

Conformational indeterminism in protein misfolding: chiral amplification on amyloidogenic pathway of insulin

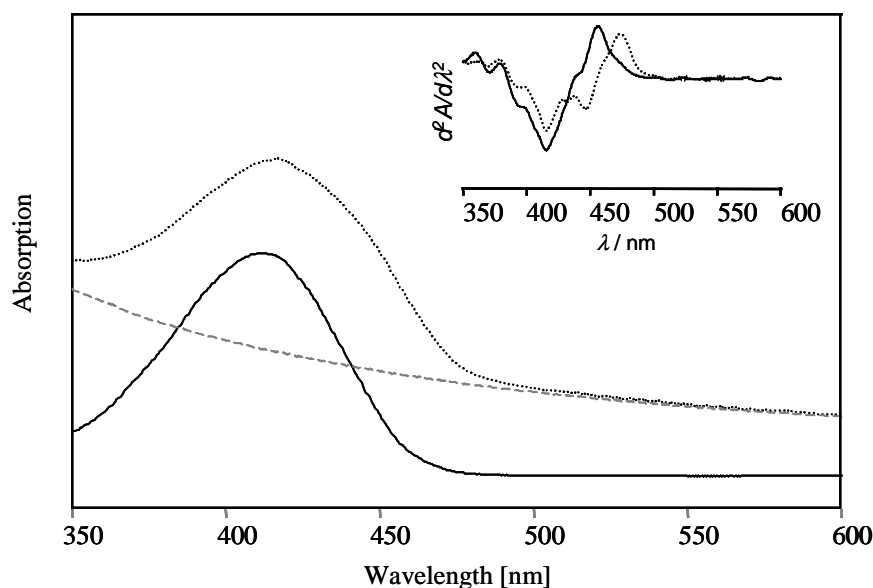
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SUPPORTING INFORMATION

- (1) UV spectra of insulin amyloid, Thioflavin T and the insulin amyloid-Thioflavin T complex;
- (2) Acknowledgements

Figure S1. UV-VIS absorption spectra of Thioflavin T (solid line), insulin amyloid (dashed line), and ThT - amyloid complex (dotted line). The concentrations and solutions conditions of the protein and the dye are the same, as used in the ICD measurements



specified in the manuscript. The inset shows the corresponding second derivative spectra of the free and amyloid-bound dye (calculated according to the Savitzky-Golay algorithm).

The binding between amyloid fibrils and Thioflavin T molecules restricts intramolecular rotation in the

latter, which results in dramatic increase of quantum yield of fluorescence of immobilized dye. At the same time, these binding interactions are known to produce only minor spectral effects, as far as the UV-VIS absorption spectra are concerned (1, 2). The difference is captured in the second derivative spectra shown in inset of Figure S1. While the protein itself does not feature any electronic absorption per se in this region of wavelengths, the insoluble amyloid particles do scatter light.

References:

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- (2) Dzwolak, W.; Pecul, M. *FEBS Lett.* **2005**, 579, 6600.

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