Diversity and plasticity in the assembly of neuronal circuits

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Abstract: Inhibitory neurons —interneurons— play crucial roles in the regulation of neural circuit activity in the cerebral cortex. A hallmark of cortical interneurons is their remarkable structural and functional diversity, yet the molecular determinants and the precise timing underlying their diversification remain largely unknown. The search for mechanisms controlling the diversity of GABAergic interneurons has primarily focused on the analysis of genetic programs in their progenitor cells. In this talk, I will describe how transcriptional programmes, both during embryonic development and in the postnatal brain, regulate the identity of specific classes of cortical interneurons, thereby contributing to the assembly of neuronal circuits in the cerebral cortex.