

Assembly of N-acetylated α -Synuclein at the air-aqueous interface

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Alpha-synuclein (α S) is a Parkinson's disease biomarker and remains as intrinsically disordered protein in aqueous solution. Here, we demonstrate the self-assembly of N-terminally acetylated α -synuclein (Ac- α S) at the air-water interface. The protein is highly surface active and attains a surface pressure of ~ 22 mN/m when introduced in the sub-phase. In a compression-expansion cycle of Langmuir monolayer the protein attains a highest surface pressure of ~ 30 mN/m. A hysteresis is seen in the pressure-area (π -A) isotherm which signifies the self-assembly of the protein at the air-aqueous interface. The Langmuir-Blodgett thin film of the protein shows an α -helical signature in circular dichroism spectroscopic analysis. The anisotropy of the thin film is illustrated using linear dichroism spectroscopy.

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