Splicing factor TRA2B is required for neural progenitor survival.

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Public Summary: Alternative splicing of pre-mRNAs can rapidly regulate the expression of large groups of proteins. The RNA binding protein TRA2B (SFRS10) plays well-established roles in developmentally regulated alternative splicing during Drosophila sexual differentiation. TRA2B is also essential for mammalian embryogenesis and is implicated in numerous human diseases. Precise regulation of alternative splicing is critical to the development and function of the central nervous system; however, the requirements for specific splicing factors in neurogenesis are poorly understood. In this study, we focus on the role of TRA2B in mammalian brain development. We show that, during murine cortical neurogenesis, TRA2B is expressed in both neural progenitors and cortical projection neurons. Using cortex-specific Tra2b mutant mice, we find that TRA2B depletion results in apoptosis of the neural progenitor cells as well as disorganization of the cortical plate. Thus, TRA2B is essential for proper development of the cerebral cortex.

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