

P049 Administration of anti-testican antibody in the cerebrospinal fluid increases neural cell death in the developing mouse cerebral cortex

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There has been considerable recent progress in understanding the processes involved in cerebral cortical development. The central nervous system of vertebrates originates from neuroepithelial cells located within the pseudoepithelial germinal epithelium. A crucial issue in neural stem cell studies is the investigation of signals and mechanisms that regulate neural stem or progenitor cell survival and proliferation. Testican is an important extracellular proteoglycan in the brain. The role of testican in the developing brain is unknown. In this study, the effects of anti-testican antibody on neural cell death in the mouse cerebral cortex have been investigated. Using TUNEL, it was shown that the injection of anti-testican antibody into the cisterna magnum of mouse pups increased the number of neural cell deaths and resulted in thinning of the cerebral cortex compared with a control group. It is concluded that endogenous testican is essential for cortical cell survival in the cerebral cortex of mouse. Moreover, this method may be applied to the other factors and different central nervous system regions, allowing identification of molecules and signals involved in neural cell survival.