

Involvement of JNK1 in Neuronal Polarization During Brain Development

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The c-Jun N-terminal Kinases (JNKs) are a group of regulatory elements responsible for the control of a wide array of functions within the cell. In the central nervous system (CNS), JNKs are involved in neuronal polarization, starting from the cell division of neural stem cells and ending with their final positioning when migrating and maturing. This review will focus mostly on isoform JNK1, the foremost contributor of total JNK activity in the CNS. Throughout the text, research from multiple groups will be summarized and discussed in order to describe the involvement of the JNKs in the different steps of neuronal polarization. The data presented support the idea that isoform JNK1 is highly relevant to the regulation of many of the processes that occur in neuronal development in the CNS.

asymmetric division

DCX

JNK1

MAP1B

migration

NMDAR

SCG10

synaptogenesis

WDR62