



Deer are the only mammal on earth that can regrow an appendage – their antlers—each year.

The deer has therefore, a whole range of hormones, nutrients and growth factors in the antlers that are unique to regenerating tissue.

We harvest the deer's antlers sustainably and ethically leaving each stag a small piece of his antlers which he can shed easily at the end of the season yet cannot hurt his herd mates when fighting.

The deer velvet consists of inorganic materials and minerals, polysaccharides, amino acids and other proteins, and lipids and polysaccharides. Of particular pharmacological interest are the constituents collagen and glycosaminoglycan, and prostaglandins. Epidermal growth factor has been isolated from velvet antler.

Some properties of velvet antler are

- Anti-fatigue: Many studies suggest that velvet antler extracts have antifatigue effects with the proteins and polypeptides of velvet antlers the major anti-fatigue substances
- Anti-osteoporosis: long-term velvet antler administration showed positive effects on bone mineral density, bone weight coefficient and bone formation parameters
- Anti-inflammatory: In three independent experiments, mice treated with velvet antler exhibited significantly reduced incidence of arthritis
- Anti-oxidation: Studies have shown the cardioprotective effects of peptides extracted from velvet antlers
- Wound healing and regeneration promoting: a polypeptide from Velvet Antler of red deer was found to stimulate the growth of epidermal cells

Velvet antlers have been widely used in Asia for many centuries, to nourish Yin, tonify the kidney, strengthen bones and muscles and promote blood flow. In recent decades, pharmacological studies have validated the traditional uses of velvet antlers both in vitro and in vivo. Pharmacological studies demonstrate that velvet antlers possess multi-functions, such as immunomodulatory, anti-cancer, anti-fatigue, anti-osteoporosis, anti-inflammatory, anti-oxidant, wound healing and regeneration promoting activities.

Summary of the chemical constituents present in deer antlers.

- Mineral elements; Calcium (Ca), Phosphorus (P), Sodium (Na), Potassium (K), Magnesium (Mg), Iron (Fe), Zinc (Zn), Copper (Cu), Chromium (Cr), Strontium (Sr), Nickel (Ni), Cobalt (Co), Manganese (Mn), Vanadium (V), Tin (Sn)
- Amino acids; Arginine (Arg), Histidine (His), Glutamic acid (Glu), Proline (Pro), Aspartic acid (Asp), Serine (Ser), Threonine (Thr), Glycine (Gly), Alanine (Ala), Isoleucine (Ile), Leucine (Leu), Phenylalanine (Phe), Methionine (Met), Lysine (Lys), Tyrosine (Tyr), Valine (Val), Cysteine (Cys), Hydroxyproline (Hyp), Tryptophan (Trp),
- Proteins and peptides; FGF-2, VEGF, FGFR1, FGFR2, FGFR3 and VEGFR-2
- Soluble proteins, Crude proteins, Collagen content, Tripeptide with molecular weight of 395.1, 3.2 kDa polypeptide, Decorin, Saccharides, Sulphated-GAGs and GAGs, Uronic acid, Chondroitin sulphate A, B and C, Chondroitin sulphate, Phospholipids, Sialic acid, Keratan sulphate, Sphingomyelin, phosphatidylcholine, phosphatidylethanolamine, lysophosphatidylcholine and lysophosphatidylethanolamine.
- Lipids and polyamines, Polyunsaturated fatty acids, Prostaglandins of A, B, E and F, Saturated fatty acids, monounsaturated fatty acids, conjugated linoleic acid, polyunsaturated fatty acid and 1-3 fatty acid, 17 β -Hydroxyprogesterone, progesterone and testosterone
- Biological bases Uracil, hypoxanthine and uridine

Ref; Bioactive components of velvet antlers and their pharmacological properties; Authors Zhigang Sui, Lihua Zhang, Yushu Huo, Yukui Zhang. Published in the Journal of Pharmaceutical and Biomedical Analysis 87 (2014) 229– 240