

MONDAY

COLLOQUIUM

Diversity of left-right asymmetry among animals

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29 Jul 2024 (Monday) | 16:00 Hrs (Tea / Coffee 15:45 Hrs) | Venue: TIFRH Auditorium

Animal body is superficially symmetric along the left-right (L-R) axis but all visceral organs are L-R asymmetric in terms of position, shape and pattern. Such L-R asymmetry is established during embryonic development. A variety of animals on the earth employ different mechanisms for L-R asymmetry, especially for symmetry breaking. This is evident even among vertebrates. Thus, fish, amphibians and mammals use motile cilia and unidirectional fluid flow to break symmetry while birds and reptiles break L-R symmetry by an unknown mechanism that does not involve motile cilia. Invertebrates such as insects and snails employ different mechanisms. I studied the genetic pathway of L-R asymmetry with the mouse as a model animal, but since I moved to NCBS/India last year, my lab is investigating how chick and reptile embryos establish molecular L-R asymmetry without cilia. Also, we have started to investigate how snail embryos establish L-R asymmetric gene expression. I would like to introduce what I learned with mouse embryos and current attempts with chick and snail embryos.