

## Testosterone Elevating Ingredients

### Chrysin

- Increases testosterone production from testis Leydig cells and inhibits aromatase which converts testosterone to progesterone.

[Shoieb S, Esmat A, Khalifa A et al.](#) Chrysin attenuates testosterone-induced benign prostate hyperplasia in rats. *Food Chem Toxicol.* 2018. 111:650-659.

[Martin L, Touaibia M.](#) Improvement of Testicular Steroidogenesis Using Flavonoids and Isoflavonoids for Prevention of Late-Onset Male Hypogonadism. *Antioxidants (Basel).* 2020. 9(3):237.

[Ibrahim A, abul-haji Y.](#) Aromatase inhibition by flavonoids. *J Steroid Biochem Mol Biol.* 1990. 37:257-60.

[Balam F, Ahmadi Z, Ghorbani A.](#) Inhibitory effect of chrysin on estrogen biosynthesis by suppression of enzyme aromatase (CYP19): A systematic review. *Heliyon.* 2020. 6.e03557.

### Diindolylmethane

- protects prostate and testicles

[Nachshon-Kedmi M, Yannai S, Fare F.](#) Induction of apoptosis in human prostate cancer cell line, PC3, by 3,3'-diindolylmethane through the mitochondrial pathway. *Br J Cancer.* 2004. 91:1358-63.

[Goldberg A, Draz H, Montes-Grajales D et al.](#) 3,3'-Diindolylmethane (DIM) and its ring-substituted halogenated analogs (ring-DIMs) induce differential mechanisms of survival and death in androgen-dependent and -independent prostate cancer cells. *Genes Cancer.* 2015. 6(5-6):265-280.

[Li Y, Wang Z, Kong D et al.](#) Regulation of FOXO3a/beta-catenin/GSK-3beta signaling by 3,3'-diindolylmethane contributes to inhibition of cell proliferation and induction of apoptosis in prostate cancer cells. *J Biol Chem.* 2007. 282(29):21542-50.

### Gamma Oryzanol

- lowers LDL-cholesterol which is associated with an increase in endogenous testosterone production

[Devarajan S, Singh R, Chatterjee B et al.](#) A blend of sesame oil and rice bran oil lowers blood pressure and improves the lipid profile in mild-to-moderate hypertensive patients. *J Clin Lipidol.* 2016. 10(2):339-49.

[Bumrungpert A, Chongsuwat R, Phosat C et al.](#) Rice Bran Oil Containing Gamma-Oryzanol Improves Lipid Profiles and Antioxidant Status in Hyperlipidemic Subjects: A Randomized Double-Blind Controlled Trial. *J Altern Complement Med.* 2019. 25(3):353-358.

[Berger A, Rein D, Schäfer A et al.](#) Similar cholesterol-lowering properties of rice bran oil, with varied gamma-oryzanol, in mildly hypercholesterolemic men. *Eur J Nutr.* 2005. 44(3):163-73.

### Longjack Eurycoma Longifolia (root)

- increases testosterone levels

[Tambi M, Imran M.](#) Eurycoma longifolia Jack in managing idiopathic male infertility. *Asian J Androl.* 2010. 12(3):376-80.

[George A, Henkel R.](#) Phytoandrogenic properties of Eurycoma longifolia as natural alternative to testosterone replacement therapy. *Andrologia.* 2014. 46(7):708-21.

[Talbot S, Talbot J, George A et al.](#) Effect of Tongkat Ali on stress hormones and psychological mood state in moderately stressed subjects. *J Int Soc Sports Nutr.* 2013. 26;10(1):28.

### Tribulus Terrestris

- significantly increased total and free serum testosterone levels in healthy adults

[Stefănescu R, Tero-Vescan A, Negruțiu A et al.](#) A Comprehensive Review of the Phytochemical, Pharmacological, and Toxicological Properties of *Tribulus terrestris* L. Biomolecules. 2020. 10(5):752.

[Milius K, Dadeliene R, Skernevicius J.](#) The influence of the *Tribulus terrestris* extract on the parameters of the functional preparedness and athletes' organism homeostasis. *Fiziol Zh.* 2009. 55(5):89-96.

[Roajah M, El Khayat Y, Gamal El Din S et al.](#) Pilot Study on the Effect of Botanical Medicine (*Tribulus terrestris*) on Serum Testosterone Level and Erectile Function in Aging Males With Partial Androgen Deficiency (PADAM). *J Sex Marital Ther.* 2016. 42(4):297-301.