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**The inhibitory effect of spice extracts on the formation of amyloid fibrils using trypsin in aqueous ethanol**

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The formation of amyloid fibrils has been associated with several human diseases. Spices contain important bioactive compounds without undesirable side effects, which are necessary for the prevention and cure of various diseases. 52 phenolic compounds were identified in culinary herbs and spices. The aromatic rings of polyphenols may competitively interact with aromatic residues in amyloidogenic proteins, prevent the  $\pi$ - $\pi$  interaction and block the self-assembly process. The phenolic hydroxyls of polyphenols may inhibit amyloid fibril formation via binding the hydrophobic residues in amyloidogenic proteins. Here we report the inhibitory effect of some spice extracts on the formation of amyloid fibrils using trypsin as a model protein in aqueous ethanol. Inhibition of aggregation and fibrillation of trypsin was determined based on turbidity measurement, aggregation kinetics assay, amyloid specific dye Congo red (CR), electronic circular dichroism (ECD) and transmission electron microscopy (TEM). The experiments revealed that the greatest anti-fibrillation activity was exerted by chili extract from all the spice extracts investigated. It was found that the amount of fibril formation was greatly reduced with increasing concentration of chili extract. We demonstrated that chili extract significantly inhibits fibril formation as well as the inhibitory effect is dose dependent.

**Biography**

Phanindra Babu Kasi is pursuing his PhD in Biology under the supervision of Dr. Márta Kotormán at the Department of Biochemistry and Molecular Biology, Faculty of Science and Informatics, University of Szeged, Hungary. His studies are mostly focused on "Inhibitory effect of coffee, ginseng, herbs, red wines, grape seed extract, teas, vegetables, fruits and spices on amyloid-like fibril formation by trypsin in aqueous organic solvents". His PhD research mainly focuses on the effect of natural plant and food extracts or bioactive compounds on the amyloid related disorders.

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