

Seminar

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

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A recently identified mutant of human γ S-crystallin, G57W, causes infantile cataract. However, the mechanism of this cataract remains largely not understood. To unravel the structural basis for γ S-G57W causing childhood cataract, I set out to characterize it employing solution NMR spectroscopy and allied biophysical tools. My studies include biophysical investigations^[1], NMR resonance assignments^[2], structure^[3], conformational dynamics^[4,5], H/D exchange^[6] and temperature-dependent NMR studies^[7] on both the mutant and its wild-type. Exploring the role of inter-domain interface on stability, I performed structural studies on their individual domains using NMR^[8,9]. 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.
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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. *J. Phys. Chem. B* 123 (49), 10384-10393.
6. K. J. Bari et al., 2019. *Biochem. Biophys. Res. Commun.* 514 (3), 901-906.
7. K. J. Bari et al., 2019. *Biochem. Biophys. Res. Commun.* 514 (3), 946-952.
8. K. J. Bari et al., 2019. *Biomol. NMR Assign.* 13 (1), 43-47.
9. K. J. Bari et al., 2019. *Biochem. Biophys. Res. Commun.* 517 (3), 499-506.

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4:00 PM

Seminar Hall, TIFR-H