Casc15 lncRNA regulates V-SVZ neuroblast migration

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The Ventricular-Subventricular zone (V-SVZ) is the largest postnatal stem cell niche in the mammalian brain and generates new olfactory bulb interneurons throughout life; it can be a source of gliomas and has been implicated in a range of neurological conditions. A large number of long-noncoding RNAs (lncRNAs) are specifically expressed in the V-SVZ, and may represent important therapeutic targets. We characterised a novel lncRNA *Casc15 (2610307P16Rik)* in neuroblast migration. A combination of *in vitro, ex vivo*, and *in vivo* methods reveals that depletion of *Casc15* lncRNA expression causes a dose-dependent increase in neuroblast migration. Through ChIP-qPCR and RIP we have shown that *Casc15* interacts with the Polycomb repressive complex (PRC2), and that depletion of *Casc15* impairs deposition of repressive epigenetic marks by PRC2 at select loci.

Casc15 acts to restrain neuroblast migration in the postnatal murine brain, and aberrations in this locus give rise to increase risk of neuroblastoma. *Casc15* effects on migration may be exerted through PRC2 regulation.