# C3orf70 is associated with neural and neurobehavioral development

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Neurogenesis is the process by which undifferentiated progenitor cells convert into mature and functional neurons. Impairments in neurogenesis are associated with neurodevelopmental and neuropsychiatric disorders. Elucidating the molecular mechanisms underlying neurogenesis can stimulate further understanding of the pathophysiology and the discovery of novel therapeutic targets for these disorders. In this study, we performed a comparative transcriptomic analysis to reveal common targets of the proneural transcription factors, Neurog1/2 or Ascl1, during neurogenesis of human and mouse stem cells. We successfully identified *C3orf70* as a novel common target of Neurog1/2 and Ascl1 during neurogenesis. Two orthologs of *C3orf70* were expressed in the midbrain and hindbrain of zebrafish larvae. We generated c3orf70 knockout zebrafish using CRISPR/Cas9. The expression of the mature neuron markers *elavl3* and *eno2* was significantly decreased in c3orf70 knockout zebrafish. The expression of *irx3b*, a zebrafish ortholog of *IRX3* and a midbrain/hindbrain marker, was significantly reduced in *c3orf70* knockout zebrafish. Neurobehaviors related to circadian rhythm and changing light-dark conditions were significantly impaired in c3orf70 knockout zebrafish. These results suggested that C3orf70 is involved in neural and neurobehavioral development. Defects in C3orf70 may be associated with midbrain/hindbrain-related neurodevelopmental and neuropsychiatric disorders.