Virtual DANDRITE Lecture

Thursday 7 May 2020
15.00 – 16.00

Online via Zoom

Please find Zoom link via the Outlook calendar invitation. If you have not received this, please write an e-mail to Katrine: karasmus@dandrite.au.dk

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Informing in vitro stem cell differentiation through single-cell RNAseq analysis of the developing human fetal striatum

Conventional approaches to classify the different cell populations of the striatum have been limited to exploring relatively few markers and therefore have provided a narrow characterization of any given cell type. Accordingly, the available protocols for differentiation of stem cells into the MSN that die in Huntington's Disease (HD) suffer from the lack of information about their normal development. Nevertheless there have been some advances with the demonstration that transplantation of neurons expressing MSN markers leads to improvement of the symptomatology in HD animals.

Taking these aspects under consideration, we performed single-cell RNA-seq to decode an unambiguous gene signature of the striatum and reveal how neural progenitors of this domain are able to differentiate at the single cell level. This map should help improve protocols for differentiation into distinct MSN states and therefore increase our understanding of diseases affecting the striatum together with advancing the possibility of cell therapy treatments for HD.