

Isolation of Novel Hyaluronidase Inhibitor from the Hard Shell of Coconut

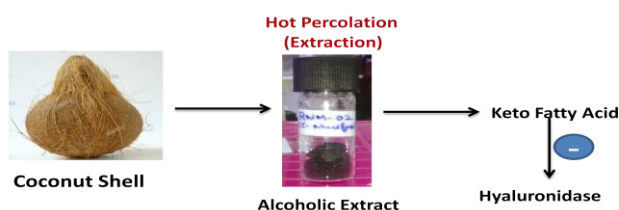
Rajeev Kumar Singla (rajeevsingla26@gmail.com)^a, Mohammed Ali (maliphyto@gmail.com)^b, Ashok Kumar Dubey (adubey.nsit@gmail.com)^{a*}

^a Division of Biological Sciences and Engineering, Netaji Subhas Institute of Technology, Sector-3, Dwarka, New Delhi-110078, India

^b Department of Pharmacognosy and Phytochemistry, Faculty of Pharmacy, Jamia Hamdard (Hamdard University), New Delhi, India

* Corresponding Author

Graphical Abstract



Abstract

In the current study, we have isolated and characterized a novel molecule from the hard shell of *Cocos nucifera* Linn. and evaluated it for its inhibitory potential against hyaluronidase enzyme. Alcoholic extract of the hard shell was subjected to various purification procedures viz. column chromatography, solvent based extraction and TLC to yield a phytomolecule. Spectral characterization indicated that it is a novel keto fatty acid. To the best of our knowledge, this is the first keto fatty acid from the coconut plant even. Results of hyaluronidase inhibition assay indicated that it has moderate hyaluronidase inhibitory activity.

References

1. Singla, R.K.; Jaiswal, N.; Bhat, V.G.; Jagani, H. Antioxidant and antimicrobial activities of *Cocos nucifera* Linn. (Arecaceae) endocarp extracts. *Indo Global J. Pharm. Sci.*, **2011**, *1*(4), 354-361.
2. Singla, R.K.; Jagani, H. Investigation of antimicrobial effect of dry distilled extract of *Cocos nucifera* Linn. endocarp. *WebmedCentral Pharm. Sci.*, **2012**, *3*(8), WMC003671.
3. Bankar, G.R.; Nayak, P.G.; Bansal, P.; Paul, P.; Pai, K.S.R.; Singla, R.K.; Bhat, V. Vasorelaxant and antihypertensive effect of *Cocos nucifera* Linn. endocarp on isolated rat thoracic aorta and DOCA salt-induced hypertensive rats. *J. Ethnopharmacol.*, **2011**, *134*, 50–54.
4. Scotti, L.; Singla, R.K.; Ishiki, H.M.; Mendonca Junior, F.J.B.; da Silva, M.S.; Filho, J.M.B.; Scotti, M.T. Recent advancement in natural hyaluronidase inhibitors. *Curr. Top. Med. Chem.*, **2016**, *16*, 2525-2531.