P2.30.

Immunohistochemical investigation of the developing subventricular zone situated in the lateral ventricle in rat brain

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The subventricular zone (SVZ) of the lateral ventricle (LV) belongs to the few brain regions where neurogenesis takes place in adulthood. Over the last decade growing number of publications focused on the cellular composition of this territory, the course of neurogenesis and the arrangement of migratory routes. However, limited information is available about the development of this thin but highly organized region. Present study investigates the temporospatial appearance of different cell populations and their phases of maturation along the LV by immunohistochemical detection of intermediate filaments (i.e. nestin, vimentin, GFAP) between embryonic day (E) 12 and postnatal day (P) 60. In the middle of the embryonic period (E12-16) the ventricular zone (VZ) was composed of nestin- and vimentin-immunopostive radial glial perikarya that are the primary source of the ongoing neuro- and gliogenesis. The GFAP-ip radial glia appeared between E17-18 around the interventricular foramen and the dorsal part of the third ventricle. The nestin disappeared from the VZ between P4 -P8 and later it remained characteristic of the lateral SVZ. The vimentin disappeared from the SVZ between P4-P8 and afterwards it became restricted to the VZ except of the dorsolateral SVZ and the rostral migratory stream. Based on our observations the distribution of nestin and vimentin becomes inverse after birth with the exception of the lateral SVZ where similar to the embryonic period they occur together.