Fluorescent Analogs for the Investigation of Amyloid Formation

This innovation may advance the research into Alzheimer’s, Parkinson’s and type II diabetes and more than 20 other diseases by providing high throughput screening of amyloid inhibitors and detecting amyloid plaques.

Background:
The formation of amyloid fibrils or plaques are implicated in more than 20 human diseases, including Alzheimer’s, Parkinson’s and type II diabetes, which afflict more than 50 million individuals worldwide. Extensive medical research has led to the development of various assays that provide valuable mechanistic insights to the origin of these pathologies. However, existing fluorescent screens used to detect amyloid formation, as well as amyloid inhibitors prescribed by clinicians, result in false positives, and severely limit their value.

Technology Description:
Daniel P. Raleigh, Ph. D., professor, Department of Chemistry and The Institute of Chemical Biology & Drug Discovery at Stony Brook University, has developed a novel amyloid polypeptide, p-cyanoPhenylalaine-IAPP, for use in high throughput screening of amyloid inhibitors and the detection of harmful amyloid plaques associated with many human diseases. Dr. Raleigh has created a series of novel fluorescent p-cyano-Phenylalaine amyloid probes that do not require the addition of external fluorescent dye used in standard methods.

Advantages
This novel probe enables:
• Screening for the amyloid plaque development using:
  • Fluorescence
  • Fluorescence resonance energy transfer (FRET)
  • Infrared detection
• Effective identity of amyloid inhibitors, while eliminating the false positives and protein quenching issues that plague such screens

Applications
• Research tool
• Compound/Inhibitor screen
• Fluorescent marker

Patents / Publications:
• Patent Pending


• The fluorescent amino acid p-cyanophenylalanine provides an intrinsic probe of amyloid formation. Marek P, et al., Chembiochem. 2008 Jun 16, 9(9)

Adam M. DeRosa, Ph. D.
Licensing Associate
Office of Technology Licensing & Industry Relations
N5002 Melville Library
Stony Brook University
Stony Brook, NY 11794-3369
631-632-6955 (voice)
631-632-1505 (fax)
Adam.DeRosa@stonybrook.edu
www.stonybrook.edu/research/otlir