

Characterisation of alternative splicing pattern of Voltage Gated Calcium Channels across tissues and lifespan in human

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Nearly 95% of the genes in human undergo alternative splicing, the process by which multiple transcripts are produced from a single gene. Alternative splicing is a highly regulated process both across tissues and across development and lifespan within an individual.

We are interested in understanding how alternative splicing is regulated in a tissue and developmental stage-specific manner and are focusing on a specific gene family, the voltage gated calcium channels, to achieve this. These genes have the peculiarity to be highly complex (> 50 exons) and to be expressed in multiple tissues including brain, heart, skeletal muscle, retina.

We recently annotated hundreds of novel transcripts emerging from a single gene, however this was performed only in adult brain. The project therefore aims to further characterise the splicing pattern and transcript expression across tissues from a single individual and across the human lifespan using large, short and long read expression data sets.

This project is a great opportunity to develop bioinformatic skills, gain experience in manipulating and analysing large transcriptomic data sets.