



Singapore Developmental Biology Club



SDBC Special Seminar:

Professor Peter Rigby FRS
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5 May 2014, Monday
Aspiration Theatrette, Level 2M, Matrix, Biopolis
4:00 PM – 5:00 PM

Transcriptional Regulation of Skeletal Muscle Development

We are interested in the mechanisms that regulate transcription during the development of the embryo and have worked particularly on the determination and differentiation of skeletal muscle.

At the core of the transcriptional programme that controls the determination of skeletal muscle progenitors and their subsequent differentiation are the four myogenic regulatory factors, Myf5, MyoD, Mrf4 and Myogenin. We have focussed on the locus encoding Mrf4 and Myf5 and have used BAC-mediated transgenesis to define its extraordinarily complex regulatory landscape and to discover a novel mechanism for the global regulation of such loci. We have also analysed individual enhancers from the locus in order to identify the upstream signals and transcription factors which activate the myogenic programme both in the embryo and during regeneration in the adult. Our recent efforts have concentrated on the facial muscle precursors and we have shown that the regulatory logic in the head is quite distinct from that which operates in the trunk.

The application of genome-wide analysis techniques has provided important mechanistic insights into the mechanisms of terminal differentiation and I shall attempt to integrate our own work into a contemporary overall scheme for the making of skeletal muscle.

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