019;68(6):303-307, 2019
- Ref. 508 臨床研究：碧容健®能改善健康人的勃起功能，對糖尿病患者更是如此。同時，碧容健®可降低總膽固醇和低密度脂蛋白膽固醇，以及糖尿病患者的血糖。**  
 Trebaticky, B., Muchova J, Ziaran S, Bujdak P, Breza J, Durackova Z  
*Natural polyphenols improve erectile function and lipid profile in patients suffering from erectile dysfunction.*  
*Bratisl Lek Listy,* 120(12): p. 941-944, 2019
- Ref. 448 一項提出將碧容健®作為常規治療肝炎相關性糖尿病的輔助治療的綜述。**  
 Ezzikouri S, Jadid FZ, Hamdi S, Wakrim L, Tsukiyama-Kohara K, Benjelloun S  
*Supplementing Conventional Treatment with Pycnogenol® May Improve Hepatitis C Virus-Associated Type 2 Diabetes: A Mini Review.*  
*J Clin Translational Hepatol* 4: 228-233, 2016
- Ref. 435 在糖尿病動物模型中向二甲雙胍藥物中補充加入碧容健®有類似的作用。**  
 Jankova S, Rubintova D, Janosikova L, Panek P, Foltnova T, Kralova E  
*The Effects of Pycnogenol® as Add-on Drug to Metformin Therapy in Diabetic Rats.*  
*Phytother Res* 30: 1354- 1361, 2016
- Ref. 415 本綜述論文包含目前關於碧容健®用於改善代謝綜合征患者和糖尿病患者健康方面的知識。**  
 Gulati O  
*Pycnogenol® in Metabolic Syndrome and Related Disorders.*  
*Phytother Res* 29: 949-968, 2015
- Ref. 408 臨床研究：碧容健®可改善內皮功能。這項公開註冊研究的結果表明，對於邊緣型高血壓、高血糖和高脂血症受試者來說，很可能有重要的預防性作用。**  
 Hu S, Belcaro G, Cornelli U, Luzzi R, Cesarone MR, Dugall M, Feragalli B, Errichi B, Ippolito E, Grossi MG, Hosoi M, Gizzi G, Trignani M  
*Effects of Pycnogenol® on endothelial dysfunction in borderline hypertensive, hyperlipidemic, and hyperglycemic individuals: the borderline study.*  
*Int Angiol* 34(1): 43-52, 2015
- Ref. 401 臨床研究：攝入碧容健®可降低血糖水平，增強血漿的抗氧化能力。**  
 Muchova J, Orszaghova Z, Zitnanova I, Trebaticky B, Breza J, Durackova Z  
*The effect of natural polyphenols on the oxidative stress markers in patients with diabetic nephropathy.*  
*Free Rad Biol Med* 72: 42, 2014
- Ref. 397 碧容健®可改善實驗性糖尿病大鼠的心臟功能。**  
 Kralova E, Jankova S, Mucaji P, Gresakova E, Stankovicova T  
*Pycnogenol and its fractions influence the function of isolated heart in rats with experimental diabetes mellitus.*  
*J Pathology Research & Practice,* 211: 156- 161, 2015
- Ref. 385 碧容健®有益於新陳代謝及心血管健康。**  
 Aribal-Ayral P, Özeli-Kavas G, Elhan AH  
*Pycnogenol®supplementation and its beneficial effects in healthy rats.*  
*Saudi Med J* 35(2): 195- 197, 2014
- Ref. 384 碧容健®在降低糖尿病相關併發症風險方面可能具有一定的成本效益。**  
 Bentley G, Schönlau F, Zibadi S, Watson R  
*Cost of Pycnogenol® Supplementation and Traditional Diabetes Treatments per Unit of Improved Health Outcome.*  
*Chapter 27 in R.R. Watson et al., (eds.), Nutrients, Dietary Supplements, and Nutraceuticals: Cost Analysis Versus Clinical Benefits, Nutritions and Health, Springer Science+Business Media LLC 2011*
- Ref. 381 碧容健®與β受體阻滯劑卡維地洛聯合治療可改善糖尿病動物的心肌功能。碧容健®可改善心肌收縮與冠脈流量的血液動力學參數值。**  
 Králová E, Janková S, Pekárik A, Cubon J, Stankovicová T  
*Carvedilol and Pycnogenol® improve the function of diabetic heart in rats.*  
*Acta Fax Pharm Univ Comen LX,* 2013 (1)
- Ref. 360 臨床研究：碧容健®可在三個月內使代謝綜合征的所有體征和癥狀改善至健康值範圍內。**  
 Belcaro G, Cornelli U, Luzzi R, Cesarone MR, Dugall M, Feragalli B, Errichi S, Ippolito E, Grossi MG, Hosoi M, Cornelli M, Gizzi G  
*Pycnogenol®supplementation improves health risk factors in subjects with metabolic syndrome.*  
*Phytother Res* 27: 1572- 1578, 2013  
*Diabetic Syndrome*

- Ref. 334** 藥理學實驗中，碧容健®被證實能夠保護糖尿病性腎病模型的腎細胞免受葡萄糖之損害。  
 Kim YJ, Kim YA, Yokozawa T  
*Pycnogenol® modulates apoptosis by suppressing oxidative stress and inflammation in high glucose-treated renal tubular cells.*  
*Food Chem Toxicol* 49: 2196-2201, 2011
- Ref. 308** 碧容健®在動物糖尿病模型中對肝臟具有抗氧化保護作用。  
 Parveen K, Khan MR, Mujeeb M, Siddiqui WA  
*Protective effects of Pycnogenol® on hyperglycemia-induced oxidative damage in the liver of type 2 diabetic rats.*  
*Chem Biol Interact* 186: 219 -227, 2010
- Ref. 300** 研究顯示，碧容健®在一體外模型中能夠促進脂肪細胞更好地吸收葡萄糖，這就表明它具有抗糖尿病的益處。  
 Lee HH, Kim K-J, Lee OH, KJ, Lee BY  
*Effect of Pycnogenol® on glucose transport in mature 3T3-L1 adipocytes.*  
*Phytother Res* 24: 1242- 1249, 2010
- Ref. 293** 臨床研究：根據尿蛋白減少和腎臟血流灌注增加判斷，碧容健®可改善代謝綜合征患者的腎功能。  
 Stuard S, Belcaro G, Cesarone MR, Ricci A, Cornelli U, Gizzi G  
*Kidney function in metabolic syndrome may be improved with Pycnogenol®*  
*Panminerva Med* 52 (suppl. 1 to No. 2): 27-32, 2010
- Ref. 288** 碧容健®可改善某動物模型的內皮功能和血管形態。  
 Rezzani R, Porteri E, De Ciuceis C, Bonomini F, Rodella LF, Paiardi S, Boari GEM, Platto C, Pilu A, Avanzi D, Rizzoni D, Rosei EA  
*Effects of melatonin and Pycnogenol® on small artery structure and function in spontaneously hypertensive rats.*  
*Hypertension* 55: 1373- 1380, 2010
- Ref. 271** 臨床研究：糖尿病視網膜病變早期服用碧容健®可部分恢復視力，進一步強化視網膜的毛細血管。  
 Steigerwalt R, Belcaro G, Cesarone MR, Di Renzo A, Grossi MG, Ricci A, Dugall M, Cacchio M, Schönlau F  
*Pycnogenol® improves microcirculation, retinal edema, and visual acuity in early diabetic retinopathy.*  
*J Ocul Pharmacol Ther* 25: 537-540, 2009
- Ref. 261** 本綜述論文包含了碧容健®對糖尿病患者的多方面貢獻作用。  
 Rohdewald P  
*Regulation of diabetes by Pycnogenol®.*  
*Botanical medicine in clinical practice.* (ed.) Watson, R.R., Preedy, V.R.; Wallingford, England, CABI Publishing, Ch. 62: 587-594, 2008
- Ref. 237** 臨床研究：糖尿病和高血壓藥物配合碧容健®服用可進一步顯著改善患者的血糖和心血管風險因數，允許大多數患者減少抗高血壓藥物的服用。  
 Zibadi S, Rohdewald P, Park D, Watson RR  
*Reduction of cardiovascular risk factors in subjects with Type 2 Diabetes by Pycnogenol® supplementation.*  
*Nutr Res* 28: 315-320, 2008
- Ref. 233** 相比阿司匹林，碧容健®能更有效地減少I型糖尿病藥理學模型的血小板聚集，這說明它具有預防糖尿病患者形成血栓的作用。  
 Nocun M, Ulicna O, Muchova J, Durackova Z, Watala C  
*French maritime pine bark extract (Pycnogenol®) reduces thromboxane generation in blood from diabetic male rats.*  
*Biomed Pharmacother* 62: 168- 172, 2007
- Ref. 209** 碧容健®可通過抑制α-葡糖苷酶來抑制膳食中碳水化合物的吸收。  
 Schäfer A, Högger P  
*Oligomeric procyandins of French maritime pine bark extract (Pycnogenol®) effectively inhibit alpha-glucosidase.*  
*Diabetes Res Clin Pract* 77: 41-46, 2007
- Ref. 199** 臨床研究：碧容健®可減少糖尿病性微血管病。  
 Cesarone MR, Belcaro G, Rohdewald P, Pellegrini L, Ledda A, Vinciguerra G, Ricci A, Gizzi G, Ippolito E, Fano F, Dugall M, Cipollone G, Acerbi G, Cacchio M, Del Boccio G, Di Renzo A, Stuard S, Corsi M  
*Improvement of diabetic microangiopathy with Pycnogenol®: A prospective, controlled study.*  
*Angiology* 57: 431-436, 2006
- Ref. 195** 臨床研究：碧容健®可加速糖尿病性潰瘍的癒合。  
 Belcaro G, Cesarone MR, Errichi BM, Ledda A, Di Renzo A, Stuard S, Dugall M, Pellegrini L, Gizzi G, Rohdewald P, Ippolito E, Ricci A, Cacchio M, Cipollone G, Ruffini I, Fano F, Hosoi M  
*Diabetic ulcers: microcirculatory improvement and faster healing with Pycnogenol®.*  
*Clin Appl Thromb Hemost* 12: 318-323, 2006

**Ref. 184** 碧容健®能夠增加大鼠視網膜中的抗氧化酶濃度，這說明視網膜病和白內障形成風險相對較低。

Kamuren ZT, McPeek CG, Sanders RA, Watkins JB

Effects of low-carbohydrate diet and Pycnogenol® treatment on retinal antioxidant enzymes in normal and diabetic rats.

J Ocul Pharmacol Ther 22: 10- 18, 2006

**Ref. 156** 碧容健單獨使用碧容健®或與其他抗氧化劑結合使用都能刺激糖尿病大鼠視網膜內的抗氧化酶活性。

Dene BA, Maritime AC, Sanders RA, Watkins JB

Effects of Antioxidant Treatment on Normal and Diabetic rat retinal enzyme activities.

J Ocul Pharmacol Ther 21: 28-35, 2005

**Ref. 153** 單獨使用碧容健®或與其他抗氧化劑結合使用都能減少糖尿病大鼠的氧化應激參數。

Berryman AM, Maritim AC, Sanders RA, Watkins JB

Influence of treatment of Diabetic rats with combinations of Pycnogenol®, beta-carotene, and alpha-lipoic acid on parameters of oxidative stress.

J Biochem Mol Toxicol 18: 345-352, 2004

**Ref. 142** 臨床研究：糖尿病患者補充碧容健®可降低其血糖水準。

Liu X, Wei J, Tan F, Zhou S, Würthwein G, Rohdewald P

Antidiabetic effect of Pycnogenol® French maritime pine bark extract in patients with diabetes type II.

Life Sci, 75: 2505-2513, 2004

**Ref. 110** 碧容健®可抑制導致糖尿病患者產生晚期糖基化終末產物（AGE）的體外美德拉反應。

Zhang TM, Han CH, Han YW, Gong H, Zhang EY, Zhang Y

Inhibitory effect of Pycnogenol® on generation of advanced glycation end products in vitro.

Chin Pharmacol Bull 19: 437-440, 2003

**Ref. 109** 臨床研究：在一項劑量探索研究中，碧容健®能夠降低II型糖尿病患者的血糖水準，改善患者的內皮功能。

Liu X, Zhou H-J, Rohdewald P

French maritime pine bark extract Pycnogenol® dose-dependently lowers glucose in type II diabetic patients.

Diabetes Care 27: 839, 2004

**Ref. 105** 碧容健®降低糖尿病患者的血糖，增強細胞內抗氧化防禦機制。

Maritim A, Dene BA, Sanders RA, Watkins JB

Effect of Pycnogenol® treatment on oxidative stress in streptozotocin-induced diabetic rats.

J Biochem Mol Toxicol 17: 193- 199, 2003

**Ref. 092** 臨床研究：該評論呈現了五項關於碧容健®臨床研究的結果，這些結果表明，碧容健®對糖尿病視網膜病變患者有一定的治療療效。

Schönlau F, Rohdewald P

Pycnogenol® for diabetic retinopathy: A review.

Int Ophthalmol 24: 161- 171, 2002

**Ref. 090** 臨床研究：碧容健®補充可減少人志願者體內的「有害」膽固醇低密度脂蛋白。

Devaraj S, Vega-López S, Kaul N, Schönlau F, Rohdewald P, Jialal I

Supplementation with a pine bark extract rich in polyphenols increases plasma antioxidant capacity and alters plasma lipoprotein profile.

Lipids 37: 931-934, 2002

**Ref. 080** 臨床研究臨床研究：針對輕度高血壓患者進行的隨機化、雙盲、安慰劑對照研究顯示，碧容健®能夠患者血壓。此外，碧容健®能顯著減少這些患者血液中的血管收縮因數（血栓素）。

Hosseini S, Lee J, Sepulveda RT, Rohdewald P, Watson RR

A randomized, double-blind, placebo-controlled, prospective, 16 week crossover study to determine the role of Pycnogenol® in modifying blood pressure in mildly hypertensive patients.

Nutr Res 21: 1251- 1260, 2001

## 4 眼部健康

**Ref. 528** 臨床研究：碧容健®預防復發性視網膜靜脈血栓的效果優於阿司匹林、噻氯匹定和舒洛地特，且無副作用。

Belcaro G, Dugall M, Bradford HD, Cesarone MR, Feragalli B, Gizzi C, Cotellese R, Hu S, Rodriguez P, Hosoi M.

Recurrent retinal vein thrombosis: prevention with Aspirin, Pycnogenol®, ticlopidine, or sulodexide.

Minerva Cardioangiologica. 2019 Apr;67(2):109- 114, 2019

**Ref. 417 臨床研究：碧容健®被證明有助於預防視網膜靜脈血栓形成。**

Rodriguez P, Belcaro G, Dugall M, Hu S, Luzzi R, Ledda A, Ippolito E, Corsi M, Ricci A, Feragalli B, Cornelli U, Gizzi C, Hosoi M  
Recurrence of retinal vein thrombosis with Pycnogenol® or Aspirin®supplementation: a registry study.  
Panminerva Med 57: 121- 125, 2015

**Ref. 271 臨床研究：糖尿病視網膜病變早期服用碧容健®可部分恢復視力，進一步強化視網膜的毛細血管。**

Steigerwalt R, Belcaro G, Cesaroni MR, Di Renzo A, Grossi MG, Ricci A, Dugall M, Cacchio M, Schönlau F  
Pycnogenol® improves microcirculation, retinal edema, and visual acuity in early diabetic retinopathy.  
J Ocul Pharmacol Ther 25: 537-540, 2009

**Ref. 227 碧容健®結合葉黃素使用可增強抗氧化劑活性，預防視網膜脂質發生氧化。**

Nakanishi-Ueda T, Kamegawa M, Ishigaki S, Tsukahara M, Yano S, Wada K, Yasuhara H  
Inhibitory Effect of Lutein and Pycnogenol® on Lipid Peroxidation in Porcine Retinal Homogenate.  
J Clin Biochem Nutr 38: 204-210, 2006

**Ref. 184 碧容健®可增加大鼠視網膜內的抗氧化酶濃度，即表明可降低發生視網膜病和白內障的風險。**

Kamuren ZT, McPeek CG, Sanders RA, Watkins JB  
Effects of low-carbohydrate diet and Pycnogenol® treatment on retinal antioxidant enzymes in normal and diabetic rats.  
J Ocul Pharmacol Ther 22: 10- 18, 2006

**Ref. 156 不管是單獨使用碧容健®，還是結合其他抗氧化劑一起使用，都能激發糖尿病大鼠視網膜內的抗氧化酶活性。**

Dene BA, Maritime AC, Sanders RA, Watkins JB  
Effects of Antioxidant Treatment on Normal and Diabetic rat retinal enzyme activities.  
J Ocul Pharmacol Ther 21: 28-35, 2005

**Ref. 092 臨床研究：此綜述論文囊括了五項關於碧容健®的臨床研究結果，這些結果表明碧容健®補充對於糖尿病視網膜病變患者有一定的治療療效。**

Schönlau F, Rohdewald P  
Pycnogenol® for diabetic retinopathy: A review.  
Int Ophthalmol 24: 161- 171, 2002

**Ref. 075 碧容健®對視網膜病有一定的有益作用。**

L, Balestrazzi E  
Treatment of vascular retinopathies with Pycnogenol®.  
Phytother Res 15: 219-223, 2001

**Ref. 051 在預防視網膜發生抗氧化損傷方面，碧容健®比其他試驗的任何抗氧化劑都有效與輔酶Q10等其他抗氧化劑結合使用時，碧容健®會顯示出增效抗氧化劑的功效。**

Chida M, Suzuki K, Nakanishi-Ueda T, Ueda T, Yasuhara H, Koide R, Armstrong D  
In vitro testing of antioxidants and biochemical end-points in bovine retinal tissue.  
Ophthalmic Res 31: 407-415, 1999

**Ref. 018 碧容健®可保護眼睛視網膜免受自由基損害。**

Ueda T, Ueda T, Armstrong D  
Preventive effect of natural and synthetic antioxidants on lipid peroxidation in the mammalian eye.  
Ophthalmic Res 28: 184- 192, 1996

## 5 健康老齡化

**Ref. 503 這篇綜述總結了碧容健®通過血管、抗炎、神經保護和抗氧化過程改善神經認知功能的生物調節作用。**

Simpson T, Kure C, Stough C  
Assessing the efficacy and mechanisms of Pycnogenol® on cognitive aging from in vitro animal and human studies.  
Frontiers in Pharmacology, 2019

**Ref. 490 關於碧容健®對衰老的相關癥狀的各種有益影響的綜述。**

Rohdewald P  
Pleiotropic Effects of French Maritime Pine Bark Extract to Promote Healthy Aging.  
Rejuvenation Res. 2019 Jun;22(3):210-217, 2019

**Ref. 488 臨床研究：碧容健®可改善老年人的常規體能狀況，減少正常活動（如購物、散步、做家務）中的疲勞負擔。**

Hosoi M, Cotellessa R, Belcaro G, et al.

Pycnogenol®: Prevention of muscular mass and strength loss in the elderly.

J Med Physical Fitness, ahead of print, 2018, Pharma standard (PS) supplements. Papers from the London sessions January 2018. Eds. Belcaro G, Dugall M, Ledda A., ISBN; 978-88-7711-940

**Ref. 453 臨床研究：碧容健®能進一步緩解更年期癥狀，明顯改善血糖和血脂，並能維持健康的血壓、C反應蛋白和同型半胱氨酸值。**

Luzzi R, Belcaro G, Hosoi M, Feragalli B, Cornelli U, Dugall M, Ledda A

Normalization of cardiovascular risk factors in peri-menopausal women with Pycnogenol®.

Minerva Ginecol 69: 29-34, 2017

**Ref. 431 臨床研究：補充碧容健®12個月可提高55至70歲正常受試者的認知能力，降低氧化應激水準。**

Belcaro G, Dugall M, Ippolito E, Hu S, Saggino A, Feragalli B

The COFU3 Study: Improvement in cognitive function, attention, mental performance with Pycnogenol® in healthy subjects (55-70) with high oxidative stress.

J Neurosurg Sci 59: 437-446, 2015

**Ref. 336 臨床研究：碧容健®可顯著減少與更年期過渡期有關的癥狀和體征。**

Errichi S, Bottari A, Belcaro G, Cesaroni MR, Hosoi M, Cornelli U, Dugall M, Ledda A, Feragalli B

Supplementation with Pycnogenol® improves signs and symptoms of menopausal transition.

Panminerva Med 53: 65-70, 2011

**Ref. 241 臨床研究：碧容健®能夠顯著改善101位記憶缺失老年人的記憶力，保護他們的神經元細胞膜的多不飽和脂肪酸免受氧化損傷。**

Ryan J, Croft K, Wesnes K, Stough C

An examination of the effects of the antioxidant Pycnogenol® on cognitive performance, serum lipid profile, endocrinological and oxidative stress biomarkers in an elderly population.

J Psychopharmacol 22: 553-562, 2008

**Ref. 187 臨床研究：一項針對155名更年期婦女的雙盲、安慰劑對照研究顯示，碧容健®顯著提高了總抗氧化狀態。**

Yang HM, Liao MF, Zhu SY, Liao MN, Rohdewald P

A randomised, double-blind, placebo-controlled trial on the effect of Pycnogenol® on the climacteric syndrome in peri-menopausal women.

Acta Obstet Gynecol Scand 86: 978-985, 2007

**Ref. 098 碧容健®能延長果蠅的壽命，因此能延緩衰老。**

Shuguang L, Xinwen Z, Sihong X, Gulati OP

Role of Pycnogenol® in aging by increasing the *Drosophila*'s life-span.

Eur Bull Drug Res 11: 39-45, 2003

## 6 免疫

**Ref. 572 碧容健®可通過抑制口蹄疫病毒（FMDV）和典型豬熱病病毒（CSFV）的內部核糖體進入位點（IRES）的活性，發揮抗病毒作用。**

Ide Y, Kitab B, Ito N, Okamoto R, Tamura Y, Matsui T, Sakoda Y, Tsukiyama-Kohara, K.

Characterization of host factors associated with the internal ribosomal entry sites of foot-and-mouth disease and classical swine fever viruses. Scientific Reports. 2022;12(1), 2022

**Ref. 537 臨床研究：碧容健®可安全地用於系統性紅斑狼瘡伴血管炎緩解期受試者的輕微癥狀，改善狼瘡血管炎的一些癥狀和體征。**

Cesarone MR, Belcaro G, Corsi M, Scipione C, Scipione V, Hu S, Hosoi M, Ledda A, Feragalli B, Cotellessa R.

Supplementary management with Pycnogenol® in patients with lupus vasculitis in remission phases: a pilot, concept registry study. Minerva Cardioangiologica. 2020;68(2):146-152, 2020

**Ref. 505 小綜述表明含有碧容健®的牙膏可以改善口腔健康，預防牙周病的發生。**

Sato, T., K. Watanabe, H. Sasaki, H. Hiramine, S. Goda and N. Hamada.

Antimicrobial activity and inhibitory effect of alveolar bone loss of toothpaste containing a natural plant extract.

Kanagawa Shigaku 53(1/2): 40-44, 2018

**Ref. 498 碧容健®的胃腸道代謝作用顯示其具有免疫調節和抗炎特性。**

Verlaet A, van der Bolt N, Meijer B, Breynaert A, Naessens T, Konstanti P, Smidt H, Hermans N, Savelkoul HFJ, Teodorowicz M Toll-Like Receptor-Dependent Immunomodulatory Activity of Pycnogenol®.  
Nutrients 11: 214; doi:10.3390/nu11020214, 2019

**Ref. 448 一項提出將碧容健®作為常規治療肝炎相關性糖尿病的輔助治療的綜述。**

Ezzikouri S, Jadid FZ, Hamdi S, Wakrim L, Tsukiyama-Kohara K, Benjelloun S  
Supplementing Conventional Treatment with Pycnogenol® May Improve Hepatitis C Virus-Associated Type 2 Diabetes: A Mini Review.  
J Clin Translational Hepatol 4: 228-233, 2016

**Ref. 409 碧容健®可作為治療和預防骨病（如牙周炎）的藥劑。**

Sugimoto H, Watanabe K, Toyama T, Takahashi S-s, Sugiyama S, Lee M-C-I, Hamada N  
Inhibitory Effect of French Pine Bark Extract, Pycnogenol®, on Alveolar Bone Resorption and on the Osteoclast Differentiation.  
Phytother Res 29(2): 251-259, 2015

**Ref. 398 碧容健®可以提高當前標準抗病毒藥物的療效。**

Ezzikouri S, Nishimura T, Kohara M, Benjelloun S, Kino Y, Inoue K, Matsumori A, Tsukijama-Kohara  
Inhibitory effects of Pycnogenol® on hepatitis C virus replication.  
Antiviral Res 113: 93- 102, 2015

**Ref. 396 臨床研究：碧容健®可減少普通感冒的癥狀，縮短其病程，也可預防一些併發症。**

Belcaro G, Shu H, Luzzi R, Dugall M, Ippolito E, Cesarone MR, Corsi M, Feragalli B  
Improvement of common cold with Pycnogenol®: a Winter registry study.  
Panminerva Med 56: 301-308, 2014

**Ref. 395 補充碧容健®可以恢復紊亂的免疫功能，預防早逝。**

Lee J, Nam D-E, Kim O-K, Lee M-Y  
Pycnogenol® attenuates the symptoms of immune dysfunction through restoring a cellular antioxidant status in low micronutrient-induced immune deficient mice.  
Nutr Res Pract 8(5): 533-538, 2014

**Ref. 375 臨床研究：給處於緩解期的克羅恩病患兒服用碧容健®，可降低氧化應激水準。**

Kolacek M, Muchova J, Dvorakova M, Paduchova Z, Zitnanova I, Cierna I, Orszaghova Z, Szekyova D, Jajcaiova-Zednickova N, Kovacs L, Durackova Z  
Effects of natural polyphenols (Pycnogenol®) on oxidative stress markers in children suffering from Crohn's disease –a pilot study.  
Free Rad Res 47(8): 624-634, 2013

**Ref. 369 臨床研究：碧容健®補充劑可加速普通感冒的恢復，與維生素C和鋅結合使用，效果更佳。**

Belcaro G, Luzzi R, Umberto C, Hu S, Dugall M, Ippolito E, Cesarone MR, Corsi M, Pellegrini L, Ledda A, Appendino G  
The common cold Winter Study: Effects of Pycnogenol® on Signs, Symptoms, Complications & Costs.  
Otorinolaringol 63: 151- 161, 2013

**Ref. 361 在一個模型系統中碧容健®顯示出對預防帕金森病的保護作用。**

Khan M, Kempuraj D, Thangavel R, Zaheer A  
Protection of MPTP-induced neuroinflammation and neurodegeneration by Pycnogenol®.  
Neurochem Int 62: 379-388, 2013

**Ref. 356 臨床研究：將碧容健®溶於甘油口服，可顯著控制化療兒童患者發生口腔粘膜炎。**

Khurana H, Pandey RK, Saksena AK, Kumar A  
An evaluation of vitamin E and Pycnogenol® in children suffering from oral mucositis during cancer chemotherapy.  
Oral Diseases 19: 456-464, 2012

**Ref. 247 在細胞培養實驗中，碧容健®減少了愛滋病病毒的複製和T細胞的互動。**

Feng WY, Tanaka R, Inagaki Y, Saitoh Y, Chang MO, Amet T, Yamamoto N, Yamaoka S, Yoshinaka Y  
Pycnogenol®, a procyanidin-rich extract from French maritime pine, inhibits intracellular replication of HIV-1 as well as its binding to host cells.  
Jpn J Infect Dis 61: 279-285, 2008

**Ref. 245 臨床研究：碧容健®有助於減少癌症化療和放療患者的各種常見副作用。**

Belcaro G, Cesarone MR, Genovesi D, Ledda A, Vinciguerra G, Ricci A, Pellegrini L, Gizzi G, Ippolito E, Dugall M, Cacchio M, Di Renzo A, Stuard S  
Pycnogenol® may alleviate adverse effects in oncologic treatment.  
Panminerva Med 50: 227-234, 2008

- Ref. 236** 碧容健®增加了巨噬細胞的吞噬能力，表明其能更好地防止病原體感染。  
 Wu TF, Hsu CY, Huang HS, Chou SP, Wu H  
*Proteomic analysis of Pycnogenol® effects in RAW 264.7 macrophage reveals induction of cathepsin D expression and enhancement of phagocytosis.*  
*J Agric Food Chem 55: 9784-9791, 2007*
- Ref. 229** 碧容健®可抑制心肌（心肌炎）中的病毒複製。  
 Matsumori A, Higuchi H, Shimada M  
*French maritime pine bark extract inhibits viral replication and prevents development of viral myocarditis.*  
*J Card Fail 13: 785-791, 2007*
- Ref. 228** 碧容健®可抑制心肌炎的病毒複製。  
 Matsumori A  
*Treatment Options in Myocarditis.*  
*Herz 32: 452-456, 2007*
- Ref. 225** 碧容健®可抑制幽門螺旋菌的生長及其對胃黏膜細胞的粘附作用。  
 Rohdewald P, Beil W  
*In vitro inhibition of Helicobacter pylori growth and adherence to gastric mucosal cells by Pycnogenol®.*  
*Phytother Res 22: 685-688, 2007*
- Ref. 221** 碧容健®可抑制兩種致突變化學品的有害作用。  
 Krizkova L, Chovanova Z, Durackova Z, Krajcovic J  
*Antimutagenic in vitro Activity of Plant Polyphenols: Pycnogenol® and Ginkgo biloba Extract (EGb 761).*  
*Phytother Res 22: 384-388, 2007*
- Ref. 208** 碧容健®可減少人卵巢細胞癌的發生。  
 Buzzard AR, Lau BHS  
*Pycnogenol® reduces Talc-induced Neoplastic Transformation in Human Ovarian Cell Cultures.*  
*Phytother Res 21: 579-586, 2007*
- Ref. 173** 碧容健®可選擇性殺死卵巢生殖癌細胞。  
 Buzzard AR, Lau BHS  
*Selective toxicity of Pycnogenol® for malignant ovarian germ cells in vitro.*  
*Int J Cancer Prev 1: 207-212, 2004*
- Ref. 150** 碧容健®顯示出顯著的體外抗菌活性。  
 Torras MAC, Faura CA, Schönlau F, Rohdewald P  
*Antimicrobial activity of Pycnogenol®.*  
*Phytother Res 19: 647-648, 2005*
- Ref. 111** 曬傷后外敷碧容健®可抑制紫外輻射誘導對免疫系統的抑製作用。  
 Sime S, Reeve VE  
*Protection from inflammation, immunosuppression and carcinogenesis induced by UV radiation in mice by topical Pycnogenol®.*  
*Photochem Photobiol 79: 193- 198, 2004*
- Ref. 095** 碧容健®可激活體外巨噬細胞，更有效地殺死入侵細菌。  
 Shah V, Bayeta E, Lau BHS  
*Pycnogenol® augments macrophage phagocytosis and cytokine secretion.*  
*Pak J Nutr 1: 196-201, 2002*
- Ref. 082** 臨床研究：碧容健®對紅斑狼瘡患者有一定的有益作用。  
 Stefanescu M, Matache C, Onu A, Tanaseanu S, Dragomir C, Constantinescu I, Schönlau F, Rohdewald P, Szegli G  
*Pycnogenol® Efficacy in the Treatment of Systemic Lupus Erythematosus Patients.*  
*Phytother Res 15: 698-704, 2001*
- Ref. 059** 碧容健®可選擇性殺死人體的癌性乳腺細胞（MCF-7），且不會對正常乳腺細胞（MCF-10）產生任何影響。  
 Huynh HT, Teel RW  
*Selective induction of apoptosis in human mammary cancer cells (MCF-7) by Pycnogenol®.*  
*Anticancer Res 20: 2417-2420, 2000*
- Ref. 055** 一定濃度的碧容健®會以時間依賴方式加速巨噬細胞系統中的TNF- $\alpha$ 分泌，即它可作為巨噬細胞免疫反應的調製器。  
 that it acts as modulator of the immune response in macrophages.  
 Park YC, Rimbach G, Salio C, Valacchi G, Packer L  
*Activity of monomeric, dimeric, and trimeric flavonoids on NO production, TNF-alpha secretion, and NF-kappaB- dependent gene expression in RAW 264.7 macrophages.*  
*FEBS Lett 465: 93-97, 2000*

**Ref. 029** 碧容健®可減慢因免疫細胞和血液細胞生成系統活動下降而引起的衰老，使它們恢復正常功能。

Liu FJ, Zhang YX, Lau BHS  
Pycnogenol® enhances immune and haemopoietic functions in senescence-accelerated mice.  
Cell Mol Life Sci 54: 1168- 1172, 1998

**Ref. 016** 碧容健®可加快感染致白血病逆轉錄酶病毒小鼠的免疫系統活動。碧容健®能夠增強自然殺傷細胞的毒性。

Cheshier JE, Ardestani-Kaboudanian S, Liang B, Araghi Niknam M, Chung S, Lane L, Castro A, Watson RR  
Immunomodulation by Pycnogenol® in retro-virus infected or ethanol-fed mice.  
Life Sci 58: 87-96, 1996

## 7 關節健康

**Ref. 487** 臨床研究：碧容健®貼片可安全有效地管理疼痛和改善特發性、良性、短暫性頸痛的癥狀。

Belcaro G, Dugall M, Feragalli B, et al.  
Prevention of symptoms associated to neck pain with a Pycnogenol® patch.  
J Sport Med Physical Fitness, Pharma standard (PS) supplements. Papers from the London sessions January 2018. Eds. Belcaro G, Dugall M, Ledda A., ISBN: 978-88-7711-940, 2018

**Ref. 477** 臨床研究：膝骨關節炎患者使用碧容健®貼片後，其癥狀可得到控制，中重度疼痛和炎症均得以減輕。

Feragalli B, Dugall M, Luzzi R, Ledda A, Hosoi M, Belcaro G, Cesarone MR  
Pycnogenol®: supplementary management of symptomatic osteoarthritis with a patch. An observational registry.  
Minerva Endocrinologica, Pharma standard (PS) supplements. Papers from the London sessions January 2018. Eds. Belcaro G, Dugall M, Ledda A., ISBN: 978-88-7711-940, 2018

**Ref. 464** 臨床研究：已對碧容健®通過軟骨細胞、滑液和血清而反映出來的臨床療效進行了系統研究。總體結果提示海岸鬆樹皮提取物具有軟骨保護潛能。這些結果為理解現有文獻報告的碧容健®對骨關節炎患者通過癥狀評分而體現出來的臨床療效提供了合理基礎。

Jessberger S, Högger P, Genest F, Salter DM, Seefried L  
Cellular pharmacodynamic effects of Pycnogenol® in patients with severe osteoarthritis: a randomized controlled pilot study.  
BMC Complementary and Alternative Medicine 17: 537 DOI 10.1186/s12906-017-2044-1, 2017

**Ref. 461** 緒述：碧容健®具有抗炎和軟骨保護作用，其中含有可快速吸收的酚類化合物和緩慢代謝的原花青素，兩種特性相結合，其可像緩釋配方藥物那樣發揮作用。

Rohdewald PJ  
Review on sustained relief of osteoarthritis symptoms with a proprietary extract from pine bark extract, Pycnogenol®.  
J Med Food 21(1): 1-4, 2018

**Ref. 451** 臨床研究：碧容健®局部貼敷，可舒緩肌肉疼痛。

Luzzi R, Belcaro G, Feragalli B, Dugall M  
Moderate, diffuse, somatic muscular pain: effects of supplementation with a Pycnogenol® patch.  
Minerva Ortopedica e Traumatologica 67(4): 170- 176, 2016

**Ref. 440** 臨床研究：補充碧容健®被證明造成了骨關節炎患者膝蓋滑液中成分和代謝物的積累，是癥狀改善的依據。

Mülek M, Seefried L, Genest F, Högger P  
Distribution of constituents and metabolites of maritime pine bark extract (Pycnogenol®) into serum, blood cells and synovial fluid of patients with severe osteoarthritis: a randomized controlled trial.  
Nutrients 9, 443, 2017

**Ref. 330** 碧容健®有助於預防骨質疏鬆動物模型的骨質脫鈣。

Takano T, Kozai Y, Kawamata R, Wakao H, Sakurai T, Kashima I  
Inhibitory effect of maritime pine bark extract (Pycnogenol®) on deterioration of bone structure in the distal femoral epiphysis of ovariectomized mice.  
Oral Radiol 27: 8- 16, 2011

**Ref. 272** 臨床研究：針對人體炎症過程的藥理學調查顯示，碧容健®能夠抑制COX-2和5-LOX酶的產生。

Canali R, Comitato R, Schonlau F, Virgili F  
The anti-inflammatory pharmacology of Pycnogenol® in humans involves COX-2 and 5-LOX mRNA expression in leukocytes.  
Int Immunopharmacol 9: 1145- 1149, 2009

- Ref. 250 臨床研究：碧容健®可顯著減少骨關節炎患者體內的炎症性標記物C反應蛋白，這說明它具有一定的抗炎性功效。**  
 Belcaro G, Cesarone MR, Errichi S, Zulli C, Errichi BM, Vinciguerra G, Ledda A, Di Renzo A, Stuard S, Dugall M, Pellegrini L, Gizzi G, Ippolito E, Ricci A, Cacchio M, Cipollone G, Ruffini I, Fano F, Hosoi M, Rohdewald P  
 Variations in C-reactive protein, plasma free radicals and fibrinogen values in patients with osteoarthritis treated with Pycnogenol®.  
*Redox Rep* 13: 271-276, 2008
- Ref. 249 臨床研究：碧容健®可改善骨關節炎關節的靈活性，減少疼痛，允許患者減少鎮痛藥物劑量。**  
 Cisar P, Jany R, Waczulikova I, Sumegova K, Muchova J, Vojtassak J, Durackova Z, Lisy M, Rohdewald P  
 Effect of pine bark extract (Pycnogenol®) on symptoms of knee osteoarthritis.  
*Phytother Res* 22: 1087- 1092, 2008
- Ref. 223 臨床研究：碧容健®能夠改善156位骨關節炎患者的疼痛和活動性。**  
 Belcaro G, Cesarone MR, Errichi S, Zulli C, Errichi BM, Vinciguerra G, Ledda A, Di Renzo A, Stuard S, Dugall M, Pellegrini L, Errichi S, Gizzi G, Ippolito E, Ricci A, Cacchio M, Cipollone G, Ruffini I, Fano F, Hosoi M, Rohdewald P  
 Treatment of osteoarthritis with Pycnogenol®. The SVOS (San Valentino Osteo-Arthrosis Study). Evaluation of Signs, Symptoms, Physical Performance and Vascular Aspects.  
*Phytother Res* 22: 518-523, 2008
- Ref. 188 臨床研究：對於骨關節炎患者，碧容健®可減少其疼痛和關節硬度，允許其減少所需的NSAID藥物量。**  
 Farid R, Mirfeizi Z, Mirheidari M, Rezaieyazdi Z, Mansouri H, Esmaelli H, Zibadi S, Rohdewald P, Watson RR  
 Pycnogenol® supplementation reduces pain and stiffness and improves physical function in adults with knee osteoarthritis.  
*Nutr Res* 27: 692-697, 2007
- Ref. 185 臨床研究：在針對人受試者進行的藥理學調查研究中，碧容健®能夠抑制炎症發生相關的關鍵觸發物。**  
 Grimm T, Chovanova Z, Muchova J, Sumegova K, Liptakova A, Durackova Z, Högger P  
 Inhibition of NF-kappaB activation and MMP-9 secretion by plasma of human volunteers after ingestion of maritime pine bark extract (Pycnogenol®).  
*J Inflamm* 3: 1-6, 2006
- Ref. 176 碧容健®可非選擇性抑制炎症期間疼痛相關的酶活性。**  
 Schäfer A, Chovanová Z, Muchová J, Sumegová K, Liptáková A, Duracková Z, Högger P  
 Inhibition of COX- 1 and COX-2 activity by plasma of human volunteers after ingestion of French maritime pine bark extract (Pycnogenol®).  
*Biomed Pharmacother* 60: 5-9, 2005
- Ref. 107 人血液中發現的碧容健®及其代謝物可有力地抑制結締組織破壞相關的基質金屬蛋白酶。**  
 Grimm T, Schäfer A, Högger P  
 Antioxidant activity and inhibition of matrix metalloproteinases by metabolites of maritime pine bark extract (Pycnogenol®).  
*J Free Radic Biol Med* 36: 811-822, 2004

## 8 男性健康

- Ref. 536 臨床研究：碧容健®和Centellicum®可以減少陰莖斑塊的瘢痕，改善陰莖纖維化。**  
 Ledda A, Cornelli U, Belcaro G, et al.  
 Keloidal penile fibrosis: improvements with Centellicum® (Centella asiatica) and Pycnogenol®supplementation: a pilot registry.  
*Panminerva Med.* 2020;62(1):13- 18. doi:10.23736/S0031-0808. 18.03572-3, 2020
- Ref. 508 臨床研究：碧容健®能改善健康人的勃起功能，對糖尿病患者更是如此。同時，碧容健®可降低總膽固醇和低密度脂蛋白膽固醇，以及糖尿病患者的血糖。**  
 Trebaticky, B., Muchova J, Ziaran S, Bujdak P, Breza J, Durackova Z  
 Natural polyphenols improve erectile function and lipid profile in patients suffering from erectile dysfunction.  
*Bratisl Lek Listy*, 120(12): p. 941-944, 2019
- Ref. 499 臨床研究：基於碧容健®改善內皮功能的能力，碧容健®可減少依他普侖（抗抑鬱藥）引起的性功能障礙和男女的心率升高。**  
 Smetanka A, Stara V, Farsky, I, Tonhajzerova I, Ondrejka I  
 Pycnogenol®supplementation as an adjunct treatment for antidepressant-induced sexual dysfunction.  
*Physiol Int* 106(1): 59-69, 2019

- Ref. 488** 臨床研究：碧容健®可改善老年人的常規體能狀況，減少正常活動（如購物、散步、做家務）中的疲勞負擔。  
 Hosoi M, Cotelless R, Belcaro G, et al.  
*Pycnogenol®: Prevention of muscular mass and strength loss in the elderly.*  
*J Sport Med Physical Fitness, ahead of print, 2018, Pharma standard (PS) supplements. Papers from the London sessions January 2018.*  
 Eds. Belcaro G, Dugall M, Ledda A., ISBN; 978-88-7711-940
- Ref. 478** 臨床研究：碧容健®可顯著改善良性前列腺肥大的所有症狀。對其他方面健康的男性而言，碧容健®可能是對良性前列腺肥大進行自我管理的一個重要選項。  
 Ledda A, Belcaro G, Feragalli B, Cornelli U, Dugall M, Corsi M, Cesarone MR  
*Benign prostatic hypertrophy: Pycnogenol®supplementation improves prostate symptoms and residual bladder volume.*  
*Minerva Medica 109(4): 280-284, 2018*
- Ref. 093** 臨床研究：碧容健®補充會降低總膽固醇和低密度脂蛋白、增加高密度脂蛋白，進而改善動脈粥樣硬化指數。  
 Durackova Z, Trebaticka B, Novotny V, Zitnanova I, Breza J  
*Lipid metabolism and erectile function improvement by Pycnogenol®, extract from the bark of Pinus pinaster in patients suffering from erectile Dysfunction - a pilot study.*  
*Nutr Res 23: 1189- 1198, 2003*
- Ref. 091** 臨床研究：使用碧容健®治療後，功能正常的精子增多，可使不孕夫婦不必依賴體外受精。  
 Roseff SJ  
*Improvement in sperm quality and function with French maritime pine tree bark extract.*  
*J Reprod Med 47: 821-824, 2002*
- Ref. 046** 臨床研究：碧容健®能改善精子的形態。在補充碧容健®後，形態正常的精子的比例增加了99%。  
 Roseff S, Gulati O  
*Improvement of sperm quality by Pycnogenol®.*  
*Eur Bull Drug Res 7: 33-36, 1999*

## 9 口腔健康

- Ref. 534** 臨床研究：糖尿病和非糖尿病的口幹綜合征（*Xerostomia*）患者在補充碧容健®後，唾液流量和粘膜破損和潰瘍得到改善。  
 Belcaro G, Cesarone MR, Cornelli U, Scipione, C., Scipione, V., Dugall, M., Hu, S., Feragalli, B., Hosoi, M., Maione, C., Cotelless, R., Cesinaro Di Rocco, P.  
*Xerostomia: prevention with Pycnogenol®supplementation: a pilot study.*  
*Minerva Stomatol. 2019;68(6):303-307, 2019*
- Ref. 505** 小綜述表明含有碧容健®的牙膏可以改善口腔健康，預防牙周病的發生。  
 Sato, T., K. Watanabe, H. Sasaki, H. Hiramine, S. Goda and N. Hamada  
*Antimicrobial activity and inhibitory effect of alveolar bone loss of toothpaste containing a natural plant extract.*  
*Kanagawa Shigaku 53(1/2): 40-44., 2018*
- Ref. 468** 臨床研究：碧容健®口香糖可有效減輕口臭症狀，其作用機理是減緩舌苔累積，減少唾液中可產生硫化氫的細菌數。  
 Watanabe K, Hiramine H, Toyama T, Hamada N  
*Effects of French Pine Bark Extract Chewing Gum on Oral Malodor and Salivary Bacteria.*  
*J Nutr Sci Vitaminol 64: 185- 191, 2018*
- Ref. 409** 碧容健®補充可作為牙周炎等骨疾病的有效治療及預防藥物。  
 Sugimoto H, Watanabe K, Toyama T, Takahashi S-s, Sugiyama S, Lee M-C-I, Hamada N  
*Inhibitory Effect of French Pine Bark Extract, Pycnogenol®, on Alveolar Bone Resorption and on the Osteoclast Differentiation.*  
*Phytother Res 29(2): 251-259, 2015*
- Ref. 356** 臨床研究：將碧容健®溶於甘油口服，可顯著控制化療兒童患者發生口腔粘膜炎。  
 Khurana H, Pandey RK, Saksena AK, Kumar A  
*An evaluation of vitamin E and Pycnogenol® in children suffering from oral mucositis during cancer chemotherapy.*  
*Oral Dis 19(5): 456-464, 2012*

**Ref. 150** 0.025%濃度的碧容健®就可抑制革蘭氏陽性和陰性菌及白色念珠菌。

Torras MAC, Faura CA, Schönlaub F, Rohdewald P

Short Communication: Antimicrobial activity of Pycnogenol®.

Phytother Res 19: 647-648, 2005

**Ref. 084** 臨床研究：在一項對照臨床試驗中，口香糖中加入碧容健®可減少牙齦出血，並減少牙齒上菌斑的形成。

Kimbrough C, Chun M, de la Roca G, Lau BHS

Pycnogenol® chewing gum minimizes gingival bleeding and plaque formation.

Phytomed 9: 410-413, 2002

**Ref. 030** 碧容健®比其他黃酮類藥物更能延長維生素C的壽命。

Cossins E, Lee R, Packer L

ESR studies of vitamin C regeneration, order of reactivity of natural source phytochemical preparations.

Biochem Mol Biol Int 45: 583-597, 1998

## 10 疼痛管理

**Ref. 576** 臨床研究：碧容健®可緩解下肢不寧綜合征引起的腿部疼痛等癥狀。

Belcaro G, Rohdewald P, Cesaroni MR, Scipione C, Scipione V, Cornelli U, Luzzi R, Cotellese R, Dugall M, Hosoi M, Corsi M, Feragalli B.

Restless legs syndrome: prevention with Pycnogenol® and improvement of the venoarteriolar response.

Panminerva Med. 2022;64(2):253-8, 2022

**Ref. 564** 臨床研究：碧容健®可改善特發性背痛患者的活動能力和疼痛。

Cox D, Belcaro G, Cesaroni MR, Cotellese R, Dugall M, Feragalli B, Hosoi M, Corsi M, Luzzi R.

Primary benign back pain: supplementation with Pycnogenol®

Panminerva Med. 2021 Dec;63(4):472-477, 2021

**Ref. 544** 臨床研究：碧容健®有助於控制和減輕纖維肌痛患者的疼痛強度。

Belcaro G, Hu S, Cesaroni MR, Dugall M, Scipione C, Scipione V, Hosoi M, Ledda A, Cornelli U, Feragalli B, Cotellese R

Idiopathic myalgic pain (fibromyalgia): supportive management and prevention with Pycnogenol®

Panminerva medica 63(1): 46-50, 2021

**Ref. 510** 臨床研究：碧容健®可減少偏頭痛或中度頭痛患者的疼痛、癥狀的數量和嚴重程度。

Cesaroni, M. R., M. Dugall, S. Hu, G. Belcaro, M. Hosoi, V. Scipione, C. Scipione and R. Cotellese

Episodic primary migraine headache: supplementary prophylaxis with Pycnogenol® prevents attacks and controls oxidative stress.

Panminerva Med 62(2): 102- 108, 2020

**Ref. 506** 臨床研究：碧容健®可改善微循環，減輕雷諾綜合征患者的主要癥狀，包括疼痛。

Hu, S., M. Hosoi, G. Belcaro, M. Dugall, B. Feragalli, R. Cotellese and R. Luzzi (2019) “

Management of mild, primary Raynaud Syndrome: supplementation with Pycnogenol®

Minerva Cardioangiologica 67(5): 392-398, 2019

**Ref. 475** 臨床研究：通過對3種不同策略（解痙靈、Antispasmina Col Forte和碧容健®）的比較，發現碧容健在減輕與腸易激綜合征相關的慢性不適方面有較高功效。

Belcaro G, Gizzi G, Pellegrini L, Feragalli B, Cotellese R, Cacchio M, Corsi M

Pycnogenol® supplementation improves the control of irritable bowel syndrome symptoms.

Panminerva Med 60(2): 65-69, 2018

**Ref. 400** 臨床研究：碧容健®與低劑量口服避孕藥聯合使用可有效減緩疼痛，減少出血天數。

Maia H, Haddad C, Casoy J

The effect of Pycnogenol® on patients with dysmenorrhea using low-dose oral contraceptives.

Int J Wo Men's Health 6: 1019- 1022, 2014

**Ref. 272** 臨床研究：針對人體炎症過程的藥理學調查顯示，碧容健®能夠抑制COX-2和5-LOX酶的產生。

Canali R, Comitato R, Schönlaub F, Virgili F

The anti-inflammatory pharmacology of Pycnogenol® in humans involves COX-2 and 5-LOX mRNA expression in leukocytes.

Int Immunopharmacol 9: 1145- 1149, 2009

- Ref. 220** 臨床研究：在一項由日本四家醫院參與的多中心研究中，碧容健®可顯著減輕痛經，減少患者所需的止痛藥量。  
 Suzuki N, Uebaba K, Kohama T, Moniwa N, Kanayama N, Koike K  
 French Maritime Pine Bark Extract Significantly Lowers the Requirement for Analgesic Medication in Dysmenorrhea. A multicenter, randomized, double-blind, placebo-controlled study.  
 J Reprod Med 53: 338-346, 2008
- Ref. 219** 臨床研究：碧容健®可減輕子宮內膜異位疼痛，其副作用少於激素治療，且能夠使一些女性懷孕。  
 Kohama T, Herai K, Inoue M  
 Effect of French Maritime Pine Bark Extract on endometriosis as compared with Leuprorelin acetate.  
 J Reprod Med 52: 703-708, 2007
- Ref. 176** 碧容健®可非選擇性抑制炎症期間疼痛相關的酶活性。  
 Schäfer A, Chovanová Z, Muchová J, Sumegová K, Liptáková A, Duracková Z, Högger P  
 Inhibition of COX- 1 and COX-2 activity by plasma of human volunteers after ingestion of French maritime pine bark extract (Pycnogenol®).  
 Biomed Pharmacother 60: 5-9, 2005
- Ref. 174** 臨床研究：碧容健®可減輕妊娠晚期的下腰痛。  
 Kohama T, Inoue M  
 Pycnogenol® Alleviates Pain Associated with Pregnancy.  
 Phytother Res 20: 232-234, 2006
- Ref. 145** 臨床研究：碧容健®在子宮內膜異位、痛經等婦科疾病治療中，具有一定的鎮痛作用。它能減少經期痙攣、腹痛和壓痛。  
 Kohama T, Suzuki N, Ohno S, Inoue M  
 Analgesic efficacy of French maritime pine bark extract in dysmenorrhea. An open clinical trial.  
 J Reprod Med 49: 828-832, 2004
- Ref. 045** 臨床研究：碧容健®有助於子宮內膜異位、痛經等婦科疾病的治療。它能減少經期痙攣、腹痛和壓痛。  
 Kohama T, Suzuki N  
 The treatment of gynaecological disorders with Pycnogenol®.  
 Eur Bull Drug Res 7: 30-32, 1999

## 11 呼吸系統健康

- Ref. 555** 臨床研究：碧容健®和Centellicum®可減少特發性間質性肺炎的纖維化成分，改善感染新冠肺炎后肺部疾病癥狀。  
 Belcaro Gianni, Cornelli U, Cesarone MR, Hu Shu, Feragalli Beatrice, Corsi Marcello, Bombardelli Ezio, Cotellese Roberto, Hosoi Morio  
 Supplementary management with Pycnogenol®-Centellicum® may slow down the progression of pulmonary fibrosis and improve Post-Covid- 19 lung healing.  
 Biomed J Sci & Tech Res 28(1): 21275-21280, 2020
- Ref. 554** 臨床研究：碧容健®和Centellicum®聯合使用可改善特發性間質性肺炎的癥狀並減緩肺纖維化的發展，還可改善感染新冠肺炎后的肺部疾病。  
 Cesarone MR, Hu S, Belcaro G, Cornelli U, Feragalli B, Corsi M, Bombardelli E, Cotellese R, Hosoi M, Rosenkvist L.  
 Pycnogenol®-Centellicum® supplementation improves lung fibrosis and Post-Covid- 19 lung healing.  
 Minerva Med. 2021 Jun 28, 2021
- Ref. 452** 臨床前研究顯示，碧容健®有助於控制過敏性鼻炎。  
 Günel C, Demirci B, Eryilmaz A, Yilmaz M, Meteoglu I, Ömürlü IK, Basal Y  
 Inhibitory Effect of Pycnogenol® on Airway Inflammation in Ovalbumin-Induced Allergic Rhinitis.  
 Balkan Me J 33: 620-626, 2016
- Ref. 447** 這項臨床前研究表明，碧容健®可通過Erk-sp1途徑抑制CSE刺激的NCI-H292細胞和COPD小鼠模型中炎症反應的減少。我們認為碧容健®可能有改善慢性阻塞性肺疾病癥狀的潛力。  
 Shin N-R, Ryu H-W, Ko J-W, Park J-W, Kwon O-K, Oh S-R, Kim J-C, Shin I-S, Ahn K-S  
 A standardized bark extract of Pinus pinaster Aiton (Pycnogenol®) attenuated chronic obstructive pulmonary disease via Erk-sp 1 signaling pathway.  
 J Ethnopharmacol 194: 412-420, 2016

**Ref. 444** 碧容健®用於治療過敏性鼻炎（hayfever）的優點的綜述。

Ross SM

Allergic Rhinitis. A proprietary extract of Pinus pinaster Aiton (Pycnogenol®) is found to improve the symptoms associated with allergic rhinitis.

Hollist Nurs Pract 30: 301-304, 2016

**Ref. 441** 臨床研究：研究發現碧容健®對過敏有效。

Belcaro G, Feragalli B, Hosoi M, Dugall M, Cornelli U

Pycnogenol® reduces the wheal and flare response to histamine in normal subjects.

Minerva Biotechnologica 28(2): 114- 119, 2016

**Ref. 396** 臨床研究：碧容健®可減少普通感冒的癥狀，縮短其病程，也可預防一些併發症。

Belcaro G, Shu H, Luzzi R, Dugall M, Ippolito E, Cesarone MR, Corsi M, Feragalli B

Improvement of common cold with Pycnogenol®: a Winter registry study.

Panminvera Med 56: 301-308, 2014

**Ref. 380** 碧容健®可抑制大鼠哮喘。

Shin I-S, Shin N-R, Jeon C-M, Hong J-M, Kwon O-K, Kim J-C, O S-R, Hahn K-W, A K-S

Inhibitory effects of Pycnogenol® (French maritime pine bark extract) on airway inflammation in ovalbumin-induced allergic asthma.

Food Chem Toxicol 62: 681-686, 2013

**Ref. 369** 臨床研究：碧容健®補充劑可加速普通感冒的恢復，與維生素C和鋅結合使用，效果更佳。

Belcaro G, Luzzi R, Umberto C, Hu S, Dugall M, Ippolito E, Cesarone MR, Corsi M, Pellegrini L, Ledda A, Appendino G

The common cold Winter Study: Effects of Pycnogenol® on Signs, Symptoms, Complications & Costs.

Otorinolaringol 63: 151- 161, 2013

**Ref. 344** 臨床研究：碧容健®有助於治療過敏性哮喘癥狀，允許患者減少藥物劑量。

Belcaro G, Luzzi R, Cesinaro Di Rocco P, Cesarone MR, Dugall M, Feragalli B, Errichi BM, Ippolito E, Grossi MG, Hosoi M, Errichi S, Cornelli U, Ledda A, Gizioni G

Pycnogenol® improvements in asthma management.

Panminvera Med 53: 57-64, 2011

**Ref. 287** 臨床研究：過敏季節開始之前服用碧容健®可減少過敏人群的枯草熱癥狀和花粉特異性抗體。

Wilson D, Evans M, Guthrie N, Sharma, P, Baisley J, Schönlau F, Burki C

A randomized, double blind, placebo controlled exploratory study to evaluate the potential of Pycnogenol® for improving allergic rhinitis symptoms.

Phytother Res 24: 1115- 1119, 2010

**Ref. 270** 動物實驗中，碧容健®能夠抑制直接免疫球蛋白E介導的過敏反應。這表明碧容健®具有一般的抗過敏功效。

Choi YH, Yan GH

Pycnogenol® inhibits immunoglobulin E-mediated allergic response in mast cells.

Phytother Res 23: 1691- 1695, 2009

**Ref. 149** 臨床研究：碧容健®可改善肺功能，減少兒童哮喘癥狀。

Lau BHS, Riesen SK, Truong KP, Lau EW, Rohdewald P, Barreta RA

Pycnogenol® as an adjunct in the management of childhood asthma.

J Asthma 41: 825-832, 2004

**Ref. 089** 碧容健®阻滯肥大細胞釋放組胺的功效與平喘藥DNCG相同。

Sharma SC, Sharma S, Gulati OP

Pycnogenol® inhibits the release of histamine from mast cells.

Phytother Res 17: 66-69, 2003

**Ref. 077** 臨床研究：在一項安慰劑對照的交叉研究中，碧容健®能夠減少哮喘癥狀、改善哮喘患者的肺功能。

Hosseini S, Pishnamazi S, Sadrzadeh MH, Farid F, Farid R, Watson RR

Pycnogenol® in the management of asthma.

J Med Food 4: 201-209, 2001

## 12 皮膚護理（口服和外用）

**Ref. 571** 臨床研究：局部塗抹碧容健®可有效預防炎症性痤瘡。

Kim K-Y.

The effect Pycnogenol has on the acne skin of Koreans in their 10s and 20s.

Journal of Digital Convergence. 2022;20(3):487–95, 2022

**Ref. 551** 碧容健®以下調酪氨酸酶，減少與色素有關的介質，減少黑色素的產生，從而在體外抑制皮膚色素沉著。

Ayres EL, Silva JDS, Eberlin S, Facchini G, Vasconcellos C, Costa A.

In-vitro effect of pine bark extract on melanin synthesis, tyrosinase activity, production of endothelin- 1 and PPAR in cultured melanocytes exposed to Ultraviolet, Infrared, and Visible light radiation.

J Cosmet Dermatol. 2021

**Ref. 550** 臨床研究：碧容健®對處於巨大環境壓力下的城市戶外工作者的皮膚保濕、彈性和美白都有好處。

Zhao H., Wu J., Wang N., Grether-Beck S., Krutmann J., Wei L.

Oral Pycnogenol® Intake Benefits the Skin in Urban Chinese Outdoor Workers: A Randomized, Placebo-Controlled, Double-Blind, and Crossover Intervention Study

Skin Pharmacol Physiol: p. 1- 11, 2021

**Ref. 545** 外用含有碧容健®的生物膠膜，可以刺激角質細胞生長，促進受損皮膚部位的癒合。

Pagano C, Puglia D, Luzi F, Michele AD, Scuota S, Primavilla S, et al.

Development and Characterization of Xanthan Gum and Alginate Based Bioadhesive Film for Pycnogenol Topical Use in Wound Treatment.

Pharmaceutics 13(3): 324, 2021

**Ref. 542** 在靜脈曲張的硬化治療後或由於慢性靜脈功能不全的皮膚色素沉著過度模型中，碧容健®可防止人類皮膚在炎症壓力下的含鐵血黃素沉積。

Mello Netto BAS, Corassa JM, Facchini G, da Silva MS, Pinheiro ALTA, Eberlin S

Pre-clinical evaluation of the prophylactic effects of Pinus pinaster extract (Pycnogenol®) on skin hemosiderin deposits.

Surg Cosmet Dermatol. Rio de Janeiro v. 11 n.2 abr-jun. 2019 p. 121-5., 2019

**Ref. 439** 碧容健®可以減少人皮膚色素沉著。

Ayres EL, Costa A, Eberlin S, Clerici SP

Ex vivo study for evaluating the whitening activity of Pycnogenol® after exposure to ultraviolet and infrared radiations, and visible lights.

Surg Cosmet Dermatol 7: 303-307, 2015

**Ref. 430** 臨床研究：本文評論了早期的碧容健®臨床研究，確認了碧容健®增強皮膚彈性和增加水分的作用，強調了口服碧容健®使皮膚更加白皙的新成果，以及改善皮膚屏障功能的作用。

Grether-Beck S, Marini A, Jaenicke T, Krutmann J

French Maritime Pine Bark Extract (Pycnogenol®) Effects on Human Skin: Clinical and Molecular Evidence.

Skin Pharmacol Physiol 29: 13- 17, 2016

**Ref. 429** 臨床研究：該研究描述了 31 名女性黑斑病患者補充碧容健®明顯減少了皮膚色素沉著，但使用防曬霜除外。

Pinto CAS, Zuchi Delfes MF, Montanheiro dos Reis L, Garbers LE, Vieira da Rosa Passos PC, Skusa de Torre D

The use of Pycnogenol® in the treatment of melasma.

Surg Cosmet Dermatol 7: 218-222, 2015

**Ref. 414** 臨床研究：研究證明，碧容健®與石榴提取物相結合可以增亮皮膚，有助於減少歐洲和亞洲女性的皮膚斑點。

De Schuyteneer A, Hamon I, Rohdewald P

A formulation of extracts from pine bark and pomegranate improves complexion after oral intake.

Esperienze Dermatologiche 17: 7- 11, 2015

**Ref. 389** 臨床研究：口服碧容健®結合每日使用防曬霜可作為黃褐斑其他治療的輔助手段。

Campos V

Oral administration of Pycnogenol® associated with sunscreen improve clinical symptoms of melasma.

J Am Acad Dermatol AB19 (P8471), 2014

**Ref. 388** 臨床研究：碧容健®補充可改善牛皮癬最常見的臨床表現。

Belcaro G, Luzzi R, Hu S, Cesaroni MR, Dugall M, Ippolito E, Corsi M, Caporale S

Improvement in signs and symptoms in psoriasis patients with Pycnogenol® supplementation.

Panminerva Med 56: 41-48, 2014

**Ref. 348** 臨床研究：碧容健®可增加女性皮膚彈性和水合性，這與皮膚中合成新膠原蛋白和透明質酸的效果顯著一致。

Marini A, Grether-Beck S, Jaenicke T, Weber M, Burki C, Formann P, Brenden H, Schönlau F, Krutmann J  
Pycnogenol® Effects on Skin Elasticity and Hydration Coincide with Increased Gene Expressions of Collagen Type I and Hyaluronic Acid Synthase in Women.  
Skin Pharmacol Physiol 25: 86-92, 2012

**Ref. 243** 碧容健®抑制皮膚細胞中色素形成的功效是曲酸（皮膚美白產品中常用化合物之一）的四倍之多。

Kim YJ, Kang KS, Yokozawa T  
The anti-melanogenic effect of Pycnogenol® by its anti-oxidative actions.  
Food and Chemical Toxicol 46: 2466-2471, 2008

**Ref. 211** 碧容健®具有除皺作用：一篇綜述論文。

Rona C, Vailati F, Berardesca E  
The cosmetic treatment of wrinkles.  
J Cosmet Dermatol 3: 26-34, 2004

**Ref. 195** 臨床研究：碧容健®可加速糖尿病性潰瘍的癒合。

Belcaro G, Cesare MR, Errichi BM, Ledda A, Di Renzo A, Stuard S, Dugall M, Pellegrini L, Gizzi G, Rohdewald P, Ippolito E, Ricci A, Cacchio M, Cipollone G, Ruffini I, Fano F, Hosoi M  
Diabetic Ulcers: Microcirculatory Improvement and Faster Healing with Pycnogenol®.  
Clin Appl Thromb Hemost 12: 318-323, 2006

**Ref. 193** 口服碧容健®能夠延緩並減少紫外光輻射後皮膚癌的發生。

Kyriazi M, Yova D, Rallis M, Lima A  
Cancer chemo preventive effects of Pinus maritima bark extract on ultraviolet radiation and ultraviolet radiation-7,12 dimethylbenz(a)anthracene induced skin carcinogenesis of hairless mice.  
Cancer Lett 237: 234-241, 2006

**Ref. 185** 臨床研究：碧容健®可抑制發炎人皮膚中分解膠原蛋白與彈性蛋白相關的酶的釋放。

Grimm T, Chovanova Z, Muchova J, Sumegova K, Liptakova A, Durackova Z, Högger P  
Inhibition of NF-kappaB activation and MMP-9 secretion by plasma of human volunteers after ingestion of maritime pine bark extract (Pycnogenol®).  
J Inflamm 3: 1-6, 2006

**Ref. 172** 臨床研究：口服加外敷碧容健®可促進小腿潰瘍快速癒合。

Belcaro G, Cesare MR, Errichi BM, Ledda A, Di Renzo A, Stuard S, Dugall M, Pellegrini L, Rohdewald P, Ippolito E, Ricci A, Cacchio M, Ruffini I, Fano F, Hosoi M  
Venous Ulcers: Microcirculatory Improvement and Faster Healing with Local Use of Pycnogenol®.  
Angiology 56: 699-705, 2005

**Ref. 150** 極低濃度的碧容健®也會顯示出抗菌活性。

Torras MAC, Faura CA, Schönlau F, Rohdewald P  
Anti-microbial activity of Pycnogenol®.  
Phytother Res 19: 647-648, 2005

**Ref. 137** 碧容健®可通過人體皮膚吸收的證據。

Sarikaki V, Rallis M, Tanojo H, Panteri I, Dotsikas Y, Loukas YL, Papaioannou G, Demetzos C, Weber S, Moini H, Maibach HI, Packer L  
In vitro percutaneous absorption of pine bark extract (Pycnogenol®) in human skin.  
J Toxicol Cutaneous Ocul Toxicol 23: 149- 158, 2004

**Ref. 133** 外敷碧容健®可呈劑量依賴性加速傷口癒合過程，減少瘢痕形成。

Blazso G, Gabor M, Schönlau F, Rohdewald P  
Pycnogenol® accelerates wound healing and reduces scar formation.  
Phytother Res 18: 579-581, 2004

**Ref. 132** 臨床研究：結合維生素、礦物質，補充碧容健®可改善女性皮膚的光滑度和彈性。

Segger D, Schönlau F  
Supplementation with Evelle® improves smoothness and elasticity in a double blind, placebo- controlled study with 62 women.  
J Dermatolog Treat 15: 222-226, 2004

**Ref. 111** 曬黑後外敷碧容健®可抑制光致癌作用。

Sime S, Reeve VE  
Protection from inflammation, immunosuppression and carcinogenesis induced by UV radiation in mice by topical Pycnogenol®.  
Photochem Photobiol 79: 193- 198, 2004

**Ref. 107** 臨床研究：人口服碧容健®後，體內普遍存在的成分及其代謝物會抑制膠原蛋白和彈性蛋白破壞酶。

Grimm T, Schäfer A, Högger P

Antioxidant activity and inhibition of matrix metalloproteinases by metabolites of maritime pine bark extract (Pycnogenol®).

J Free Radic Biol Med 36: 811-822, 2004

**Ref. 094** 關於碧容健®對皮膚護理有益作用的綜述。

Schönlau F

The cosmeceutical Pycnogenol®.

J Appl Cosmetol 20: 241-246, 2002

**Ref. 081** 臨床研究：碧容健®可消解女性皮膚的色素過度沉著。

Ni Z, Mu Y, Gulati O

Treatment of melasma with Pycnogenol®.

Phytother Res 16: 567-571, 2002

**Ref. 074** 臨床研究：碧容健®可呈劑量依賴性抑制紫外光誘導的人體皮膚紅斑，這說明它具有有效地抗光老化作用。

Saliou C, Rimbach G, Moini H, McLaughlin L, Hosseini S, Lee J, Watson RR, Packer L

Solar ultraviolet-induced erythema in human skin and nuclear factor-kappa-B-dependent gene expression in keratinocytes are modulated by French maritime pine bark extract.

J Free Radic Biol Med 30: 154- 160, 2001

**Ref. 073** 碧容健®會積極影響人角質細胞的基因表達譜，這表明其改善牛皮癬、皮膚病等炎症性皮膚疾病的前景廣闊。

Rihm B, Saliou C, Bottin MC, Keith G, Packer L

From ancient remedies to modern therapeutics: Pine bark uses in skin disorders revisited.

Phytother Res 15: 76-78, 2001

**Ref. 057** 碧容健®可抑制炎症期間人皮膚細胞中粘附分子的產生，這將有助於減輕炎症性皮膚疾病。

Bito T, Roy S, Sen CK, Packer L

Pine bark extract Pycnogenol® down regulates IFN-γ - induced adhesion of T cells to human keratinocytes by inhibiting inducible ICAM- 1 expression.

J Free Radic Biol Med 28: 219-227, 2000

**Ref. 030** 碧容健®可延長維生素C的壽命，這將有助於增加皮膚中維生素C的含量。

Cossins E, Lee R, Packer L

ESR studies of vitamin C regeneration, order of reactivity of natural source phytochemical preparations.

Biochem Mol Biol Int 45: 583-597, 1998

**Ref. 026** 碧容健®可預防α-生育酚被氧化，延長其在內皮細胞中的壽命。

Virgili F, Kim D, Packer L

Procyanidins extracted from pine bark protect α-tocopherol in ECV 304 endothelial cells challenged by activated RAW 264.7 macrophages: role of nitric oxide peroxynitrite.

FEBS Lett 431: 315-318, 1998

**Ref. 019** 碧容健®在兩個不同模型中顯示出抗水腫的作用。外敷碧容健®凝膠可保護皮膚免受紫外輻射之害。

Blazso G, Gabor M, Rohdewald P

Anti-inflammatory activities of procyanidin containing extracts from Pinus pinaster Ait. after oral and cutaneous application.

Pharmazie 52: 380-382, 1997

Skin Care

**Ref. 009** 碧容健®可從病理上增加較低的毛細血管壁阻力。研究顯示，相比試驗的其他生物黃酮素，碧容健®能最有效地強化毛細血管壁，減少毛細血管滲透性，故有助於起到抗水腫、抗炎症的作用。

Gabor M, Engi E, Sonkodi S

Die Kapillarwandresistenz und ihre Beeinflussung durch wasserlösliche Flavon Derivate bei spontan hypertonischen Ratten.

Phlebologie 22: 178- 182, 1993

**Ref. 008** 碧容健®可呈劑量依賴性保護皮膚免受紫外輻射誘導的氧化應激損傷（脂質過氧化和細胞毒性）

Guochang Z

Ultraviolet radiation-induced oxidative stress in cultured human skin fibroblasts and antioxidant protection.

Bio Res Rep Univ Jyväskylä 33: 1-86, 1993

## 13 運動

**Ref. 488 臨床研究：碧容健®可改善老年人的常規體能狀況，減少正常活動（如購物、散步、做家務）中的疲勞負擔。**

Hosoi M, Cotelless R, Belcaro G, et al.

Pycnogenol®: Prevention of muscular mass and strength loss in the elderly.

J Sports Med Physical Fitness, ahead of print, 2018, Pharma standard (PS) supplements. Papers from the London sessions January 2018. Eds. Belcaro G, Dugall M, Ledda A., ISBN: 978-88-7711-940

**Ref 483 臨床研究：碧容健®提供運動後保護，防止氧化壓力。**

Aldret R, Bellar D

A Double-Blind, Cross-Over Study to Examine the Effects of Maritime Pine Extract on Exercise Performance and Postexercise Inflammation, Oxidative Stress, Muscle Soreness, and Damage.

Journal of dietary supplements: 1- 12, 2018

**Ref. 368 臨床研究：碧容健®可減少氧化應激，改善運動員的身體素質。**

Vinciguerra G, Belcaro G, Bonanni E, Cesarone MR, Ledda A, Hosoi M, Dugall M, Cacchio M, Cornelli U

Evaluation of the effects of supplementation with Pycnogenol® on fitness in normal subjects with the Army Physical Fitness Test and in performances of athletes in the 100-minute triathlon.

J Med Phys Fitness 53(6): 644-654, 2013

**Ref. 230 臨床研究：碧容健®攝入可使年輕健康男性的血管舒張增加42%從而保證為肌肉活動提供充足的血液和氧供應。**

Nishioka K, Hidaka T, Nakamura S, Umemura T, Jitsuiki D, Soga J, Goto C, Chayama K, Yoshizumi M, Higashi Y

Pycnogenol®, French Maritime Pine Bark Extract, augments endothelium-dependent vasodilation in humans.

Hypertens Res 30: 775-780, 2007

**Ref. 189 臨床研究：碧容健®可減輕運動員和血管問題或腿部血液迴圈較差患者的肌肉疼痛和痙攣。**

Vinciguerra G, Belcaro G, Cesarone MR, Rohdewald P, Stuard S, Ricci A, Di Renzo A, Hosoi M, Dugall M, Ledda A, Cacchio M, Acerbi G, Fano F Cramps and muscular pain: prevention with Pycnogenol® in normal subjects, venous patients, athletes, claudicants and in diabetic microangiopathy.

Angiology 57: 331-339, 2006

**Ref. 044 臨床研究：通過跑步機測試發現碧容健®可使業餘運動員的運動耐力增加21%。**

Pavlovic P

Improved endurance by use of antioxidants.

Eur Bull Drug Res 7: 26-29, 1999

## 14 旅行健康

**Ref. 469 臨床研究：碧容健®可減輕水腫，對某些血栓事件可能也有控制作用。**

Belcaro G, Cornelli U, Dugall M, Hosoi M, Cotelless R, Feragalli B

Long-haul flights, edema, and thrombotic events: prevention with stockings and Pycnogenol® supplementation (LONFLIT Registry Study). Minerva Cardioangiolog 66: 152- 159, 2018

**Ref. 244 臨床研究：碧容健®可顯著減輕洲際航班乘客常見的時差綜合症嚴重程度。**

Belcaro G, Cesarone MR, Steigerwalt RJ, Di Renzo A, Grossi MG, Ricci A, Stuard S, Ledda A, Dugall M, Cornelli U, Cacchio M

Jet-lag: Prevention with Pycnogenol®. Preliminary report: evaluation in healthy individuals and in hypertensive patients.

Minerva Cardioangiolog 56(5 Suppl): 3-9, 2008

**Ref. 151 臨床研究：在一項雙盲、安慰劑對照研究中，碧容健®能夠有效消解長途飛行期間發生的小腿和腳踝腫脹。**

Cesarone MR, Belcaro G, Rohdewald P, Pellegrini L, Ippolito E, Scocciante M, Ricci A, Dugall M, Cacchio M, Ruffini I, Fano F, Acerbi G,

Vinciguerra MG, Bavera P, Di Renzo A, Errichi BM, Mucci F

Prevention of edema in long flights with Pycnogenol®.

Clin Appl Thromb Hemost 11: 289-294, 2004

**Ref. 134 臨床研究：在一項涉及200位參與者的雙盲、安慰劑對照試驗中，碧容健®可用於預防長途航班乘客的血栓形成。**

Belcaro G, Cesarone MR, Rohdewald P, Ricci A, Ippolito E, Dugall M, Griffin M, Ruffini I, Acerbi G, Vinciguerra MG, Bavera P, Di Renzo A, Errichi BM, Cerritelli F

Prevention of Venous Thrombosis and Thrombophlebitis in Long-Haul Flights with Pycnogenol®.

Clin Appl Thromb Hemost 10: 373-377, 2004

- Ref. 116 臨床研究：碧容健®與納豆激酶結合使用能預防長途飛行中的深靜脈血栓形成。**  
 Cesarone MR, Belcaro G, Nicolaides AN, Ricci A, Geroulakos G, Ippolito E, Brandolini R, Vinciguerra G, Dugall M, Griffin M, Ruffini I, Acerbi G, Corsi M, Riordan N, Stuard S, Bavera P, Di Renzo A, Kenyon J, Errichi BM  
 Prevention of venous thrombosis in long-haul flights with Flite Tabs: The Lonflit- Flite randomized controlled trial.  
*Angiology* 54: 531-539, 2003
- Ref. 036 臨床研究：碧容健®以呈劑量依賴性方式抑制人體的血小板聚集。該作用會持續6天以上，與阿司匹林不同的是，它不會增加出血時間。**  
 Pütter M, Grottemeyer KHM, Würthwein G, Araghi-Niknam M, Watson RR, Hosseini S, Rohdewald P  
 Inhibition of smoking-induced platelet aggregation by Aspirin and Pycnogenol®.  
*Thromb Res* 95: 155- 161, 1999
- ## 15 靜脈健康
- Ref. 542 在靜脈曲張的硬化治療後或由於慢性靜脈功能不全的皮膚色素沉著過度模型中，碧容健®可防止人類皮膚在炎症壓力下的含鐵血黃素沉積。**  
 Mello Netto BAS, Corassa JM, Facchini G, da Silva MS, Pinheiro ALTA, Eberlin S  
 Pre-clinical evaluation of the prophylactic effects of Pinus pinaster extract (Pycnogenol®) on skin hemosiderin deposits.  
*Surg Cosmet Dermatol. Rio de Janeiro v.* 11 n.2 abr-jun. 2019 p. 121-5., 2019
- Ref. 504 臨床研究：碧容健®（作為一種單一的治療方法和與壓迫法聯合使用）對慢性靜脈功能不全的管理、治療和控制有明顯效果。**  
 Cesarone, M. R., G. Belcaro, G. B. Agus, E. Ippolito, M. Dugall, M. Hosoi, M. Corsi, R. Cotellese, B. Feragalli, C. Scipione, V. Scipione and C. Maione  
 Chronic venous insufficiency and venous microangiopathy: management with compression and Pycnogenol®.  
*Minerva Cardioangiologica* 67(4): 280-287, 2019
- Ref. 476 在預防血栓後綜合征和新發靜脈血栓症方面，碧容健®比阿司匹林、舒洛地特和噻氯匹定更加有效。**  
 Belcaro G, Dugall M, Hu S, Feragalli B, Cotellese R, Ledda A, Corsi M, Ricci A, Ippolito E, Errichi BM, Cornelli U, Cesarone MR, Hosoi M  
 Prevention of recurrent venous thrombosis and post-thrombotic syndrome.  
*Minerva Cardioangiologica* 66(3): 238-245, 2018
- Ref. 469 臨床研究：碧容健®可減輕水腫，對某些血栓事件可能也有控制作用。**  
 Belcaro G, Cornelli U, Dugall M, Hosoi M, Cotellese R, Feragalli B  
 Long-haul flights, edema, and thrombotic events: prevention with stockings and Pycnogenol® supplementation (LONFLIT Registry Study).  
*Minerva Cardioangiologica* 66: 152- 159, 2018
- Ref. 463 紹述：碧容健®可緩解靜脈性水腫。通過外用和口服途徑聯合給藥，碧容健®可加快靜脈性潰瘍、糖尿病性潰瘍和痔瘡的癒合。**  
 Rohdewald P  
 Pycnogenol® bei Erkrankungen des venösen Systems – eine systematische Übersicht.  
*Schweiz Z Ganzheitsmed* 29: 372-375, 2017
- Ref. 459 臨床研究：相較於長筒襪、幾種血管活性劑和抗水腫產品，碧容健®似乎是效力最強、療效最好的產品。**  
 Belcaro G, Dugall M, Luzzi R, Corsi M, Ledda A, Ricci A, Pellegrini L, Cesarone MR, Hosoi M, Errichi BM, Cornelli U, Cotellese R, Agus G, Feragalli B  
 Management of varicose veins and chronic venous insufficiency in a comparative registry with nine venoactive products in comparison with stockings.  
*Int J Angiol* 26: 170- 178, 2017
- Ref. 434 紹述：與碧容健®生物活性和碧容健®用於治療浮腫、潰瘍、血栓形成、CVI 和痔瘡的臨床作用有關的研究總結。**  
 Rohdewald P  
 Gerbstoffhaltiger Extrakt zur oralen und topischen Behandlung bei CVI und Hämorrhoidalleiden.  
*Phlebologie* 44: 334-338, 2015
- Ref. 420 臨床研究：碧容健®優於其他靜脈活性藥物。**  
 Belcaro G  
 A clinical comparison of Pycnogenol®, Antistax, and Stocking in Chronic Venous Insufficiency.  
*Int J Angiol* 24: 268-274, 2015

**Ref. 392** 臨床研究：使用碧容健®可改善產後靜脈曲張的體征和癥狀以及靜脈功能，加快靜脈形狀恢復。

Belcaro G, Dugall M, Luzzi R, Ippolito E, Cesarone MR

Postpartum Varicose Veins: Supplementation with Pycnogenol® or Elastic Compression - A 12-Month Follow-Up.

Int J Angiol DOI 10. 1055/s-0033- 1363784, 2014

**Ref. 386** 臨床研究：碧容健®可減少靜脈的被動擴張與延伸，賦予靜脈壁更強大的恢復力和彈性，使其在動態應力后恢復至原有形狀。

Belcaro G, Dugall M, Luzzi R, Hosoi M, Corsi M

Improvement of Venous Tone with Pycnogenol® in Chronic Venous Insufficiency: An Ex Vivo Study on Venous Segments.

Int J Angiol 23:47-52, 2014

**Ref. 383** 臨床研究：妊娠期間，碧容健®可對痔瘡的體征和癥狀表現出積極的作用。

Belcaro G, Gizzi G, Pellegrini M, Dugall M, Luzzi R, Corsi M, Ippolito E, Ricci A, Cesarone MR, Ledda A, Bottari A, Errichi BM

Pycnogenol® in postpartum symptomatic hemorrhoids.

Minerva Ginecologica 66(1): 77-84, 2014

**Ref. 370** 關於靜脈功能不全和血栓形成管理中碧容健®相關作用的臨床前及臨床研究的最新簡明綜合評論。

Gulati OP

Pycnogenol® in Chronic Venous Insufficiency and Related Venous Disorders.

Phytother Res. 2014 Mar;28(3):348-62, 2014

**Ref. 337** 臨床研究：12個月調查期內，碧容健®能預防遭受深靜脈血栓患者發生水腫及血栓復發。

Errichi BM, Belcaro G, Hosoi M, Cesarone MR, Dugall M, Feragalli B, Bavera P, Hosoi M, Zulli C, Corsi M, Ledda A, Luzzi R, Ricci A

Prevention of post thrombotic syndrome with Pycnogenol® in a twelve-month study.

Panminerva Med 53: 21-27, 2011

**Ref. 292** 臨床研究：碧容健®如壓力襪一樣可有效緩解慢性靜脈功能不全患者的體征和癥狀。

Cesarone MR, Belcaro G, Rohdewald P, Pellegrini L, Ledda A, Vinciguerra G, Ricci A, Ippolito E, Fano F, Dugall M, Cacchio M, Di Renzo A,

Hosoi M, Stuard S, Corsi M

Improvement of signs and symptoms of chronic venous insufficiency and microangiopathy with Pycnogenol®: A prospective, controlled study.

Phytomedicine 17: 835-839, 2010

**Ref. 280** 臨床研究：碧容健®治療可減少急性痔瘡患者的疼痛與出血，改善恢復狀況。

Belcaro G, Cesarone MR, Errichi B, Di Renzo A, Grossi MG, Ricci A, Dugall M, Cornelli U, Cacchio M, Rohdewald P

Pycnogenol®Treatment of Acute Hemorrhoidal Episodes.

Phytother Res 24: 438-444, 2010

**Ref. 258** 關於碧容健®用於治療水腫（包括用於長途旅行期間腿部腫脹治療的結果）相關眾多研究的評論。

Belcaro G, Cesarone MR, Cornelli U, Rohdewald P, Ledda A, Di Renzo A, Stuard S, Cacchio M, Vinciguerra G, Gizzi G, Pellegrini L, Dugall M, Ricci A, Ruffini I, Fano F

Treatment of chronic venous insufficiency and prevention of economy class syndrome.

Botanical medicine in clinical practice. (ed.) Watson, R.R., Preedy, V.R.; Wallingford, England, CABI Publishing, Ch. 64: 603-609, 2008

**Ref. 206** 臨床研究：碧容健®可減輕靜脈微血管病。

Cesarone MR, Belcaro G, Rohdewald P, Pellegrini L, Ledda A, Vinciguerra G, Ricci A, Gizzi G, Ippolito E, Fano F, Dugall M, Acerbi G, Cacchio M, Di Renzo A, Hosoi M, Stuard S, Corsi M

Rapid Relief of Signs/Symptoms in Chronic Venous Microangiopathy with Pycnogenol®: A Prospective, Controlled Study.

Angiology 57: 569-576, 2006

**Ref. 200** 臨床研究：碧容健®能減少長期降壓藥物治療的常見副作用水腫。

Belcaro G, Cesarone MR, Ricci A, Cornelli U, Rohdewald P, Ledda A, Di Renzo A, Stuard S, Cacchio M, Vinciguerra G, Gizzi G, Pellegrini L, Dugall M, Fano F

Control of Edema in Hypertensive Subjects Treated with Calcium Antagonist (Nifedipine) or Angiotensin-Converting Enzyme Inhibitors with Pycnogenol®.

Clin Appl Thromb Hemost 12: 440-444, 2006

**Ref. 195** 臨床研究：碧容健®可加速糖尿病潰瘍的癒合。

Belcaro G, Cesarone MR, Errichi BM, Ledda A, Di Renzo A, Stuard S, Dugall M, Pellegrini L, Gizzi G, Rohdewald P, Ippolito E, Ricci A, Cacchio M, Cipollone G, Ruffini I, Fano F, Hosoi M

Diabetic Ulcers: Microcirculatory Improvement and Faster Healing with Pycnogenol®.

Clin Appl Thromb Hemost 12: 318-323, 2006

- Ref. 182** 臨床研究：在一項比較性臨床研究中，碧容健®顯示出比Daflon®治療慢性靜脈功能不全更優越的活性。  
 Cesarone MR, Belcaro G, Rohdewald P, Pellegrini L, Ledda A, Vinciguerra G, Ricci A, Gizzi G, Ippolito E, Fano F, Dugall M, Acerbi G, Cacchio M, Di Renzo A, Hosoi M, Stuard S, Corsi M  
*Comparison of Pycnogenol® and Daflon® in Treating Chronic Venous Insufficiency: A Prospective, Controlled Study.*  
*Clin Appl Thromb Hemost* 12: 205-212, 2006
- Ref. 172** 臨床研究：口服加局部外用碧容健®后可加速小腿潰瘍的癒合。  
 Belcaro G, Cesarone MR, Errichi BM, Ledda A, Di Renzo A, Stuard S, Dugall M, Pellegrini L, Rohdewald P, Ippolito E, Ricci A, Cacchio M, Ruffini I, Fano F, Hosoi M  
*Venous Ulcers: Microcirculatory Improvement and Faster Healing with Local Use of Pycnogenol®.*  
*Angiology* 56: 699-705, 2005
- Ref. 151** 臨床研究：在一項雙盲、安慰劑對照研究中，碧容健®能夠有效消解長途飛行期間發生的小腿和腳踝腫脹。  
 Cesarone MR, Belcaro G, Rohdewald P, Pellegrini L, Ippolito E, Scocciante M, Ricci A, Dugall M, Cacchio M, Ruffini I, Fano F, Acerbi G, Vinciguerra MG, Bavera P, Di Renzo A, Errichi BM, Mucci F  
*Prevention of edema in long flights with Pycnogenol®.*  
*Clin Appl Thromb Hemost* 11: 289-294, 2005
- Ref. 134** 臨床研究：碧容健®能預防長途飛行中的血栓形成與血栓性靜脈炎。  
 Belcaro G, Cesarone MR, Rohdewald P, Ricci A, Ippolito E, Dugall M, Griffin M, Ruffini I, Acerbi G, Vinciguerra MG, Bavera P, Di Renzo A, Errichi BM, Cerritelli F  
*Prevention of venous thrombosis and thrombophlebitis in long-haul flights with Pycnogenol®.*  
*Clin Appl Thromb Hemost* 10: 373-377, 2004
- Ref. 116** 臨床研究：碧容健®與納豆激酶結合使用能預防長途飛行中的深靜脈血栓形成。  
 Cesarone MR, Belcaro G, Nicolaides AN, Ricci A, Geroulakos G, Ippolito E, Brandolini R, Vinciguerra G, Dugall M, Griffin M, Ruffini I, Acerbi G, Corsi M, Riordan N, Stuard S, Bavera P, Di Renzo A, Kenyon J, Errichi BM  
*Prevention of venous thrombosis in long-haul flights with Flite Tabs: The Lonflit- Flite randomized controlled trial.*  
*Angiology* 54: 531-539, 2003
- Ref. 112** 臨床研究：曲克蘆丁中添加碧容健®能顯著增強慢性靜脈功能不全治療的療效，長效緩解癥狀。  
 Riccioni C, Sarcinella R, Izzo A, Palermo G, Ligouri L  
*Efficacia della troxerutina associata a Pycnogenol® nel trattamento farmacologico dell'insufficienza venosa.*  
*Minerva Cardioangiologica* 52: 43-48, 2004
- Ref. 079** 臨床研究：在一項臨床試驗中，碧容健®顯示出比七葉樹籽更高的靜脈功能不全治療療效。  
 Koch R  
*Comparative study of Venostasin® and Pycnogenol® in chronic venous insufficiency.*  
*Phytother Res* 16: 1-5, 2002
- Ref. 067** 臨床研究：碧容健®可顯著減輕慢性靜脈功能不全的癥狀。  
 Petrassi C, Mastromarino A, Spartera C  
*Pycnogenol® in chronic venous insufficiency.*  
*Phytomed* 7: 383-388, 2000
- Ref. 066** 臨床研究：碧容健®可顯著改善慢性靜脈功能不全，促進其癥狀的消失。  
 Arcangeli P  
*Pycnogenol® in chronic venous insufficiency.*  
*Fitoterapia* 71: 236-244, 2000
- Ref. 041** 総述論文：介紹了碧容健®治療人靜脈疾病的療效性及安全性。文章還討論了減輕水腫的治療機制。  
 Gulati OP  
*Pycnogenol® in venous disorders: A review.*  
*Eur Bull Drug Res* 7: 8- 13, 1999
- Ref. 009** 碧容健®可從病理上增加較低的毛細血管壁阻力。研究顯示，相比試驗的其他生物黃酮素，碧容健®能最有效地強化毛細血管壁，減少毛細血管滲透性。  
 Gabor M, Engi E, Sonkodi S  
*Die Kapillarwandresistenz und ihre Beeinflussung durch wasserlösliche Flavon Derivate bei spontan hypertonischen Ratten.*  
*Phlebologie* 22: 178- 182, 1993

## 16 女性健康

**Ref. 563** 臨床研究：碧容健®的預防性治療減少了尿路感染的發生和癥狀。

Cotellese R, Hu S, Cesaroni MR, Belcaro G, Dugall M, Feragalli B, Hosoi M, Ippolito E, Corsi M, Luzzi R. Pycnogenol®supplementation prevents inflammation and symptoms in recurrent, non-severe urinary infections. Panminerva Med. 2021 Sep;63(3):343-348., 2021

**Ref. 556** 臨床研究：碧容健®能減少尿路感染和間質性膀胱炎的發生，其療效比蔓越莓好。

A. Ledda, S. Hu, M. R. Cesaroni, G. Belcaro, M. Dugall, B. Feragalli, R. Cotellese, M. Hosoi, E. Ippolito, M. Corsi, and R. Luzzi Pycnogenol® Supplementation Prevents Recurrent Urinary Tract Infections/Inflammation and Interstitial Cystitis. Evidence-Based Complementary and Alternative Medicine, vol. 2021, p. 9976299, 2021

**Ref. 499** 基於碧容健®改善內皮功能的能力，碧容健®可減少依他普侖（抗抑鬱藥）引起的性功能障礙和男女的心率升高。

Smetanka A, Stara V, Farsky, I, Tonhajzerova I, Ondrejka I Pycnogenol®supplementation as an adjunct treatment for antidepressant-induced sexual dysfunction. Physiol Int 106(1): 59-69, 2019

**Ref. 462** 緒述：碧容健®可通過非激素途徑改善婦女的健康情況。

Rohdewald PJ  
Pycnogenol®, a Plant Extract for women's health.  
Int J women's health Care (IJWHC) 2(1): 1-5, 2017

**Ref. 453** 臨床研究：碧容健®能進一步緩解更年期癥狀，明顯改善血糖和血脂，並能維持健康的血壓、C反應蛋白和同型半胱氨酸值。

Luzzi R, Belcaro G, Hosoi M, Feragalli B, Cornelli U, Dugall M, Ledda A  
Normalization of cardiovascular risk factors in peri-menopausal women with Pycnogenol®. Minerva Ginecol 69: 29-34, 2017

**Ref. 449** 一項關於碧容健®通過改善內皮功能和抗氧化狀態來緩解更年期癥狀的療效的緒述。

Rohdewald P  
Relief from Menopausal Symptoms by Non-hormonal Treatment with Pycnogenol® (French Maritime Pine Bark Extract). J Genit Syst & Disor 5: 4, 2016

**Ref. 430** 臨床研究：本文評論了早期的碧容健®臨床研究，確認了碧容健®增強皮膚彈性和增加水分的作用，強調了口服碧容健®使皮膚更加白皙的新成果，以及改善皮膚屏障功能的作用。

Grether-Beck S, Marini A, Jaenicke T, Krutmann J  
French Maritime Pine Bark Extract (Pycnogenol®) Effects on Human Skin: Clinical and Molecular Evidence. Skin Pharmacol Physiol 29: 13- 17, 2016

**Ref. 429** 臨床研究：該研究描述了 31 名女性黑斑病患者補充碧容健®明顯減少了皮膚色素沉著，但使用防曬霜除外。

Pinto CAS, Zuchi Delfes MF, Montanheiro dos Reis L, Garbers LE, Vieira da Rosa Passos PC, Skusa de Torre D  
The use of Pycnogenol® in the treatment of melasma. Surg Cosmet Dermatol 7: 218-222, 2015

**Ref. 423** 在臨床前更年期研究中，碧容健®可以用來抑制骨質疏鬆症。

Huang G, Wu J, Wang S, Wei Y, Chen F, Chen J, Shi J, Xia J  
Pycnogenol®treatment inhibits bone mineral density loss and trabecular deterioration in ovariectomized rats. Int J Clin Exp Med 8(79): 10893- 10901, 2015

**Ref. 400** 臨床研究：與低劑量口服避孕藥結合治療，碧容健®可有效減少疼痛和出血天數。

Maia H, Haddad C, Casoy J  
The effect of Pycnogenol® on patients with dysmenorrhea using low-dose oral contraceptives. Int J Women' s Health 6: 1019- 1022, 2014

**Ref. 392** 臨床研究：使用碧容健®可改善產後靜脈曲張的體征和癥狀以及靜脈功能，加快靜脈形狀恢復。

Belcaro G, Dugall M, Luzzi R, Ippolito E, Cesaroni MR  
Postpartum Varicose Veins: Supplementation with Pycnogenol® or Elastic Compression - A 12-Month Follow-Up. Int J Angiol DOI 10. 1055/s-0033- 1363784, 2014

**Ref. 389** 臨床研究：口服碧容健®結合每日使用防曬霜可作為黃褐斑其他治療的輔助手段。

Campos V  
Oral administration of Pycnogenol® associated with sunscreen improve clinical symptoms of melasma. J Am Acad Dermatol AB19 (P8471), 2014

- Ref. 387 臨床研究：對於子宮內膜異位患者，口服避孕藥與碧容健®聯合治療可對其內膜正位具有積極地協同作用。**  
 Maia H, Haddad C, Pinheiro N, Casoy J  
 The Effect of Oral Contraceptives Combined with Pycnogenol (Pinus Pinaster) On Aromatase and VEGF Expression in the Eutopic Endometrium of Endometriosis Patients.  
*Gynecol Obstet* 4:2, 2014
- Ref. 383 臨床研究：妊娠期間，碧容健®可對痔瘡的體征和癥狀表現出積極的作用。**  
 Belcaro G, Gizzi G, Pellegrini M, Dugall M, Luzzi R, Corsi M, Ippolito E, Ricci A, Cesarone MR, Ledda A, Bottari A, Errichi BM  
 Pycnogenol® in postpartum symptomatic hemorrhoids.  
*Minerva Ginecologica* 66(1): 77-84, 2014
- Ref. 378 臨床研究：碧容健®與口服避孕藥一起服用可減輕子宮內膜異位引起的疼痛。**  
 Maia H, Haddad C, Casoy J  
 Combining oral contraceptives with a natural nuclear factor-kappa B inhibitor for the treatment of endometriosis-related pain.  
*Int J Womens Health* 6: 35-39, 2014
- Ref. 376 臨床研究：每日攝入60mg相對低劑量的碧容健®可顯著改善圍絕經期癥狀，並且研究顯示此攝入劑量不會干擾性激素水準。**  
 Kohama T, Negami M  
 Effect of low-dose French maritime pine bark extract on climacteric syndrome in 170 perimenopausal women.  
*J Reprod Med* 58(1-2): 39-46, 2013
- Ref. 348 臨床研究：碧容健®可增加女性皮膚彈性和水合性，這與皮膚中合成新膠原蛋白和透明質酸的效果顯著一致。**  
 Marini A, Grether-Beck S, Jaenicke T, Weber M, Burki C, Formann P, Brenden H, Schönlau F, Krutmann J  
 Pycnogenol® Effects on Skin Elasticity and Hydration Coincide with Increased Gene Expressions of Collagen Type I and Hyaluronic Acid Synthase in Women.  
*Skin Pharmacol Physiol* 25: 86-92, 2012
- Ref. 336 臨床研究：碧容健®可顯著減少與更年期過渡期有關的癥狀和體征。**  
 Errichi S, Bottari A, Belcaro G, Cesarone MR, Hosoi M, Cornelli U, Dugall M, Ledda A, Feragalli B  
 Supplementation with Pycnogenol® improves signs and symptoms of menopausal transition.  
*Panminerva Med* 53: 65-70, 2011
- Ref. 220 臨床研究：在一項由日本四家醫院參與的多中心研究中，碧容健®可顯著減輕痛經，減少患者所需的止痛藥量。**  
 Suzuki N, Uebaba K, Kohama T, Moniwa N, Kanayama N, Koike K  
 French Maritime Pine Bark Extract Significantly Lowers the Requirement for Analgesic Medication in Dysmenorrhea. A multicenter, randomized, double-blind, placebo-controlled study.  
*J Reprod Med* 53: 338-346, 2008
- Ref. 219 臨床研究：碧容健®可減輕子宮內膜異位疼痛，其副作用少於激素治療，且能夠使一些女性懷孕。**  
 Kohama T, Herai K, Inoue M  
 Effect of French Maritime Pine Bark Extract on endometriosis as compared with Leuprorelin acetate.  
*J Reprod Med* 52: 703-708, 2007
- Ref. 187 臨床研究：在一項針對200位絕經女性的研究中，碧容健®能夠改善大範圍的更年期癥狀。**  
 Yang H-M, Liao M-F, Zhu SY, Liao M-N, Rohdewald P  
 A randomized, double-blind, placebo-controlled trial on the effect of Pycnogenol® on the climacteric syndrome in peri-menopausal women.  
*Acta Obstet Gynecol Scand* 86: 978-985, 2007
- Ref. 174 臨床研究：碧容健®可減輕妊娠晚期的下腰痛。**  
 Kohama T, Inoue M  
 Pycnogenol® Alleviates Pain Associated with Pregnancy.  
*Phytother Res* 20: 232-234, 2006
- Ref. 145 臨床研究：碧容健®在子宮內膜異位、痛經等婦科疾病治療中，具有一定的鎮痛作用。它能減少經期痙攣、腹痛和壓痛。**  
 Kohama T, Suzuki N, Ohno S, Inoue M  
 Analgesic efficacy of French maritime pine bark extract in dysmenorrhea. An open clinical trial.  
*J Reprod Med* 49: 828-832, 2004
- Ref. 045 臨床研究：碧容健®有助於子宮內膜異位、痛經等婦科疾病的治療。它能減少經期痙攣、腹痛和壓痛。**  
 Kohama T, Suzuki N  
 The treatment of gynaecological disorders with Pycnogenol®.  
*Eur Bull Drug Res* 7: 30-32, 1999

## II. 作用機制

### 17 抗炎作用

**Ref. 563 臨床研究：碧容健®的預防性治療減少了尿路感染的發生和癥狀。**

Cotellese R, Hu S, Cesareo MR, Belcaro G, Dugall M, Feragalli B, Hosoi M, Ippolito E, Corsi M, Luzzi R. Pycnogenol® supplementation prevents inflammation and symptoms in recurrent, non-severe urinary infections. Panminerva Med. 2021 Sep;63(3):343-348., 2021

**Ref. 556 臨床研究：碧容健®能減少尿路感染和間質性膀胱炎的發生，其療效比蔓越莓好。**

A. Ledda, S. Hu, M. R. Cesareo, G. Belcaro, M. Dugall, B. Feragalli, R. Cotellese, M. Hosoi, E. Ippolito, M. Corsi, and R. Luzzi. Pycnogenol® Supplementation Prevents Recurrent Urinary Tract Infections/Inflammation and Interstitial Cystitis. Evidence-Based Complementary and Alternative Medicine, vol. 2021, p. 9976299, 2021

**Ref. 553 臨床研究：碧容健®能顯著改善與新冠疫情后有關的一些跡象和癥狀，改善心血管風險因素。**

Belcaro G, Cornelli U, Cesareo MR, Scipione C, Scipione V, Hu S, Feragalli B, Corsi M, Cox D, Cotellese R, Hosoi M, Burki C. Preventive effects of Pycnogenol® on cardiovascular risk factors (including endothelial function) and microcirculation in subjects recovering from coronavirus disease 2019 (COVID- 19). Minerva Med. 113(2):300-8, 2022

**Ref. 498 碧容健®的胃腸道代謝作用顯示其具有免疫調節和抗炎特性。**

Verlaet A, van der Bolt N, Meijer B, et al. Toll-Like Receptor-Dependent Immunomodulatory Activity of Pycnogenol®. Nutrients 11: 214; doi:10.3390/nu11020214, 2019

**Ref. 487 臨床研究：發生特發性、良性和短暫性頸痛時，使用碧容健®貼片可安全有效地控制疼痛、改善癥狀。**

Belcaro G, Dugall M, Feragalli B, et al. Prevention of symptoms associated to neck pain with a Pycnogenol® patch. J Sport Med Physical Fitness, Pharma standard (PS) supplements. Papers from the London sessions January 2018. Eds. Belcaro G, Dugall M, Ledda A., ISBN; 978-88-7711-940, 2018

**Ref. 485 臨床研究：給處於緩解期的乾燥綜合征患者補充碧容健®可有效控制炎症、減輕癥狀。**

Luzzi R, Belcaro G, Hu S, et al. Efficacy of Pycnogenol® supplementation in remission phases of Sjögren syndrome. Min Cardioangiolog 66(5): 543-546, 2018

**Ref. 484 臨床研究：補充碧容健®對白塞綜合征進行管理是有益的。**

Hu S, Belcaro G, Ledda A, et al. Behcet's Syndrome: Effects of Pycnogenol® addition during regression phases. Minerva Cardioangiologica 66(4): 386-390, 2018

**Ref. 451 臨床研究：碧容健®可以局部塗抹，以減輕肌肉酸痛。**

Luzzi R, Belcaro G, Feragalli B, Dugall M. Moderate, diffuse, somatic muscular pain: effects of supplementation with a Pycnogenol® patch. Minerva Ortopedica e Traumatologica 67(4): 170- 176, 2016

**Ref. 447 這項臨床前研究表明，碧容健®可通過 Erk-sp1 途徑抑制 CSE 刺激的 NCI-H292 細胞和 COPD 小鼠模型中炎症反應的減少。我們認為碧容健®可能有改善慢性阻塞性肺疾病癥狀的潛力。**

Shin N-R, Ryu H-W, Ko J-W, Park J-W, Kwon O-K, Oh S-R, Kim J-C, Shin I-S, Ahn K-S. A standardized bark extract of Pinus pinaster Aiton (Pycnogenol®) attenuated chronic obstructive pulmonary disease via Erk-sp 1 signaling pathway. J Ethnopharmacol 194: 412-420, 2016

**Ref. 427 臨床研究：分析血液和滑液樣品中的碧容健®成分和代謝物，以闡明人體中的組織分佈。該研究確定了法國海濱松樹皮提取物的哪些化合物被吸收，以及它們如何在體內分佈的。**

Högger P. PL4: Pharmacokinetics and cellular effects of a French maritime pine bark extract in humans. Nutrition and Medicine 3(S1): 20, 2015

**Ref. 424** 臨床前研究中碧容健®抵抗腦小膠質細胞的炎症情況。

Fan B, Dun S-H, Gu J-Q, Guo Y, Ikuyama S

Pycnogenol attenuates the release of proinflammatory cytokines and expression of perilipin 2 in lipopolysaccharides-stimulated microglia in part via inhibition of NF- $\kappa$ B and AP-1 activation.

PLOS ONE 10(9): e0137837.doi:10.1371/journal, 2015

**Ref. 418** 碧容健®可說明避免術後腹膜纖維粘連的形成。

Sahbaz A, Aynioglu O, Isik H, Gun BD, Cengil O, Erol O

Pycnogenol prevents peritoneal adhesions.

Arch Gynecol Obstet. 292: 1279-1284, 2015

**Ref. 408** 臨床研究：碧容健®可改善內皮功能。這項公開註冊研究的結果表明，對於邊緣型高血壓、高血糖和高脂血症受試者來說，很可能有重要的預防性作用。

Hu S, Belcaro G, Cornelli U, Luzzi R, Cesarone MR, Dugall M, Feragalli B, Errichi B, Ippolito E, Grossi MG, Hosoi M, Gizzi G, Trignani M  
Effects of Pycnogenol® on endothelial dysfunction in borderline hypertensive, hyperlipidemic, and hyperglycemic individuals: the borderline study.

Int Angiol 34(1): 43-52, 2015

**Ref. 396** 臨床研究：碧容健®可減少普通感冒的癥狀，縮短其病程，也可預防一些併發症。

Belcaro G, Shu H, Luzzi R, Dugall M, Ippolito E, Cesarone MR, Corsi M, Feragalli B

Improvement of common cold with Pycnogenol®: a Winter registry study.

Panminvera Med 56: 301-308, 2014

**Ref. 387** 臨床研究：對於子宮內膜異位患者，口服避孕藥與碧容健®聯合治療可對其內膜正位具有積極地協同作用。

Maia H, Haddad C, Pinheiro N, Casoy J

The Effect of Oral Contraceptives Combined With Pycnogenol (Pinus Pinaster) On Aromatase and VEGF Expression in the Eutopic Endometrium of Endometriosis Patients.

Gynecol Obstet 4:2, 2014

**Ref. 334** 臨床研究：對於子宮內膜異位患者，口服避孕藥與碧容健®聯合治療可對其內膜正位具有積極地協同作用。

Kim YJ, Kim YA, Yokozawa T

Pycnogenol® modulates apoptosis by suppressing oxidative stress and inflammation in high glucose-treated renal tubular cells.

Food Chem Toxicol 49: 2196-2201, 2011

**Ref. 283** 臨床研究：碧容健®可顯著減少慢性腎疾病高血壓患者體內的炎症性標記物C反應蛋白。

Cesarone MR, Belcaro G, Stuard S, Schönlauf F, Di Renzo A, Grossi MG, Dugall M, Cornelli U, Caccio M, Gizzi G, Pellegrini L.

Kidney Flow and Function in Hypertension: Protective Effects of Pycnogenol® in Hypertensive Participants - A Controlled Study.

J Cardiovasc Pharmacol Ther 15: 41-46, 2010

**Ref. 272** 臨床研究：針對人體炎症過程的藥理學調查顯示，碧容健®能夠抑制COX-2和5-LOX酶的產生。

Canali R, Comitato R, Schönlauf F, Virgili F

The anti-inflammatory pharmacology of Pycnogenol® in humans involves COX-2 and 5-LOX mRNA expression in leukocytes.

Int Immunopharmacol 9: 1145-1149, 2009

**Ref. 250** 臨床研究：碧容健®可顯著減少骨關節炎患者體內的炎症性標記物C反應蛋白，這說明它具有一定的抗炎性功效。

Belcaro G, Cesarone MR, Errichi S, Zulli C, Errichi BM, Vinciguerra G, Ledda A, Di Renzo A, Stuard S, Dugall M, Pellegrini L, Gizzi G,

Ippolito E, Ricci A, Caccio M, Cipollone G, Ruffini I, Fano F, Hosoi M, Rohdewald P

Variations in C-reactive protein, plasma free radicals and fibrinogen values in patients with osteoarthritis treated with Pycnogenol®.

Redox Rep 13: 271-276, 2008

**Ref. 208** 碧容健®體外研究提供了其化學預防方面的證據。

Buz'Zard AR, Lau BHS

Pycnogenol® reduces Talc-induced Neoplastic Transformation in Human Ovarian Cell Cultures.

Phytother Res 21: 579-586, 2007

**Ref. 185** 臨床研究：碧容健®可抑制發炎人皮膚中分解膠原蛋白與彈性蛋白相關的酶的釋放。

Grimm T, Chovanova Z, Muchova J, Sumegova K, Liptakova A, Durackova Z, Högger P

Inhibition of NF-kappaB activation and MMP-9 secretion by plasma of human volunteers after ingestion of maritime pine bark extract (Pycnogenol®).

J Inflamm 3: 1-6, 2006

**Ref. 183** 碧容健®可保護腸黏膜免受放療之害：大鼠的組織形態學證據。

Ramos FM, Schönlau F, Novaes PD, Manzi FR, Bóscolo FN, Almeida SM

Pycnogenol® protects against ionizing radiation as shown in the intestinal mucosa of rats exposed to X-rays.

Phytother Res 20: 676-679, 2006

**Ref. 176** 碧容健®可非選擇性抑制炎症期間疼痛相關的酶活性。

Schäfer A, Chovanová Z, Muchová J, Sumegová K, Liptáková A, Duracková Z, Högger P

Inhibition of COX- 1 and COX-2 activity by plasma of human volunteers after ingestion of French maritime pine bark extract (Pycnogenol®).

Biomed Pharmacother 60: 5-9, 2005

**Ref. 154** 碧容健®能夠顯著消解實驗動物模型結腸的炎症損害。

Mochizuki M, Hasegawa N

Therapeutic efficacy of Pycnogenol® in experimental inflammatory bowel diseases.

Phytother Res 18: 1027- 1028, 2004

**Ref. 107** 碧容健®可高效抑制結締組織破壞相關的基質金屬蛋白酶以及其在人血液中的代謝物。

Grimm T, Schäfer A, Högger P

Antioxidant activity and inhibition of matrix metalloproteinases by metabolites of maritime pine bark extract (Pycnogenol®).

J Free Radic Biol Med 36: 811-822, 2004

**Ref. 074** 臨床研究：碧容健®可呈劑量依賴性抑制紫外光誘導的人體皮膚紅斑，這說明它具有有效地抗光老化作用。

Salioú C, Rimbach G, Moini H, McLaughlin L, Hosseini S, Lee J, Watson RR, Packer L

Solar ultraviolet-induced erythema in human skin and nuclear factor-kappa-B-dependent gene expression in keratinocytes are modulated by French maritime pine bark extract.

J Free Radic Biol Med 30: 154- 160, 2001

**Ref. 068** 碧容健®可抑制組織白細胞募集相關的數個機制，進而導致抗炎症活性產生。

Peng Q, Wei Z, Lau BHS

Pycnogenol® inhibits tumor necrosis factor- $\alpha$ -induced nuclear factor kappa B activation and adhesion molecule expression in human vascular endothelial cells.

Cell Mol Life Sci 57: 834-841, 2000

**Ref. 019** 碧容健®在兩個不同模型中顯示出抗炎症和抗水腫的作用。外敷碧容健®凝膠可保護皮膚免受紫外輻射之害。

Blazso G, Gabor M, Rohdewald P

Anti-inflammatory activities of procyanidin containing extracts from Pinus pinaster Ait. after oral and cutaneous application.

Pharmazie 52: 380-382, 1997

**Ref. 010** 碧容健®可清除體外的超氧自由基，抑制體內水腫。抗炎性與自由基清除活動密切相關。

Blazso G, Gabor M, Sibbel R, Rohdewald P

Anti-inflammatory and superoxide radical scavenging activities of a procyanidins containing extract from the bark of Pinus pinaster sol. and its fractions.

Pharm Pharmacol Lett 3: 217-220, 1994

## 18 抗氧化活性

**Ref. 560** 臨床研究：在一定劑量下，碧容健®可降低高氧化應激受試者的氧化應激，即使在低劑量時也有效。

Belcaro G, Cesarone MR, Dugall M, Hu S, Peterzan P, Feragalli B, Hosoi M, Cotellese R.

Effects of different doses of Pycnogenol® on plasma oxidative stress: a pilot, supplement study.

Edizioni Minerva Medica, 180(6):289-94, 2021

**Ref. 559** 在一定劑量下，碧容健®顯示出很強的抗氧化特性，在不同的pH值下僅有輕微變化。

Cizmarova, B.; Birkova, A.; Hubkova, B.; Bolerazska, B.

Pycnogenol - extract from French maritime pine bark (Pinus pinaster), as an effective antioxidant against superoxide radical.

Functional Food Science 1, 14-22, doi:10.31989/ffs.v1i8.816, 2021

**Ref. 486** 臨床研究：對於採用激素替代療法治療甲狀腺功能減退的患者來說，碧容健®是用來減輕左旋甲狀腺素相關副作用的有用工具。

Belcaro G, Cornelli U, Dugall M, et al.

Pycnogenol® prevents oxidative stress and side effects in patients with hypothyroidism during levothyroxine treatment.

Min Endocrinol, 2018, Pharma standard (PS) supplements. Papers from the London sessions January 2018. Eds. Belcaro G, Dugall M, Ledda A., ISBN: 978-88-7711-940

- Ref. 431** 臨床研究：補充碧容健®12 個月可提高 55 至 70 歲正常受試者的認知能力，降低氧化應激水準。  
 Belcaro G, Dugall M, Ippolito E, Hu S, Saggino A, Feragalli B  
 The COFU3 Study: Improvement in cognitive function, attention, mental performance with Pycnogenol® in healthy subjects (55-70) with high oxidative stress.  
*J Neurosurg Sci* 59: 437-446, 2015
- Ref. 430** 臨床研究：本文評論了早期的碧容健®臨床研究，確認了碧容健®增強皮膚彈性和增加水分的作用，強調了口服碧容健®使皮膚更加白皙的新成果，以及改善皮膚屏障功能的作用。  
 Grether-Beck S, Marini A, Jaenicke T, Krutmann J  
 French Maritime Pine Bark Extract (Pycnogenol®) Effects on Human Skin: Clinical and Molecular Evidence.  
*Skin Pharmacol Physiol* 29: 13- 17, 2016
- Ref. 406** 碧容健®對於急性肝損傷具有一定的防護作用。  
 Ko J-W, Lee I-C, Park S-H, Moon C, Kang S-S, Kim S-H, Kim J-C  
 Protective effects of pine bark extract against cisplatin-induced hepatotoxicity and oxidative stress in rats.  
*Lab Anim Res* 30(4): 174- 180, 2014
- Ref. 405** 300mg 的單劑量碧容健®可誘使人纖維肉瘤細胞死亡。  
 Harati K, Slodnik P, Chromik AM, et al  
 Pro-apoptotic effects of Pycnogenol on HT1080 human fibrosarcoma cells.  
*Int J Oncol* DOI 10.3892/ijo.2015.2854, 2014
- Ref. 404** 碧容健®是粘液表皮樣癌治療的最佳備選藥物。  
 Yang I-H, Shin J-A, Cho S-D  
 Pycnogenol® induces nuclear translocation of apoptosis-inducing factor and caspase-independent apoptosis in MC-3 human mucoepidermoid carcinoma cell line.  
*J Cancer Prevention* 19: 265-272, 2014
- Ref. 401** 臨床研究：碧容健®攝入可降低血糖水平，增強血漿的抗氧化能力。  
 Muchova J, Orszaghova Z, Zitnanova I, Trebaticky B, Breza J, Durackova Z  
 The effect of natural polyphenols on the oxidative stress markers in patients with diabetic nephropathy.  
*Free Rad Biol Med* 72: 42, 2014
- Ref. 397** 碧容健®可改善實驗性糖尿病大鼠的心臟功能碧容健®可改善實驗性糖尿病大鼠的心臟功能。  
 Kralova E, Jankyova S, Mucaji P, Gresakova E, Stankovicova T  
 Pycnogenol and its fractions influence the function of isolated heart in rats with experimental diabetes mellitus.  
*J Pathology Research & Practice*, 211: 156- 161; 2015
- Ref. 396** 臨床研究：碧容健®可減少普通感冒的症狀，縮短其病程，也可預防一些并发症。  
 Belcaro G, Shu H, Luzzi R, Dugall M, Ippolito E, Cesareone MR, Corsi M, Feragalli B  
 Improvement of common cold with Pycnogenol®: a Winter registry study.  
*Panminerva Med* 56: 301-308, 2014
- Ref. 395** 補充碧容健®可以恢復紊亂的免疫功能，預防早逝。  
 Lee J, Nam D-E, Kim O-K, Lee M-Y  
 Pycnogenol® attenuates the symptoms of immune dysfunction through restoring a cellular antioxidant status in low micronutrient-induced immune deficient mice.  
*Nutr Res Pract* 8(5): 533-538, 2014
- Ref. 391** 碧容健®通過減少大鼠的DNA損傷、增強抗氧化及DNA修復能力，在預防敗血症誘發的氧化損傷中發揮著一定作用。  
 Taner G, Aydin S, Bacanlı M, Sarıgöl Z, Sahin T, Başaran AA and Başaran N  
 Modulating Effects of Pycnogenol® on Oxidative Stress and DNA Damage Induced by Sepsis in Rats.  
*Phytother Res* 28(11): 1692-700, 2014
- Ref. 390** 碧容健®的抗氧化活性對治療類似抑鬱症行為有一定的積極作用。  
 Mei L, Mochizuki M, Hasegawa N  
 Pycnogenol® Ameliorates Depression-Like Behavior in Repeated Corticosterone-Induced Depression Mice Model.  
*BioMed Res Int Article* – <http://dx.doi.org/10.1155/2014/942927>, 2014
- Ref. 388** 臨床研究：碧容健®補充可改善牛皮癬最常見的臨床表現。  
 Belcaro G, Luzzi R, Hu S, Cesareone MR, Dugall M, Ippolito E, Corsi M, Caporaso S  
 Improvement in signs and symptoms in psoriasis patients with Pycnogenol® supplementation.  
*Panminerva Med* 56: 41-48, 2014

**Ref. 385** 碧容健®有益於新陳代謝及心血管健康。

Aribal-Ayral P, Özcelci-Kavas G, Elhan AH  
Pycnogenol® supplementation and its beneficial effects in healthy rats.  
Saudi Med J 35(2): 195- 197, 2014

**Ref. 367** 臨床研究：155位志願者每日攝入50mg碧容健®可顯著中和自由基，抑制氧化應激。

Belcaro G, Hu S, Cesarone MR, Dugall M  
A controlled study shows daily intake of 50mg Pycnogenol® significantly lowers plasma reactive oxygen metabolites in 155 healthy smokers.  
Minerva Med 104(4): 439-446, 2013

**Ref. 349** 臨床研究：據血液F2-異前列烷水準降低判斷，碧容健®可顯著減少心臟病患者的氧化應激反應。

Enseleit F, Sudano I, Périat D, Winnik S, Wolfrum M, Flammer AJ, Fröhlich GM, Kaiser P, Hirt A, Haile SR, Krasniqi N, Matter CM, Uhlenhut K, Högger P, Neidhart M, Lüscher TF, Ruschitzka F, Noll G  
Effects of Pycnogenol® on endothelial function in patients with stable coronary artery disease: a double-blind, randomized, placebo-controlled, cross-over study.  
Eur Heart J 33(13): 1589-97, 2012

**Ref. 334** 藥理學實驗中，碧容健®被證實能夠保護糖尿病性腎病模型的腎細胞免受葡萄糖之損害藥理學實驗中，碧容健®被證實能夠保護糖尿病性腎病模型的腎細胞免受葡萄糖之損害。

Kim YJ, Kim YA, Yokozawa T  
Pycnogenol® modulates apoptosis by suppressing oxidative stress and inflammation in high glucose-treated renal tubular cells.  
Food Chem Toxicol 49: 2196-2201, 2011

**Ref. 336** 臨床研究：碧容健®可顯著減少絕經期女性的氧化應激反應。

Errichi S, Bottari A, Belcaro G, Cesarone MR, Hosoi M, Cornelli U, Dugall M, Ledda A, Feragalli B  
Supplementation with Pycnogenol® improves signs and symptoms of menopausal transition.  
Panminerva Med 53: 65-70, 2011

**Ref. 241** 臨床研究：碧容健®能夠顯著改善101位記憶缺失老年人的記憶力，保護他們的神經元細胞膜的多不飽和脂肪酸免受氧化損傷。

Ryan J, Croft K, Wesnes K, Stough C  
An examination of the effects of the antioxidant Pycnogenol® on cognitive performance, serum lipid profile, endocrinological and oxidative stress biomarkers in an elderly population.  
J Psychopharmacol 22: 553-562, 2008

**Ref. 227** 碧容健®和葉黃素協同作用可增強抗氧化作用，預防脂質過氧化。

Nakanishi-Ueda T, Kamegawa M, Ishigaki S, Tsukahara M, Yano S, Wada K, Yasuhara H  
Inhibitory Effect of Lutein and Pycnogenol® on Lipid Peroxidation in Porcine Retinal Homogenate.  
J Clin Biochem Nutr 38: 204-210, 2006

**Ref. 218** 碧容健®可減少面臨化學毒素挑戰的大鼠肝臟內的氧化應激反應。

Ahn T-H, Yang Y-S, Lee J-C, Moon C-J, Kim S-H, Jun W, Park S-C, Kim J-C  
Ameliorative Effects of Pycnogenol® on Carbon Tetrachloride-Induced Hepatic Oxidative Damage in Rats.  
Phytother Res 21: 1015- 1019, 2007

**Ref. 215** 碧容健®可保護脂質體免於脂質過氧化，與維生素C和維生素E起協同保護作用。

Sivonova M, Zitnanova I, Horakova L, Strosova M, Muchova J, Balgavy P, Dobrota D, Durackova Z  
The Combined Effect of Pycnogenol® with Ascorbic Acid and Trolox on the Oxidation of Lipids and Proteins.  
Gen Physiol Biophys 25: 379-396, 2006

**Ref. 205** 臨床研究：碧容健®可改善注意力缺陷多動障礙症（ADHD）兒童的抗氧化能力。

Dvorakova M, Sivonova M, Trebaticka J, Skodacek I, Waczulikova I, Muchova J, Durackova Z  
The effect of polyphenolic extract from pine bark, Pycnogenol® on the level of glutathione in children suffering from attention deficit hyperactivity disorder (ADHD).  
Redox Rep 11: 163- 172, 2006

**Ref. 204** 臨床研究：在一項雙盲、安慰劑對照研究中，碧容健®可保護注意力缺陷多動障礙症（ADHD）兒童的DNA不被氧化。

Chovanova Z, Muchova J, Sivonova M, Dvorakova M, Zitnanova I, Waczulikova I, Trebaticka J, Skodacek I, Durackova Z  
Effect of polyphenolic extract, Pycnogenol®, on the level of 8-oxoguanine in children suffering from attention deficit/ hyperactivity disorder.  
Free Radic Res 40: 1003- 1010, 2006

- Ref. 203** 碧容健®能夠防止氧化損傷蛋白質的積累，可降低發生阿爾茨海默病、帕金森病和亨廷頓病的風險。  
 Voss P, Horakova L, Jakstadt M, Kiekebusch D, Grune T  
 Ferritin oxidation and proteasomal degradation: Protection by antioxidants.  
 Free Radic Res 40: 673-683, 2006
- Ref. 187** 臨床研究：一項針對155名更年期婦女的雙盲、安慰劑對照研究顯示，碧容健®顯著提高了總體抗氧化能力臨床研究：  
 一項針對155名更年期婦女的雙盲、安慰劑對照研究顯示，碧容健®顯著提高了總體抗氧化能力。  
 Yang HM, Liao MF, Zhu SY, Liao MN, Rohdewald P  
 A randomised, double-blind, placebo-controlled trial on the effect of Pycnogenol® on the climacteric syndrome in peri-menopausal women.  
 Acta Obstet Gynecol Scand 86: 978-985, 2007
- Ref. 183** 碧容健®可保護腸黏膜免受放療引起的損害：大鼠的組織形態證據。  
 Ramos FM, Schönlau F, Novaes PD, Manzi FR, Bóscolo FN, Almeida SM  
 Pycnogenol® protects against ionizing radiation as shown in the intestinal mucosa of rats exposed to X-rays.  
 Phytother Res 20: 676-679, 2006
- Ref. 140** 碧容健®可保護腸黏膜免受放療引起的損害：大鼠的組織形態證據。  
 Sivonová M, Waczulíková I, Kilanczyk E, Hrnciarová M, Bryszewska M, Klajnert B, Duracková Z  
 The effect of Pycnogenol® on the erythrocyte membrane fluidity.  
 Gen Physiol Biophys 23: 39-51, 2004
- Ref. 105** 碧容健®可降低糖尿病大鼠的血糖、增強細胞內抗氧化防禦機制。  
 Maritim A, Dene BA, Sanders RA, Watkins JB  
 Effect of Pycnogenol® treatment on oxidative stress in streptozotocin-induced diabetic rats.  
 J Biochem Mol Toxicol 17: 193-199, 2003
- Ref. 099** 碧容健®與其他抗氧化劑的組合物作為膳食補充劑可延長小鼠的存活壽命。這些結果表明，碧容健®對神經退行性疾病有著積極的作用。  
 Veurink G, Liu D, Taddei K, Perry G, Smith MA, Robertson TA, Hone E, Groth DM, Atwood CS, Martins RN  
 Reduction of inclusion body pathology in ApoE-deficient mice fed a combination of antioxidants.  
 J Free Radic Biol Med 34: 1070-1077, 2003
- Ref. 098** 果蠅壽命延長證明碧容健®可延緩衰老過程。  
 Shuguang L, Xinwen Z, Sihong X, Gulati OP  
 Role of Pycnogenol® in aging by increasing the Drosophila's life-span.  
 Eur Bull Drug Res 11: 39-45, 2003
- Ref. 093** 臨床研究：在一項雙盲、安慰劑對照研究中，碧容健®可顯著增加血脂異常男性的血漿RAP值。  
 Durackova Z, Trebaticky B, Novotny V, Zitnanova I, Breza J  
 Lipid metabolism and erectile function improvement by Pycnogenol®, extract from the bark of Pinus pinaster in patients suffering from erectile dysfunction - a pilot study.  
 Nutr Res 23: 1189-1198, 2003
- Ref. 090** 臨床研究：人志願者口服碧容健®後，其血漿氧自由基吸收能力（ORAC）增強。  
 Devaraj S, Vega-López S, Kaul N, Schönlau F, Rohdewald P, Jialal I  
 Supplementation with a pine bark extract rich in polyphenols increases plasma antioxidant capacity and alters plasma lipoprotein profile.  
 Lipids 37: 931-934, 2002
- Ref. 086** 碧容健®結合乳清使用可增強血漿的抗氧化能力。  
 Janisch K, Hippeli S, Domisch K, Kern S, Elstner EF  
 Determination of the antioxidative potential of human plasma after supplementation with Pycnogenol® and whey.  
 Food Res Intern 35: 257-266, 2002
- Ref. 083** 阿爾茨海默患者大腦內的β-澱粉樣蛋白會誘發神經元細胞凋亡（細胞早死亡）。體外實驗顯示，碧容健®能夠抑制神經元細胞的死亡。  
 Peng QL, Buz'Zard AR, Lau BHS  
 Pycnogenol® protects neurons from amyloid β peptide-induced apoptosis.  
 Brain Res Mol Brain Res 104: 55-65, 2002
- Ref. 072** 碧容健®選擇性增強細胞內抗氧化酶的活性。  
 Bayeta E, Lau BHS  
 Pycnogenol® inhibits generation of inflammatory mediators in macrophages.  
 Nutr Res 20: 249-259, 2000

- Ref. 070** 碧容健®憑藉高含量的前花青素，其抗氧化功效高於其他也含有相對較高常規黃酮素的植物源抗氧化劑。這一事實可從結構和功能上加以解釋。
- Bors W, Michel C, Stettmaier K  
Electron paramagnetic resonance studies of radical species of proanthocyanidins and gallate esters.  
Arch Biochem Biophys 374: 347-355, 2000
- Ref. 069** 碧容健®會顯著減少 $\beta$ -澱粉樣蛋白引起的血管損傷。 $\beta$ -澱粉樣變性是阿爾茨海默病（AD）的神經病理學標誌之一，這表明碧容健®具有能夠降低阿爾茨海默病風險的作用。
- Liu F, Lau BHS, Peng Q, Shah V  
Pycnogenol® protects vascular endothelial cells from  $\beta$ -amyloid-induced injury.  
Biol Pharm Bull 23: 735-737, 2000
- Ref. 063** 碧容健®顯示出抗活性氧族的自由基清除活性。它能夠抑制促炎介質的產生，因而確認了碧容健®的抗炎性和免疫調製特性。
- Cho K-J, Yun C-H, Yoon D-Y, Cho Y-S, Rimbach G, Packer L, Chung A-S  
Effect of bioflavonoids extracted from the bark of Pinus maritima on proinflammatory cytokine interleukin- 1 production in lipopolysaccharide-stimulated raw 264.7.  
Toxicol Appl Pharmacol 168: 64-71, 2000
- Ref. 062** 碧容健®阻滯細胞蛋白氧化修飾的功效比其他抗氧化劑強。
- Kim J, Chehade J, Pinnas JL, Mooradian AD  
Effect of select antioxidants on malondialdehyde modification of proteins.  
Nutrition 16: 1079- 1081, 2000
- Ref. 052** 碧容健®可改善衰老過程常見癥狀中的學習記憶障礙和記憶缺失。
- Liu F, Zhang Y, Lau BHS  
Pycnogenol® improves learning impairment and memory deficit in senescence-accelerated mice.  
J Anti Aging Med 2: 349-355, 1999
- Ref. 051** 在一項比較研究中，碧容健®表現出比維生素C和E、硫辛酸、輔酶Q10和葡萄籽更高校的抗氧化活性。結合碧容健®可增強輔酶Q10等其他抗氧化劑的抗氧化作用。
- Chida M, Suzuki K, Nakanishi-Ueda T, Ueda T, Yasuhara H, Koide R, Armstrong D  
In vitro testing of antioxidants and biochemical endpoints in bovine retinal tissue.  
Ophthalmic Res 31: 407-415, 1999
- Ref. 033** 鑑於相應自由基的相對穩定性和維生素C和E等同系物誘導的再生性，碧容健®是一種高效的抗氧化劑。
- Guo Q, Zhao B, Packer L  
Electron spin resonance study of free radicals formed from a procyanidin-rich pine (Pinus maritime) bark extract, Pycnogenol®.  
J Free Radic Biol Med 27: 1308- 1312, 1999
- Ref. 030** 碧容健®可預防維生素C被氧化和被迴圈氧化的功效高於其他黃酮類藥物。
- Cossins E, Lee R, Packer L  
ESR studies of vitamin C regeneration, order of reactivity of natural source phytochemical preparations.  
Biochem Mol Biol Int 45: 583-597, 1998
- Ref. 029** 碧容健®可減慢因免疫細胞和血液細胞生成系統活動下降而引起的衰老，使它們恢復正常功能。
- Liu FJ, Zhang YX, Lau BHS  
Pycnogenol® enhances immune and haemopoietic functions in senescence-accelerated mice.  
Cell Mol Life Sci 54: 1168- 1172, 1998
- Ref. 026** 碧容健®能夠保護內皮細胞中的 $\alpha$ -生育酚。
- Virgili F, Kim D, Packer L  
Procyanidins extracted from pine bark protect  $\alpha$ -tocopherol in ECV 304 endothelial cells challenged by activated RAW 264.7 macrophages: role of nitric oxide and peroxynitrite.  
FEBS Lett 431: 315-318, 1998
- Ref. 025** 碧容健®可抑制氧化應激作用，將羥自由基誘發的DNA損害降至最低。
- Nelson AB, Lau BHS, Ide N, Rong Y  
Pycnogenol® inhibits macrophage oxidative burst, lipoprotein oxidation and hydroxyl radical-induced DNA damage.  
Drug Dev Ind Pharm 24: 139- 144, 1998
- Ref. 022** 碧容健除自由基清除特性外，碧容健®還能調製啟動炎性細胞中一氧化氮自由基的產生。
- Virgili F, Kobuchi H, Packer L  
Procyanidins extracted from Pinus maritima (Pycnogenol®): scavengers of free radical species and modulators of nitrogen monoxide metabolism in activated murine raw 264.7 macrophages.  
J Free Radic Biol Med 24: 1120- 1129, 1998

- Ref. 021** 研究顯示，在其他試驗的提取物中，碧容健®是最強的羟自由基和超氧自由基清除劑。碧容健®還具有熱穩定性。  
 Noda Y, Anzai K, Mori A, Kohno M, Shinmei M, Packer L  
 Hydroxyl and superoxide anion radical scavenging activities of natural source antioxidants using the computerized JES-FR30 ESR spectrometer system.  
*Biochem Mol Biol Int* 42: 35-44, 1997
- Ref. 020** 碧容健®可促進細胞內膜動脈中抗氧化酶的合成，使其量加倍。  
 Wei ZH, Peng QL, Lau BHS  
 Pycnogenol® enhances endothelial cell antioxidant defenses.  
*Redox Rep* 3: 219-224, 1997
- Ref. 014** 碧容健®可保護內皮細胞壁免受自由基之害。內皮細胞損傷是動脈粥樣硬化的主要原因之一。  
 Rong Y, Li L, Shah V, Lau BHS  
 Pycnogenol® protects vascular endothelial cells from t-butyl hydroperoxide induced oxidant injury.  
*Biotechnol Ther* 5: 117- 126, 1995
- Ref. 010** 碧容健®可清除體外的超氧自由基，抑制體內水腫。抗炎性與自由基清除活動密切相關。  
 Blazso G, Gabor M, Sibbel R, Rohdewald P  
 Anti-inflammatory and superoxide radical scavenging activities of a procyanidins containing extract from the bark of Pinus pinaster sol. and its fractions.  
*Pharm Pharmacol Lett* 3: 217-220, 1994
- Ref. 008** 碧容健®可呈劑量依賴性保護皮膚免受紫外輻射誘導的氧化應激損傷（脂質過氧化和細胞毒性）。  
 Guochang Z  
 Ultraviolet radiation-induced oxidative stress in cultured human skin fibroblasts and antioxidant protection.  
*Bio Res Rep Univ Jyväskylä* 33: 1-86, 1993
- Ref. 007** 碧容健®是極好的酶促羟自由基和單態氧自由基（最危險的兩種自由基）清除劑。  
 Elstner EF, Kleber E  
 Radical scavenger properties of leucocyanidine.  
 In: Das N.P., ed. Flavonoids in Biology & Medicine III: Current issues in Flavonoid Research: National University of Singapore Press: 227-235, 1990
- ## 19 內皮功能
- Ref. 553** 臨床研究：碧容健®能顯著改善與新冠疫情後有關的一些跡象和癥狀，改善心血管風險因素。  
 Belcaro G, Cornelli U, Cesarone MR, Scipione C, Scipione V, Hu S, Feragalli B, Corsi M, Cox D, Cotellese R, Hosoi M, Burki C  
 Preventive effects of Pycnogenol® on cardiovascular risk factors (including endothelial function) and microcirculation in subjects recovering from coronavirus disease 2019 (COVID- 19).  
*Minerva Med.* 113(2):300-8, 2022
- Ref. 499** 基於碧容健®改善內皮功能的能力，碧容健®可減少依他普侖（抗抑鬱藥）引起的性功能障礙和男女的心率升高。  
 Smetanka A, Stara V, Farsky, I, Tonhajzerova I, Ondrejka I  
 Pycnogenol® supplementation as an adjunct treatment for antidepressant-induced sexual dysfunction.  
*Physiol Int* 106(1): 59-69, 2019
- Ref. 449** 一項關於碧容健®通過改善內皮功能和抗氧化狀態來緩解更年期癥狀的療效的綜述。  
 Rohdewald P  
 Relief from Menopausal Symptoms by Non-hormonal Treatment with Pycnogenol® (French Maritime Pine Bark Extract).  
*J Genit Syst & Disor* 5:4, 2016
- Ref. 408** 臨床研究：碧容健®可改善內皮功能。這項公開註冊研究的結果表明，對於邊緣型高血壓、高血糖和高脂血症受試者來說，很可能有重要的預防性作用。  
 Hu S, Belcaro G, Cornelli U, Luzzi R, Cesarone MR, Dugall M, Feragalli B, Errichi B, Ippolito E, Grossi MG, Hosoi M, Gizzi G, Trignani M  
 Effects of Pycnogenol® on endothelial dysfunction in borderline hypertensive, hyperlipidemic, and hyperglycemic individuals: the borderline study.  
*Int Angiol* 34(1): 43-52, 2015

**Ref. 372** 人服用碧容健®后的代謝物會被紅細胞、白細胞、內皮細胞和神經細胞經GLUT1轉運體內化。這種組織-特異性積累代表了碧容健®主要活動模式的常見共同特性，它與炎症控制、內皮功能和認知效益相關。

Kurlbaum M, Mülek M, Högger P

Facilitated Uptake of a Bioactive Metabolite of Maritime Pine Bark Extract (Pycnogenol®) into Human Erythrocytes.

PLOS ONE 8(4): 1- 10, 2013

**Ref. 371** 碧容健®作為天然混合物，與提取物成分相比，能更好地調控內皮功能障礙。

Jankyova S, Hlavackova L, Kralova E, Slazneva J, Drobna V, Zuzik P, Drafi F, Mucaji P, Racanska E

The Evaluation of Efficacy of Pycnogenol® Fractions on Endothelial Dysfunction.

Acta Fac Pharm Univ Comen LX(1): 7- 14, 2013

**Ref. 353** 人攝入碧容健®后形成的代謝物可積累於免疫細胞（白細胞）內，調製炎性過程。

Uhlenhut K, Högger P

Facilitated cellular uptake and suppression of inducible nitric oxide synthase by a metabolite of maritime pine bark extract (Pycnogenol®).

Free Radic Biol Med, 53: 305-313, 2012

**Ref. 349** 臨床研究：心臟藥物之外再服用碧容健®能顯著增強心臟病患者的血管內皮功能。

Enseleit F, Sudano I, Périat D, Winnik S, Wolfrum M, Flammer AJ, Fröhlich GM, Kaiser P, Hirt A, Haile SR, Krasniqi N, Matter CM,

Uhlenhut K, Högger P, Neidhart M, Lüscher TF, Ruschitzka F, Noll G

Effects of Pycnogenol® on endothelial function in patients with stable coronary artery disease: a double-blind, randomized, placebo-controlled, cross-over study.

Eur Heart J 33(13): 1589-97, 2012

**Ref. 237** 臨床研究：糖尿病和高血壓藥物之外再服用碧容健®可進一步顯著改善患者的血糖和心血管風險因數，允許大多數患者減少抗高血壓藥物的服用。

Zibadi S, Rohdewald P, Park D, Watson RR

Reduction of cardiovascular risk factors in subjects with Type 2 Diabetes by Pycnogenol® supplementation.

Nutr Res 28: 315-320, 2008

**Ref. 230** 臨床研究：碧容健®摄入可使年轻健康男性的血管舒张增加42%，从而保证为肌肉活动提供充足的血液和氧供应。

Nishioka K, Hidaka T, Nakamura S, Umemura T, Jitsuiki D, Soga J, Goto C, Chayama K, Yoshizumi M, Higashi Y

Pycnogenol®, French Maritime Pine Bark Extract, augments endothelium-dependent vasodilation in humans.

Hypertens Res 30: 775-780, 2007

**Ref. 117** 臨床研究：作為高血壓藥物和硝苯地平的輔助藥物，碧容健®可改善血管內皮功能，允許減少藥物劑量。

Liu X, Wei J, Tan F, Zhou S, Würthein G, Rohdewald P

Pycnogenol® French maritime pine bark extract, improves endothelial function of hypertensive patients.

Life Sci 74: 855-862, 2004

**Ref. 109** 臨床研究：在一項劑量探索研究中，碧容健®能夠降低II型糖尿病患者的血糖水準，改善患者的內皮功能。

Liu X, Zhou H-J, Rohdewald P

French maritime pine bark extract Pycnogenol® dose-dependently lowers glucose in type II diabetic patients.

Diabetes Care 27: 839, 2004

**Ref. 069** 碧容健®會顯著減少β-澱粉樣蛋白引起的血管損傷。β-澱粉樣變性是阿爾茨海默病（AD）的神經病理學標誌之一，這表明碧容健®具有能夠降低阿爾茨海默病風險的作用。

Liu F, Lau BHS, Peng Q, Shah V

Pycnogenol® protects vascular endothelial cells from β-amylid-induced injury.

Biol Pharm Bull 23: 735-737, 2000

**Ref. 068** 碧容健®可抑制組織白細胞募集相關的數個機制，進而導致抗炎症活性產生。

Peng Q, Wei Z, Lau BHS

Pycnogenol® inhibits tumor necrosis factor-α-induced nuclear factor kappa B activation and adhesion molecule expression in human vascular endothelial cells.

Cell Mol Life Sci 57: 834-841, 2000

**Ref. 027** 碧容健®阻礙血管收縮。碧容健®通過一氧化氮促進血管舒張活性。

Fitzpatrick DF, Bing B, Rohdewald P

Endothelium-dependent vascular effects of Pycnogenol®.

J Cardiovasc Pharmacol 32: 509-515, 1998

**Ref. 026** 碧容健®能夠保護內皮細胞中的α-生育酚。

Virgili F, Kim D, Packer L

Procyanidins extracted from pine bark protect α-tocopherol in ECV 304 endothelial cells challenged by activated RAW 264.7 macrophages: role of nitric oxide and peroxynitrite.

FEBS Lett 431: 315-318, 1998

**Ref. 020** 碧容健®可促進細胞內膜動脈中抗氧化酶的合成，使其量加倍。

Wei ZH, Peng QL, Lau BHS

Pycnogenol® enhances endothelial cell antioxidant defenses.

Redox Rep 3: 219-224, 1997

**Ref. 014** 碧容健®可保護內皮細胞壁免受自由基之害。內皮細胞損傷是動脈粥樣硬化的主要原因之一。

Rong Y, Li L, Shah V, Lau BHS

Pycnogenol® protects vascular endothelial cells from t-butyl hydroperoxide induced oxidant injury.

Biotechnol Ther 5: 117- 126, 1995

## 20 血小板功能

**Ref. 553** 臨床研究：碧容健®能顯著改善與新冠疫情後有關的一些跡象和癥狀，改善心血管風險因素。

Belcaro G, Cornelli U, Cesarone MR, Scipione C, Scipione V, Hu S, Feragalli B, Corsi M, Cox D, Cotellese R, Hosoi M, Burki C  
Preventive effects of Pycnogenol® on cardiovascular risk factors (including endothelial function) and microcirculation in subjects recovering from coronavirus disease 2019 (COVID- 19).

Minerva Med. 113(2):300-8, 2022

**Ref. 528** 臨床研究：碧容健®預防復發性視網膜靜脈血栓的效果優於阿司匹林、噻氯匹定和舒洛地特，且無副作用。

Belcaro G, Dugall M, Bradford HD, Cesarone MR, Feragalli B, Gizzi C, Cotellese R, Hu S, Rodriguez P, Hosoi M.  
Recurrent retinal vein thrombosis: prevention with Aspirin, Pycnogenol®, ticlopidine, or sulodexide.

Minerva Cardioangiolog. 2019 Apr;67(2):109- 114, 2019

**Ref. 507** 臨床研究：碧容健®通過降低血栓素（一種促進血小板聚集的物質）的血液水準，降低克羅恩病患兒血栓栓塞發作的風險。

Kolacek, M., Paduchova, Z., Dvorakova, M., Zitnanova, I., Cierna, I., Durackova, Z., Muchova, J.  
Effect of natural polyphenols on thromboxane levels in children with Crohn's disease.

Bratisl Lek Listy, 120(12): p. 924-928, 2019

**Ref. 499** 臨床研究：基於碧容健®改善內皮功能的能力，碧容健®可減少依他普侖（抗抑鬱藥）引起的性功能障礙和男女的心率升高。

Smetanka A, Stara V, Farsky, I, Tonhajzerova I, Ondrejka I  
Pycnogenol® supplementation as an adjunct treatment for antidepressant-induced sexual dysfunction.

Physiol Int 106(1): 59-69, 2019

**Ref. 476** 在預防血栓後綜合征和新發靜脈血栓症方面，碧容健®比阿司匹林、舒洛地特和噻氯匹定更加有效。

Belcaro G, Dugall M, Hu S, Feragalli B, Cotellese R, Ledda A, Corsi M, Ricci A, Ippolito E, Errichi BM, Cornelli U, Cesarone MR, Hosoi M  
Prevention of recurrent venous thrombosis and post-thrombotic syndrome.

Minerva Cardioangiolog 66(3): 238-245, 2018

**Ref. 469** 臨床研究：碧容健®可減輕水腫，對某些血栓事件可能也有控制作用。

Belcaro G, Cornelli U, Dugall M, Hosoi M, Cotellese R, Feragalli B

Long-haul flights, edema, and thrombotic events: prevention with stockings and Pycnogenol® supplementation (LONFLIT Registry Study).

Minerva Cardioangiolog 66: 152- 159, 2018

**Ref. 434** 紹述：與碧容健®生物活性和碧容健®用於治療浮腫、潰瘍、血栓形成、CVI 和痔瘡的臨床作用有關的研究總結。

Rohdewald P

Gerbstoffhaltiger Extrakt zur oralen und topischen Behandlung bei CVI und Hämorrhoidalleiden.

Phlebologie 44: 334-338, 2015

**Ref. 417** 臨床研究：碧容健®被證明有助於預防視網膜靜脈血栓形成。

Rodriguez P, Belcaro G, Dugall M, Hu S, Luzzi R, Ledda A, Ippolito E, Corsi M, Ricci A, Feragalli B, Cornelli U, Gizzi C, Hosoi M  
Recurrence of retinal vein thrombosis with Pycnogenol® or Aspirin®supplementation: a registry study.

Panminerva Med 57: 121- 125, 2015

**Ref. 370** 關於靜脈功能不全和血栓形成管理中碧容健®相關作用的臨床前及臨床研究的最新簡明綜合評論。

Gulati OP  
Pycnogenol® in Chronic Venous Insufficiency and Related Venous Disorders.  
Phytother Res. 2014 Mar;28(3):348-62, 2014

**Ref. 337** 臨床研究：12個月調查期內，碧容健®能預防遭受深靜脈血栓患者發生水腫及血栓復發。

Errichi BM, Belcaro G, Hosoi M, Cesarone MR, Dugall M, Feragalli B, Bavera P, Hosoi M, Zulli C, Corsi M, Ledda A, Luzzi R, Ricci A  
Prevention of post thrombotic syndrome with Pycnogenol® in a twelve-month study.  
Panminerva Med 53: 21-27, 2011

**Ref. 233** 相比阿司匹林，碧容健®能更有效地減少I型糖尿病藥理學模型的血小板聚集，這說明它具有預防糖尿病患者形成血栓的作用。

Nocun M, Ulicna O, Muchova J, Durackova Z, Watala C  
French maritime pine bark extract (Pycnogenol®) reduces thromboxane generation in blood from diabetic male rats.  
Biomed Pharmacother 62: 168- 172, 2007

**Ref. 134** 臨床研究：在一項涉及200位參與者的雙盲、安慰劑對照試驗中，碧容健®可用於預防長途航班乘客的血栓形成。

Belcaro G, Cesarone MR, Rohdewald P, Ricci A, Ippolito E, Dugall M, Griffin M, Ruffini I, Acerbi G, Vinciguerra MG, Bavera P, Di Renzo A, Errichi BM, Cerritelli F  
Prevention of Venous Thrombosis and Thrombophlebitis in Long-Haul Flights with Pycnogenol®.  
Clin Appl Thromb Hemost 10: 373-377, 2004

**Ref. 080** 臨床研究：碧容健®可降低未服用藥物的高血壓患者的血壓。

Hosseini S, Lee J, Sepulveda RT, Rohdewald P, Watson RR  
A randomized, double-blind, placebo-controlled, prospective, 16 week crossover study to determine the role of Pycnogenol® in modifying blood pressure in mildly hypertensive patients.  
Nutr Res 21: 1251- 1260, 2001

**Ref. 053** 臨床研究：碧容健®可抑制吸煙誘導的血栓烷B水準的升高，從而解釋了吸煙者服用碧容健®後血小板聚集減少的原因。

Araghi-Niknam M, Hosseini S, Larson D, Rohdewald P, Watson RR  
Pine bark extract reduces platelet aggregation.  
Int Med 2: 73-77, 1999

**Ref. 043** 臨床研究：碧容健®可抑制心臟病患者的血小板聚集和粘附，改善血液微迴圈。

Wang S, Tan D, Zhao Y, Gao G, Gao X, Hu L  
The effect of Pycnogenol® on the microcirculation, platelet function and ischemic myocardium in patients with coronary artery diseases.  
Eur Bull Drug Res 7: 19-25, 1999

**Ref. 042** 碧容健®有助於通過血管舒張、抗血小板聚集、自由基清除和毛細血管封閉作用維持健康的血液迴圈。文中還討論了內皮一氧化氮（NO）的作用。

Rohdewald P  
Reducing the risk for stroke and heart infarction with Pycnogenol®.  
Eur Bull Drug Res 7: 14- 18, 1999

**Ref. 039** 緒述：評論碧容健®心血管藥理學特性的重點在於血小板聚集的預防。

Watson R  
Reduction of cardiovascular disease risk factors by French Maritime Pine Bark Extract.  
Cardiovasc Rev Rep XX: 326-329, 1999

**Ref. 036** 臨床研究：碧容健®以呈劑量依賴性方式抑制人體的血小板聚集。該作用會持續6天以上，與阿司匹林不同的是，它不會增加出血時間。

Pütter M, Grottemeyer KHM, Würthwein G, Araghi-Niknam M, Watson RR, Hosseini S, Rohdewald P  
Inhibition of smoking-induced platelet aggregation by aspirin and Pycnogenol®.  
Thromb Res 95: 155- 161, 1999

## 21 增強細胞外基質

- Ref. 551** 碧容健®可以下調酪氨酸酶，減少與色素有關的介質，減少黑色素的產生，從而在體外抑制皮膚色素沉著。  
 Ayres EL, Silva JDS, Eberlin S, Facchini G, Vasconcellos C, Costa A.  
 In-vitro effect of pine bark extract on melanin synthesis, tyrosinase activity, production of endothelin- 1 and PPAR in cultured melanocytes exposed to Ultraviolet, Infrared, and Visible light radiation.  
 J Cosmet Dermatol. 2021
- Ref. 464** 臨床研究：已對碧容健®通過軟骨細胞、滑液和血清而反映出來的臨床療效進行了系統研究。總體結果提示海岸鬆樹皮提取物具有軟骨保護潛能。這些結果為理解現有文獻報告的碧容健®對骨關節炎患者通過癥狀評分而體現出來的臨床療效提供了合理基礎。  
 Jessberger S, Högger P, Genest F, Salter DM, Seefried L  
 Cellular pharmacodynamic effects of Pycnogenol® in patients with severe osteoarthritis: a randomized controlled pilot study.  
 BMC Complementary and Alternative Medicine 17: 537 DOI 10.1186/s12906-017-2044-1, 2017
- Ref. 430** 臨床研究：本文評論了早期的碧容健®臨床研究，確認了碧容健®增強皮膚彈性和增加水分的作用，強調了口服碧容健®使皮膚更加白皙的新成果，以及改善皮膚屏障功能的作用。  
 Grether-Beck S, Marini A, Jaenicke T, Krutmann J  
 French Maritime Pine Bark Extract (Pycnogenol®) Effects on Human Skin: Clinical and Molecular Evidence.  
 Skin Pharmacol Physiol 29: 13- 17, 2016
- Ref. 348** 臨床研究：碧容健®可增加女性皮膚彈性和水合性，這與皮膚中合成新膠原蛋白和透明質酸的效果顯著一致。  
 Marini A, Grether-Beck S, Jaenicke T, Weber M, Burki C, Formann P, Brenden H, Schönlau F, Krutmann J  
 Pycnogenol® Effects on Skin Elasticity and Hydration Coincide with Increased Gene Expressions of Collagen Type I and Hyaluronic Acid Synthase in Women.  
 Skin Pharmacol Physiol 25: 86-92, 2012
- Ref. 243** 碧容健®抑制皮膚細胞中色素形成的功效是曲酸（皮膚美白產品中常用化合物之一）的四倍之多。  
 Kim YJ, Kang KS, Yokozawa T  
 The anti-melanogenic effect of Pycnogenol® by its anti-oxidative actions.  
 Food and Chemical Toxicol 46: 2466-2471, 2008
- Ref. 185** 臨床研究：碧容健®可抑制發炎人皮膚中分解膠原蛋白與彈性蛋白相關的酶的釋放。  
 Grimm T, Chovanova Z, Muchova J, Sumegova K, Liptakova A, Durackova Z, Högger P  
 Inhibition of NF-kappaB activation and MMP-9 secretion by plasma of human volunteers after ingestion of maritime pine bark extract (Pycnogenol®).  
 J Inflamm 3: 1-6, 2006
- Ref. 107** 臨床研究：人口服碧容健®後，體內普遍存在的成分及其代謝物會抑制膠原蛋白和彈性蛋白破壞酶。  
 Grimm T, Schäfer A, Högger P  
 Antioxidant activity and inhibition of matrix metalloproteinases by metabolites of maritime pine bark extract (Pycnogenol®).  
 J Free Radic Biol Med 36: 811-822, 2004

### III. 分析、生物可用性和代謝

**Ref. 540** 總述：全面總結了關於碧容健®的最重要的研究，回顧了碧容健®的特性和益處。

Olliff H  
Scientific and clinical Monograph for Pycnogenol®.  
American Botanical Council - ABC. 2019:1-46, 2019

**Ref. 473** 碧容健®可有效減輕體重和體脂沉積。

Cong H, Zhong W, Wang Y, Ikuyama S, Fan F, Gu J  
Pycnogenol® induces browning of white adipose tissue through the PKA signaling pathway in apolipoprotein e-deficient mice.  
Journal of Diabetes Research Volume 2018, Article ID 9713259  
<https://doi.org/10.1155/2018/9713259>, 2018

**Ref. 465** 碧容健®可保護肝臟。它對與肝脂生成、脂肪酸攝入和脂質儲存有關的基因具有明顯的抑製作用。碧容健®可能為非酒精性脂肪肝提供了一種新的預防方法。

Wang D, Cong H, Cao Y, Ikuyama S, Fan B, Gu J  
Pycnogenol® protects against diet-induced hepatic steatosis in Apolipoprotein-E deficient mice.  
Am J Physiol Endocrinol Metabol, doi: 10/1152/ajpendo.000009.2017, 2018

**Ref. 440** 臨床研究：補充碧容健®被證明造成了骨關節炎患者膝蓋滑液中成分和代謝物的積累，是癥狀改善的依據。

Mülek M, Seefried L, Genest F, Högger P  
Distribution of constituents and metabolites of maritime pine bark extract (Pycnogenol®) into serum, blood cells and synovial fluid of patients with severe osteoarthritis: a randomized controlled trial.  
Nutrients 9, 443; doi: 10.3390/nu9050443, 2017

**Ref. 416** 解析碧容健®代謝物在人體中的代謝命運。

Mülek M, Fekete A, Wiest J, Holzgrabe U, Mueller MJ, Högger P  
Profiling a gut microbiota-generated catechin metabolite's fate in human blood cells using a metabolomic approach.  
J Pharm Biomed Anal 114: 71-81, 2015

**Ref. 403** 攝入碧容健®後，用於檢測和定量人血細胞中植物源化合物的不同樣品製備方法的比較報告。

Mülek M, Högger P  
Highly sensitive analysis of polyphenols and their metabolites in human blood cells using dispersive SPE extraction and LC-MS/MS.  
Anal Bioanal Chem DOI 10. 1007/s00216-014-8451-y, 2015

**Ref. 379** 碧容健®是一種非常有前景的預防脂肪肝或動脈粥樣化的天然化合物。

Ikuyama S, Fan B, Gu J-Q, Mukae K, Watanabe H  
Molecular mechanism of intracellular lipid accumulation: Suppressive effect of Pycnogenol® in liver cells.  
FFHD 3(9): 252-264, 2013

**Ref. 372** 人服用碧容健®后的代謝物會被紅細胞、白細胞、內皮細胞和神經細胞經GLUT1轉運體內化。這種組織-特異性積累代表了碧容健®主要活動模式的常見共同特性，它與炎症控制、內皮功能和認知效益相關。

Kurlbaum M, Mülek M, Högger P  
Facilitated Uptake of a Bioactive Metabolite of Maritime Pine Bark Extract (Pycnogenol®) into Human Erythrocytes.  
PLOS ONE 8(4): 1- 10, 2013

**Ref. 371** 碧容健®作為天然混合物，與提取物成分相比，能更好地調控內皮功能障礙。

Jankyova S, Hlavackova L, Kralova E, Slazneva J, Drobna V, Zuzik P, Drafi F, Mucaji P, Racanska E  
The Evaluation of Efficacy of Pycnogenol® Fractions on Endothelial Dysfunction.  
Acta Fac Pharm Univ Comen LX(1): 7- 14, 2013

**Ref. 353** 人攝入碧容健®后形成的代謝物可積累於免疫細胞（白細胞）內，調製炎性過程。

Uhlenhut K, Högger P  
Facilitated cellular uptake and suppression of inducible nitric oxide synthase by a metabolite of maritime pine bark extract (Pycnogenol®).  
Free Radic Biol Med, 53: 305-313, 2012

碧容健®各成分可與白蛋白結合在一起，在血液中運輸，而其代謝物與血蛋白間沒有任何聯繫。

Kurlbaum M, Högger P  
Plasma protein binding of polyphenols from maritime pine bark extract (USP).  
J Pharm Biomed Anal 54: 127- 132, 2011

**Ref. 239** 碧容健®可抵消酒精的神經毒性，即可緩解醉酒後的不適癥狀。

Siler-Marsiglio KI, Paiva M, Madorsky I, Serrano Y, Neeley A, Heaton MB

Protective mechanisms of Pycnogenol® in ethanol-insulted cerebellar granule cells.

J Neurobiol 61: 267-276, 2004

**Ref. 197** 臨床研究：本研究介紹了人口服碧容健®后各成分及代謝物的表現。

Grimm T, Skrabala R, Chovanova Z, Muchova J, Sumegova K, Liptakova A, Durackova Z, Högger P

Single and multiple dose pharmacokinetics of maritime pine bark extract (Pycnogenol®) after oral administration to healthy volunteers.

BMC Clin Pharmacol 6: 4, 2006

**Ref. 171** 美國藥典（USP）專著。

南歐海松提取物 - USP34. 1196- 1197;

The United States Pharmacopeia, United States Pharmacopeial Convention, Inc. official from May 1, 2011

**Ref. 170** 美國藥典（USP）專著。

南歐海松 - USP30.964-965;

The United States Pharmacopeia, United States Pharmacopeial Convention, Inc. official from May 1, 2007

**Ref. 137** 碧容健®可通過人體皮膚吸收的證據。

Sarikaki V, Rallis M, Tanojo H, Panteri I, Dotsikas Y, Loukas YL, Papaioannou G, Demetzos C, Weber S, Moini H, Maibach HI, Packer L

In vitro Percutaneous Absorption of Pine Bark Extract (Pycnogenol®) in Human Skin.

J Toxicol Cutaneous Ocul Toxicol 23: 149- 158, 2004

**Ref. 060** 臨床研究：通過研究阿魏酸（碧容健®的成分之一）的排泄模式，證實了碧容健®在健康人受試者體內的生物動力學特性（吸收、代謝及排泄）。

Virgili F, Pagana G, Bourne L, Rimbach G, Natella F, Rice-Evance C, Packer L

Ferulic acid excretion as a marker of consumption of a French maritime pine (*Pinus maritima*) bark extract.

J Free Radic Biol Med 28: 1249- 1256, 2000

**Ref. 058** 臨床研究：碧容健®各成分及其代謝物在人體內發揮有益作用的生物利用度在24小時以上。

Grosse-Düweler K, Rohdewald P

Urinary metabolites of French maritime pine bark extract in humans.

Pharmazie 55: 364-368, 2000

**Ref. 040** 研究基於碧容健®的體外療效證實了其生物利用性：預防血小板聚集和毛細血管封閉作用。以硫酸鹽形式存在於尿液中的戊內酯或尿液中的葡萄糖苷酸代表了碧容健®的活性成分。

Rohdewald P

Bioavailability and metabolism of Pycnogenol®.

Eur Bull Drug Res 7: 5-7, 1999

## IV. 評論文獻

- Ref. 580** 綜述：碧容健®對收縮壓和舒張壓有明顯的有益作用。  
 Pourmasoumi M, Hadi A, Mohammadi H, Rouhani MH  
 Effect of Pycnogenol® supplementation on blood pressure: A systematic review and meta-analysis of clinical trials.  
*Phytotherapy Research.* 2019;1-10, 2019
- Ref. 573** 這篇評論探討了碧容健®在機制和生理方面的各種有益特性。  
 Nattagh-Eshivani E, Ghefleti A, Barghchi H, Rahbarinejad P, Hachem K, Shalaby MN, Abdelbasset WK, Ranjbar G, Olegovich Bokov D, Rahimi P, Gholizadeh Navashenaq J, Pahlavani N.  
 The role of Pycnogenol® in the control of inflammation and oxidative stress in chronic diseases: Molecular aspects.  
*Phytother Res.* 2022 May 18. doi: 10.1002/ptr.7454., 2022
- Ref. 557** 碧容健®對認知功能的有益影響述評。  
 Schönlau F  
 Chapter 23 - The multifactorial contributions of Pycnogenol® for cognitive function improvement.  
*Nutraceuticals in Brain Health and Beyond*, D. Ghosh Ed., pp. 335-341: Academic Press: 2021, 2021
- Ref. 543** 關於碧容健®對新型冠狀病毒感染后的健康損害可能產生的有益影響回顧  
 Weichmann F and Rohdewald P.  
 Projected supportive effects of Pycnogenol® in patients suffering from multi-dimensional health impairments after a SARS-CoV2 infection.  
*Int J Antimicrob Agents* 56(6): 106191, 2020
- Ref. 540** 綜述：全面總結了關於碧容健®的最重要的研究，回顧了碧容健®的特性和益處。  
 Oliff H  
 Scientific and clinical Monograph for Pycnogenol.  
 American Botanical Council - ABC. 2019;1-46, 2019
- Ref. 503** 這篇綜述總結了碧容健®通過血管、抗炎、神經保護和抗氧化過程改善神經認知功能的生物調節作用。  
 Simpson T, Kure C, Stough C  
 Assessing the efficacy and mechanisms of Pycnogenol® on cognitive aging from in vitro animal and human studies.  
*Frontiers in Pharmacology*, 2019
- Ref. 490** 關於碧容健®對衰老的相關癥狀的各種有益影響的綜述。  
 Rohdewald P  
 Pleiotropic Effects of French Maritime Pine Bark Extract to Promote Health Aging Rejuvenation Res. 2019 Jun;22(3):210-217, 2019.
- Ref. 472** 綜述：碧容健®可提高抗氧化水準，減輕氧化損傷，改善神經化學狀態，因此認為其對兒童多動症有治療效果。  
 Verlaat AAJ, Maasakkers CM, Hermans N, Savelkoul HFJ  
 Rationale for Dietary Antioxidant Treatment of ADHD.  
*Nutrients* 10, 405; doi: 10.3390/nu10040405, 2018
- Ref. 463** 綜述：碧容健®可緩解靜脈性水腫。通過外用和口服途徑聯合給藥，碧容健®可加快靜脈性潰瘍、糖尿病性潰瘍和痔瘡的癒合。  
 Rohdewald P  
 Pycnogenol® bei Erkrankungen des venösen Systems – eine systematische Übersicht.  
*Schweiz Z Ganzheitsmed* 29: 372-375, 2017
- Ref. 462** 綜述：碧容健®可通過非激素途徑改善婦女的健康情況。  
 Rohdewald PJ  
 Pycnogenol®, a Plant Extract for women's health.  
*Int J women's health Care (IJWHC)* 2(1): 1-5, 2017
- Ref. 461** 綜述：碧容健®具有抗炎和軟骨保護作用，其中含有可快速吸收的酚類化合物和緩慢代謝的原花青素，兩種特性相結合，其可像緩釋配方藥物那樣發揮作用。  
 Rohdewald PJ  
 Review on sustained relief of osteoarthritis symptoms with a proprietary extract from pine bark extract, Pycnogenol®.  
*J Med Food* 21(1): 1-4, 2018
- Ref. 449** 一項關於碧容健®通過改善內皮功能和抗氧化狀態來緩解更年期癥狀的療效的綜述。  
 Rohdewald P  
 Relief from Menopausal Symptoms by Non-hormonal Treatment with Pycnogenol® (French Maritime Pine Bark Extract).  
*J Genit Syst & Disor* 5:4, 2016

- Ref. 448** 一項提出將碧容健®作為常規治療肝炎相關性糖尿病的輔助治療的綜述。  
 Ezzikouri S, Jadid FZ, Hamdi S, Wakrim L, Tsukiyama-Kohara K, Benjelloun S  
*Supplementing Conventional Treatment with Pycnogenol® May Improve Hepatitis C Virus-Associated Type 2 Diabetes: A Mini Review.*  
*J Clin Translational Hepatol* 4: 228-233, 2016
- Ref. 444** 碧容健®用於治療過敏性鼻炎（hayfever）的優點的綜述。  
 Ross SM  
*Allergic Rhinitis. A proprietary extract of Pinus pinaster Aiton (Pycnogenol®) is found to improve the symptoms associated with allergic rhinitis.*  
*Hollist Nurs Pract* 30: 301-304, 2016
- Ref. 430** 本文評論了早期的碧容健®臨床研究，確認了碧容健®增強皮膚彈性和增加水分的作用，強調了口服碧容健®使皮膚更加白皙的新成果，以及改善皮膚屏障功能的作用。  
 Grether-Beck S, Marini A, Jaenicke T, Krutmann J  
*French Maritime Pine Bark Extract (Pycnogenol®) Effects on Human Skin: Clinical and Molecular Evidence.*  
*Skin Pharmacol Physiol* 29: 13- 17, 2016
- Ref. 422** 緒述：在2010-2015期間發表的碧容健®臨床研究的總結。  
 Rohdewald P  
*Update on the clinical pharmacology of Pycnogenol®.*  
*Medical Research Archives July 2015 Issue 3: 1- 11, 2015*
- Ref. 415** 本綜述論文包含目前關於碧容健®用於改善代謝綜合征患者和糖尿病患者健康方面的知識。  
 Gulati O  
*Pycnogenol® in Metabolic Syndrome and Related Disorders.*  
*Phytother Res* 29: 949-968, 2015
- Ref. 346** 關於碧容健®廣泛適用於個人保健、預防及治療的綜述。  
 Strong J  
*French maritime pine bark extract (Pycnogenol®) and the use of health supplements in the age of personalized medicine.*  
*Panminerva Med* 53: 1-2, 2011
- Ref. 326** 關於碧容健®成分和藥理學及已發表醫學研究的綜合評論。  
 Maimoona A, Naeem I, Saddiqe Z, Jameel K  
*A review on biological, nutraceutical and clinical aspects of French maritime pine bark extract.*  
*J Ethnopharmacol* 133: 261-277, 2011
- Ref. 269** 緒述：基於已發表的碧容健®科學及臨床研究論文的臨床綜述。  
 Oliff H  
*Scientific and clinical monograph on Pycnogenol®.*  
*The American Botanical Council* 2009
- Ref. 266** 關於碧容健®用於治療靜脈功能不全研究的綜合評論。  
 Gulati OP  
*Pycnogenol®: a nutraceutical for venous health.*  
*Biomedical Reviews* 19: 33-43, 2008
- Ref. 261** 這篇綜述性文章涵蓋了碧容健®對於糖尿病患者的廣泛貢獻，例如降低血糖，並有助於大多數糖尿病併發症的治療。  
 Rohdewald P  
*Regulation of diabetes by Pycnogenol®.*  
*Botanical medicine in clinical practice.* (ed.) Watson, R.R., Preedy, V.R.; Wallingford, England, CABI Publishing, Ch. 62: 587-594, 2008
- Ref. 259** 關於碧容健®抗炎症活性及其控制不同炎症性疾病作用的綜合評論。  
 Farid R  
*Pycnogenol® in the treatment of inflammatory diseases: osteoarthritis, asthma and heart disease.*  
*Botanical medicine in clinical practice.* (ed.) Watson RR, Preedy VR; Wallingford, England, CABI Publishing, chapter 68: 633-640, 2008
- Ref. 258** 關於碧容健®用於治療水腫（包括用於長途旅行期間腿部腫脹治療的結果）相關眾多研究的評論。  
 Belcaro G, Cesarone MR, Cornelli U, Rohdewald P, Ledda A, Di Renzo A, Stuard, S, Cacchio M, Vinciguerra G, Gizzi G, Pellegrini L, Dugall M, Ricci A, Ruffini I, Fano F  
*Treatment of chronic venous insufficiency and prevention of economy class syndrome.*  
*Botanical medicine in clinical practice.* (ed.) Watson, R.R., Preedy, V.R.; Wallingford, England, CABI Publishing, Ch. 64: 603-609, 2008

- Ref. 257** 關於碧容健®多方面有益於心血管健康的評論。  
 Watson RR, Argüelles MC  
 Pycnogenol® and cardiovascular health.  
 Botanical medicine in clinical practice. (ed.) Watson, R.R., Preedy, V.R.; Wallingford, England, CABI Publishing, Ch. 56: 538-544, 2008
- Ref. 228** 綜述：心肌炎病理介紹及碧容健®有助於心臟恢復機制的討論。  
 Matsumori A  
 Treatment Options in Myocarditis.  
 Herz 32: 452-456, 2007
- Ref. 210** 碧容健®的臨床藥理學評論。  
 Rohdewald P  
 Clinical Pharmacology of Pycnogenol®.  
 Pharma Bio World 5: 79-81, 2006
- Ref. 180** 綜述：碧容健®可有效改善血液微迴圈、痛經、肩部僵硬及妊娠相關疼痛。  
 Kohama T  
 Nutritional supplements in clinical practice.  
 Progr Med 24: 1503- 1510, 2004
- Ref. 169** 綜述：關於碧容健®安全性及療效作用方面的專著論文。  
 Blumenthal M  
 Pycnogenol® (French Maritime Pine Bark Extract) Pinus Pinaster Aiton subsp. atlantica.  
 The American Botanical Council guide to Herbs, 369-373, 2003
- Ref. 168** 綜述：碧容健®可用作心血管健康及糖尿病的營養保健品。  
 Gulati OP  
 The Nutraceutical Pycnogenol®: Its role in cardiovascular health and blood glucose control.  
 Biomed Rev 16: 49-57, 2005
- Ref. 160** 綜述：涉及碧容健®藥理活性及臨床功效的專著論文。  
 Rohdewald P  
 Pycnogenol®, French Maritime Pine Bark Extract.  
 Encyclopedia of Dietary Supplements; Ed. Marcel Dekker, digital publisher, 545-553, 2005
- Ref. 114** 關於碧容健®心血管健康益處的評論。  
 Watson RR  
 Pycnogenol® and cardiovascular health.  
 Evid Based Integr Med 1: 27-32, 2003
- Ref. 094** 碧容健®對皮膚護理有益作用的總結。  
 Schönlau F  
 The cosmeceutical Pycnogenol®.  
 J Appl Cosmetol 20: 241-246, 2002
- Ref. 092** 關於五項描述碧容健®對於糖尿病視網膜病變作用的臨床研究總結。  
 Schönlau F, Rohdewald P  
 Pycnogenol® for diabetic retinopathy: A review.  
 Int Ophthalmol 24: 161- 171, 2002
- Ref. 085** 關於碧容健®藥理學活性的評論文章。  
 Rohdewald P  
 A review of the French maritime pine bark extract (Pycnogenol®), a herbal medication with a diverse clinical pharmacology.  
 Int J Clin Pharmacol Ther 40: 158- 168, 2002
- Ref. 041** 一份關於碧容健®治療靜脈功能失調的療效及安全性的評論。  
 Gulati OP  
 Pycnogenol® in venous disorders: A review.  
 Eur Bull Drug Res 7: 8- 13, 1999
- Ref. 039** 綜述：評論碧容健®心血管藥理學特性的重點在於血小板聚集的預防。  
 Watson R  
 Reduction of cardiovascular disease risk factors by French Maritime Pine Bark Extract.  
 Cardiovasc Rev Rep XX: 326-329, 1999

---

**Ref. 038** 本文評論了碧容健®的抗氧化活性及其對免疫系統和誘導型一氧化氮合酶調製的作用。

Virgili F, Kobuchi H, Noda Y, Cossins E, Packer L

Procyanidins from Pinus maritima bark: Antioxidant activity, effects on the immune system and Modulation of Nitrogen Monoxide Metabolism.

In "Antioxidant Food Supplements in human health", ed. L. Packer, M. Hiramatsu and T. Yoshikawa, published by Academic Press, Chapter 21, pages 323-342, 1999

---

**Ref. 034** 關於碧容健®的化學、氧化活性及生物特性介紹。

Packer L, Rimbach G, Virgili F

Antioxidant activity and biologic properties of a procyandin-rich extract from pine (Pinus maritima) bark, Pycnogenol®.

J Free Radic Biol Med 27: 704-724, 1999

---

綜述：從古代使用松樹皮的歷史到現今碧容健®的開發。

Drehsen G

From ancient pine bark uses to Pycnogenol®

In "Antioxidant Food Supplements in human health", ed. L. Packer, M. Hiramatsu and T. Yoshikawa, published by Academic Press, Chapter 20, pages 311-322, 1999



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