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Proposal Details

Title of the Project:

lysyl trna synthetase in complex with RNA

Abstract for lay readers:

Aminoacyl trna synthetase (aaRSs) drive protein translation in cells and hence these are essential enzymes across life. Inhibition of these enzymes can halt growth of an organism by stalling protein translation. Therefore, small RNA molecules targeting the RNA binding site is an attractive avenue from the perspective of developing new inhibitors. The current work on human lysyl-tRNA synthetase in complex with small RNA will result in newer understanding of this interactions.

Abstract for reviewers:

Controlling the aminoacyl-tRNA synthetases enzymes can hamper the growth of the cell. This work focuses on human enzyme (host) and in particular the development and validation of novel RNA binding blocking aptamers. Work on human lysyl-tRNA synthetase (HskRS) in complex with tRNA based small RNAs will result in newer understanding of the this enzyme-RNA binding which can be exploited. This will guide towards developing better, more potent and less toxic drug like molecules for the host enzymes.

Details of Crystals:

Protein name : HskRS

Source organisms : Human

Crystals tested at home source : Yes

Resolution at home source : 4.0

Mosaicity : 1

Anisotropy : 0.06

Cell parameters:

a= : 83

b= : 88

c= : 87

α = : 90

β = : 95

γ = : 90

Space group : p21

Crystallization conditions : 15% MPD and 100 mM hepes 7.5 and 5%
peg3350

Cryo conditions : 12.5% ethylene glycol

Xenon Freezing : No

Whether for SAD / MAD dataset : No

Heavy Atom : Mg

Any other details

