

International Conference on
**NEUROLOGICAL DISORDERS &
STROKE AND NEUROONCOLOGY**

April 24-25, 2017 Dubai, UAE

Inhibition and disaggregation of human lysozyme amyloid aggregates by Levodopa

Saima Nusrat

Aligarh Muslim University, India

Amyloid related neurodegenerative diseases and non-neuropathic systemic amyloidosis have attracted much research efforts however no curative drugs have been known till date other than the symptomatic cure. Therapeutic compounds that can either inhibit or disaggregate fibrillar species have been explored and many more are yet to be discovered. The current research describes an inclusive biophysical, microscopic and computational study establishing that L-3, 4-dihydroxyphenylalanine (Levodopa) to be promising against the inhibition and disaggregation of thermally induced amyloid fibrillation of human lysozyme (HL). The IC₅₀ value of Levodopa was estimated to be $63.0 \pm 0.09 \mu\text{M}$. Levodopa interferes amyloid fibrillation by forming hydrophobic interaction and hydrogen bond formation with the amino acid residues present in the amyloid fibril forming prone region of HL as explained by molecular simulation results. Levodopa was also found to disaggregate mature amyloid fibrils into unordered species and the DC₅₀ value was calculated to be $19.95 \pm 0.06 \mu\text{M}$. Thus, Levodopa and compounds with similar structure could be operative as a strong inhibitor towards the therapeutic development against systemic amyloidosis.

Biography

Saima Nusrat has her expertise in biophysical, calorimetric and microscopic techniques. She is currently pursuing Ph.D. in Biotechnology from Aligarh Muslim University, Aligarh, India. Her area of research work is specified as protein folding and misfolding studies, protein-ligand interaction, protein aggregation and inhibition. She has published around 15 research articles in peer reviewed journals like ABB, PLoS ONE, JPCB etc. Her H index is 5 and total citation is around 71.

saimanusrat93@gmail.com

Notes: