Tata Institute of Fundamental Research
Survey No. 36/P, Gopanpally Village, Serilingampally, Ranga Reddy Dist., Hyderabad - 500107

Seminar

Biomolecular NMR studies on G57W mutant of human γS-crystallin and its role in dominant congenital cataract

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A recently identified mutant of human γS-crystallin, G57W, causes infantile cataract. However, the mechanism of this cataract remains largely not understood. To unravel the structural basis for γS-G57W causing cataract, I set out to characterize it employing solution NMR spectroscopy. In this endeavour, my studies include biophysical investigations [1], resonance assignments [2], high-resolution 3D structure [3], conformational dynamics [4], H/D exchange kinetics [5] and temperature-dependent NMR studies [6] on both the mutant and its wild-type. Exploring the role of inter-domain interface on stability, I further performed structural studies on their individual domains using NMR [7]. In this talk, I will discuss the outcome of my studies with clues to understand the mechanism of cataract.

References:

[1] K. J. Bari et al., 2018. Biochem. Biophys. Res. Commun. 506 (4) 862-867.
[2] K. J. Bari et al., 2018. Biomol NMR Assign 12 (1), 51-55.
[3] K. J. Bari et al., 2019. J. Struct. Biol. 205 (3), 72-78.
[4] K. J. Bari et al., 2019. Biochem. Biophys. Res. Commun. 511 (3), 679-684.
[5] K. J. Bari et al., 2019. Biochem. Biophys. Res. Commun. 514 (3), 901-906.
[6] K. J. Bari et al., 2019. Biochem. Biophys. Res. Commun. 514 (3), 946-952.
[7] K. J. Bari et al., 2019. Biochem. Biophys. Res. Commun. 517 (3), 499-506.

Friday, Oct 4th 2019

4:00 PM (Tea/Coffee at 3:30 PM)

Auditorium, TIFR-H