

General Research and Findings

The biological activity of deer antlers may originate in the gangliosides.

Jhon GJ, Park SY, Han SY, Lee S, Kim Y, Chang YS. Studies of the chemical structure of gangliosides in deer antler, Cervus nippon. Chem Pharm Bull (Tokyo). 1999 Jan;47(1):123-7. PubMed PMID: 9987834.

Phosphatidylcholine is a major constituent of cell membranes found in deer antlers and is an immune modulator through the proliferation of concanavalin-A.

Kim KH, Lee EJ, Kim K, Han SY, Jhon GJ. Modification of concanavalin A-dependent proliferation by phosphatidylcholines isolated from deer antler, Cervus elaphus. Nutrition. 2004 Apr;20(4):394-401. PubMed PMID: 15043858.

The concentration of water-soluble protein in freeze-dried antler extract was 13.1 times higher than that of heating processed antler.

Ke LJ, Lin DY, Huang XN, Huo YS, Rao PF, Ye XY. [Comparison of protein composition and activities of pilose antler processed by different methods]. Zhong Yao Cai. 2008 Jan;31(1):11-4. Chinese. PubMed PMID: 18589739.

Velvet antler extract accelerates fracture healing by stimulating the proliferation of chondrocytes and osteoblast precursors.

Zhou QL, Guo YJ, Wang LJ, Wang Y, Liu YQ, Wang Y, Wang BX. Velvet antler polypeptides promoted proliferation of chondrocytes and osteoblast precursors and fracture healing. Zhongguo Yao Li Xue Bao. 1999 Mar;20(3):279-82. PubMed PMID: 10452108.

Velvet antler is capable of promoting nerve regeneration and antler extract can help prevent nerve damage.

Lu L, Wang K, Li L, Xuan Z, Gong X. [Effect of velvet antler polypeptide on peripheral nerve regeneration]. Zhongguo Xiu Fu Chong Jian Wai Ke Za Zhi. 2008 Dec;22(12):1458-61. Chinese. PubMed PMID: 19137890.

Velvet antler contains therapeutic amounts of IGF-1 that have a healthy assimilation into the human body.

Gu L, Mo E, Yang Z, Zhu X, Fang Z, Sun B, Wang C, Bao J, Sung C. Expression and localization of insulin-like growth factor-I in four parts of the red deer antler. Growth Factors. 2007 Aug;25(4):264-79. PubMed PMID: 18092234.

Expressions of neurotrophin-3 and vascular endothelial are found in therapeutic amounts in deer antlers.

Clark DE, Lord EA, Suttie JM. Expression of VEGF and pleiotrophin in deer antler. Anat Rec A Discov Mol Cell Evol Biol. 2006 Dec;288(12):1281-93. PubMed PMID: 17054117.

Tribulus is shown to improve sexual performance and function.

Gauthaman K, Ganesan AP, Prasad RN. Sexual effects of puncturevine (Tribulus terrestris) extract (protodioscin): an evaluation using a rat model. J Altern Complement Med. 2003 Apr;9(2):257-65. PubMed PMID: 12804079.

Velvet antler contains concentrated stem cells and bone marrow.

Cegielski Mark, Irene Calkosinski, Peter Dziegiel, Thomas Gebarowski, Marzena Podhorska-Okolów, Robert Skalik, Maciej Zabel.: Search for stem cells in the growing antler stag (Cervuselaphus) Bull.Vet.Inst.Pulawy Vol.50 no.2 2006, s.247-251

Powder derived from quality elk velvet antlers affects the proliferation and differentiation of mesenchymal stem cells that are derived from adult bone marrow.

Doron, Ran, Zvi Nevo, and Itay Fenichel. The effect of powder made of quality elk velvet antlers on the proliferation and differentiation of mesenchymal stem cells derived from adult bone marrow. European Orthopaedics and Traumatology. 1.3 (2010): 125-129.

Velvet antler polypeptides have a biological effect on the neural stem cells of embryonic rat brains.

Lu LJ, Chen L, Meng XT, Yang F, Zhang ZX, Chen D. Biological effect of velvet antler polypeptides on neural stem cells from embryonic rat brain. Chin Med J (Engl). 2005 Jan 5;118(1):38-42. PubMed PMID: 15642224.

Velvet antler is highly potent in increasing white blood cell counts in humans and defending against leukemia cells.

Editor, North American Elk. Research links velvet antler to multi-billion dollar dietary supplement industry. North American Elk. 1998. Fall:121-123.

Velvet antler increases muscle and nerve strength thereby helping in recovering from injury and surgery.

Fisher, B.D.; M. Gilpin; D. Wiles. Strength training parameters in Edmonton police recruits following supplementation with elk velvet antler (EVA). University of Alberta. 1998.

Church, J.S. Velvet Antler: Its historical medical use, performance enhancing effects and pharmacology. Elk Tech International Research Centre, <http://www.elktech.com/research.htm>. 1999.

Kamen, B. & Kamen P. The remarkable healing power of velvet antler. Nutrition Encounter, Novato, CA. 1999. 152 pg.

Velvet antler contains 20 essential and non-essential amino acids.

Fisher, B.D.; M. Gilpin; D. Wiles. Strength training parameters in Edmonton police recruits following supplementation with elk velvet antler (EVA). University of Alberta. 1998.

Nutrients found in velvet antler are important in treating rheumatoid arthritis, osteoarthritis and osteoporosis.

Sim, JS & Sunwoo, HH. Canadian scientists study velvet antler for arthritis treatment. North American Elk. 1998. Fall:123-124. Whiting, P. Growth hormone in velvet antler. [Online]. Available <http://www.sweetwoodantler.com/hormone.htm> [2001, August 28].

The growth factors, growth hormones and other constituents of velvet antler can combat many of the deteriorating effects associated with the aging process.

McNeary, PS. Velvet Antler: Science Substantiates New Hope for Arthritis Suffers [Online]. Available <http://www.wapiti.net/news/default2.cfm?articleID=36> [2001, August 28].

The alcohol extract of velvet antler may help those suffering from gastric and duodenal ulcers and aid in the recovery of gastrointestinal surgery.

Church, J.S. Velvet Antler: Its historical medical use, performance enhancing effects and pharmacology. Elk Tech International Research Centre, <http://www.elktech.com/research.htm>. 1999.

Wang, B.X.;AJ. Liu; X.J. Cheng; Q.G.Wang; G. R.Wei; J.C.Cui. Anti-ulcer action of the polysaccharides isolated from pilose antler. [Article in Chinese] Yao Hsueh Hsueh Pa I. 985;20(5):32 1-325

Kim,Y E., and D. K. Lim. Biochemical studies on antler (Cervus nippon taiouanus) V:A study of glycolipids and phosholipids of antler velvet layer and pantocrin. Korean Biochem.J. 1977; 10:153-164.

Velvet antler improves cell growth and demonstrates anti-tumor and anti-viral properties.

Editor, North American Elk. Research links velvet antler to multi-billion dollar dietary supplement industry. North American Elk. 1998. Fall:121-123.

Fennessy, P F 1991 Velvet antler: the product and pharmacology. Proc. Deer Course for Veterinarians (Deer Branch of the NZ Vet Assoc). 8 169-180

The oral administration of velvet antler reduces blood glucose levels in diabetic rats.

Cooney, A. (2001). A Review of Scientific Literature on the Health Benefits of Velvet Antler, 34-37.

Velvet antler reduces cholesterol levels in rats.

Burgio, PA. The velvet antler: Its medicinal application, factors affecting growth, and biochemical analysis [Online]. Available Church, JS. Velvet Antler: Its historical medical use, performance enhancing effects and pharmacology [Online]. Available <http://www.albertaelk.com/research/eva.htm> [2001, August 28].

Velvet antler helps reduce arterial blood pressure.

Fisher, B.D.; M. Gilpin; D. Wiles. Strength training parameters in Edmonton police recruits following supplementation with elk velvet antler (EVA). University of Alberta. 1998.

Church, J.S. Velvet Antler: Its historical medical use, performance enhancing effects and pharmacology. Elk Tech International Research Centre, <http://www.elktech.com/research.htm>. 1999.

Velvet antler increases sperm count and mobility in treating impotence.

Obey, F. (1995, Spring/Summer). Velvet antler: Traditional medicine backed by modern research. Classic Critters.

Velvet antler contains nutrients that increase testosterone levels in men and estrogen levels in women.

Cooney, A. (2001). A Review of Scientific Literature on the Health Benefits of Velvet Antler, 34-37.

Velvet antler helps protect organs because of its ability to stimulate protein synthesis.

Velvet antler has an ability to prevent and reduce shock and stress responses.

Yudin, A. M. and Y. L. Dubryakov 1974. A guide for the preparation and storage of uncalcified male antlers as a medicinal raw material. In Reindeer antlers, Academy of Sciences of the USSR. Far East Science Center. Vladivostock.

Velvet antler is a natural dietary whole food supplement that does not produce drug related side effects.

Fisher, B.D.; M. Gilpin; D. Wiles. Strength training parameters in Edmonton police recruits following supplementation with elk velvet antler (EVA). University of Alberta. 1998.

Velvet antler inhibits monoaminoxidase activity and decreases the breakdown of neurotransmitters in the brain resulting in enhanced mood and memory, sustained energy levels and a restful sleep.

The process of antler regeneration is linked to the reproductive cycle.

J. Price and S. Allen. Exploring the mechanisms regulating regeneration of deer antlers Phil. Trans. R. Soc. Lond. B May 29, 2004 359:809-822; doi:10.1098/rstb.2004.1471

There is an expression of PTHrP and the PTH/PTHrP receptor in growing red deer antler.

Barling PM, Liu H, Matich J, Mount J, Ka Wai Lai A, Ma L, Basford Nicholson LF. Expression of PTHrP and the PTH/PTHrP receptor in growing red deer antler. Cell Biol Int. 2004;28(10):661-73. PubMed PMID: 15516324.

IGF-I may be an important hormone in the breeding habits of male white-tailed deer.

Ditchkoff SS, Spicer LJ, Masters RE, Lochmiller RL. Concentrations of insulin-like growth factor-I in adult male white-tailed deer (*Odocoileus virginianus*): associations with serum testosterone, morphometrics and age during and after the breeding season. Comp Biochem Physiol A Mol Integr Physiol. 2001 Jul;129(4):887-95. PubMed PMID: 11440874.

IGF-1 stimulates the proliferation of antlerogenic cells from all four ossification stages (intramembraneous (IMO), transistional (OPC), pedicle endrochondral (pECO) and antler enfochondral (aECO)) in a dose-dependent manner.

Li C, Littlejohn RP, Suttie JM. Effects of insulin-like growth factor 1 and testosterone on the proliferation of antlerogenic cells in vitro. J Exp Zool. 1999 Jun 15;284(1):82-90. PubMed PMID: 10368936.

Lysophosphatidylcholine derived from deer antler extract suppresses hyphal transition in *Candida albicans* through the MAP kinase pathway.

Min J, Lee YJ, Kim YA, Park HS, Han SY, Jhon GJ, Choi W.

Lysophosphatidylcholine derived from deer antler extract suppresses hyphal transition in *Candida albicans* through MAP kinase pathway. Biochim Biophys Acta. 2001 Mar 30;1531(1-2):77-89. PubMed PMID: 11278174.

Cells in regenerating deer antler cartilage provide a microenvironment that supports osteoclast differentiation.

Faucheux C, Nesbitt SA, Horton MA, Price JS. Cells in regenerating deer antler cartilage provide a microenvironment that supports osteoclast differentiation. J Exp Biol. 2001 Feb;204(Pt 3):443-55. PubMed PMID: 11171297.

The water-soluble extract from the antlers of wapiti effects the growth of fibroblasts.

Sunwoo, H.H.; L.Y.M. Sim; T. Nakano; R.J. Hudson; J.S. Sim. Glycosaminoglycans from growing antlers of wapiti (*Cervus elaphus*). Canadian Journal of Animal Science. 1997; 77: 715-21.

New Zealand Deer Antler Velvet (NZDAV) may have positive effects on body composition and strength/power in resistance training.

Broeder, C.E.; Percival, R.; Quindry, J.; Panton, L.; Wills, T.; Browder, K.D.; Earnest, C.; Almada, A.; Haines, S. R.; Suttie, J.M. 2004. The effects of New Zealand deer antler velvet supplementation on body composition, strength, and maximal aerobic and anaerobic performance. In: Suttie, J.M.; Haines, S.R.; Li C. (eds.). Advances in Antler Science and Product Technology, Taieri Print, Fairfield, Dunedin, New Zealand, pp. 161-165.