

# Investigation of translation initiation factor through protein–protein interactions and molecular dynamics approaches

Prajisha Jayaprakash, Jayashree Biswa

Chitra Jeyaraj Pandian

Jeyaraman Jeyakanthan

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b Department of Biotechnology, Dr. Umayal Ramanathan College for Women, Karaikudi, India

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## ABSTRACT

A crucial biological process that involves both transcription and translation is protein synthesis. While, the translation mechanism endures protein synthesis with the help of messenger RNA, translation initiation factors, initiator tRNA and ribosomal small subunit, which efficiently recruit mRNA and start protein synthesis. This study focuses on the archaea, which is an attractive target of its evolutionary aspects. aIF2 plays a key regulatory roles in the archaea. This work mainly focuses on the initiation mechanism of *Pyrococcus horikoshii* OT3 and analyzes the structural interaction pattern between proteins. Here, the crystal structure of PH0702 was retrieved from the Protein Data Bank (PDB id: 6A34). Further, a molecular docking was carried out with the PH0702 protein,