

Anti-elastase and anti-tyrosinase activities of silica and titania nanoparticles isolated from aspergillus flavus.

Jayapriya J¹, Umasaravanan D², Rajendran BR.

¹Department of Biotechnology, Alpha Arts and Science College, Porur, Chennai, India.

²Department of Environmental Biotechnology, School of Environmental Sciences, Tiruchirapalli, India.

From International Conference on Biosciences- Trends in Molecular Medicine.

Post Graduate Department of Biochemistry, Dwaraka Doss Goverdhan Doss Vaishnav College, Arumbakkam, Chennai 600 106, India. 7-8 February 2012.

American J of Bio-pharm Biochem and Life Sci 2012 March, Vol. 1 (Suppl 1): A42.

ABSTRACT

Silica and titania nanoparticles extracted from *Aspergillus flavus* have been screened for the elastase and tyrosinase inhibition activities. The extracted Silica nanoparticles showed remarkable Tyrosinase inhibitory activities ranging from 59-79% at a concentration of 15µg/mL. Si nanoparticles extract dissolved in water showed 65.82%, crude Si nanoparticles extract showed 58.64% and the enzyme inhibitory activities were compared with ascorbic acid which showed 75.52% activity. Ti nanoparticles extract dissolved in water showed 78.48%, crude Ti nanoparticles extract showed 69.19% and the enzyme inhibitory activities were compared with ascorbic acid which showed 75.52% activity. Elastase inhibition results at a concentration of 15µg/mL, Si nanoparticles extract dissolved in water showed 70.28%, crude Si nanoparticles extract showed 59.41% and the enzyme inhibitory activities were compared with ascorbic acid which showed 57.24% activity. Ti nanoparticles extract dissolved in water showed 82.6%, crude Ti nanoparticles extract showed 73.18% and the enzyme inhibitory activities were compared with ascorbic acid which showed 57.24% activity. Hence the maximum Tyrosinase activity was observed for Si nanoparticles extract dissolved in water and crude Ti nanoparticles extract, Si nanoparticles extract dissolved in water and crude Ti nanoparticles extract showed maximum elastase inhibitory activity. According to the excellent anti-tyrosinase and elastase activity Si and Ti nanoparticle extract might be used for cosmetic and pharmacology industries and also as anti-melasma agent.