

Seminar for Master degree Student

Seminar's Subject: FUS protein as an example of protein with IDR

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Date: 10.06.2022

Time: 11:00

Location: Google Classroom (<https://meet.google.com/jey-xnuh-ajd>)

Summary

Intrinsically disordered protein defined as protein that lacks three-dimensional structure or a well-defined tertiary structure, although they have biological activities. They can bind to nucleic acid or other protein so they accelerate chemical interaction between tied molecular, also they play a role in posttranslational modification, protein fusions, alternative splicing, deletion or insertions. Researcher has been identified that the presence of IDRs in proteins drives phase transitions. Phase transition reversible is a process of homogenous fluid between two phase, one is condense phase, and the other is diluted phase. Phase transition phenomenon lead to condensation and accumulation of some proteins and/or nucleic acid to form a membraneless organelles, such as P bodies. Furthermore, FUS, a prion-like protein containing intrinsically disordered domains associated with the neurodegenerative disease ALS. In cells, FUS forms liquid compartments at sites of DNA damage and in the cytoplasm upon stress. Also, in vitro “aging” experiment the droplet of FUS protein covert with time to from liquid to an aggregated state, and this conversion is accelerated by patient-derived mutation.

