

## **Seminar**

### **The orderly construction of mammalian body in the anterior-to-posterior sequence**

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The sequential development of the body in an anterior-to-posterior gradient is a fundamental feature of embryogenesis in the animal kingdom. Despite this, several central questions concerning the anterior-posterior body axis patterning remain unaddressed. We have contributed to elucidating the network of signalling cues and transcription factors regulating the patterning of mesoderm germ layer along the anterior-posterior axis. Using mouse genetics, stem cell differentiation and embryo organoids as models, we have discovered a regulatory network including retinoic acid signalling pathway and T-box transcription factors that controls the differential specification of anterior and posterior mesoderm. This work has broader implications as it uncovers the mechanism governing the orderly developmental transition from the anterior to posterior program. Recently, we have embarked on developing stem cell technology by leveraging the knowledge of early development. One of our ongoing efforts is to develop complex cardiac organoids using a developmentally-inspired method for modelling congenital heart diseases.

***Friday, Mar 6<sup>th</sup> 2026***

***16:00 Hrs (Tea / Coffee 15:45 Hrs)***

***Auditorium, TIFRH***