Secretion of nerve growth factor by cultured cells of the rat aorta.
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Cultures of smooth muscle cells and of fibroblasts from the rat aorta were tested for the capacity to synthesize and secrete nerve growth factor (NGF). Serum-free conditioned medium from both cell culture types contained NGF detectable by a dissociated sympathetic ganglion bioassay, a competitive receptor binding assay, and a non-competitive two-site radioimmunoassay. NGF synthesis was further demonstrated by the observation that smooth muscle cells incorporated ^{3}H-labeled amino acids into protein which was specifically precipitated by anti-NGF antiserum. Gel filtration chromatography of dialyzed and concentrated conditioned medium revealed that most of the NGF biological and antigenic activity was associated with a species having a molecular weight greater than 80,000. Medium conditioned by aortic smooth muscle cells contained, in addition to NGF, nondialyzable material which inhibited the bioassay response to NGF and material which enhanced the bioassay response to NGF.

"Neuroepithelial alterations in the Splotch mutant embryo"
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The Splotch gene produces defects of neuroepithelial (NE) development ranging from neural tube closure anomalies (Sp/Sp embryos) to pigmentation defecits (Sp/+ embryos) following failure of neural crest derivatives to migrate. In the current study, NE development in Splotch embryos was examined using SEM and TEM.

Unlike normal littermates that had developed 24-26 somites and had completed neural tube closure by the 10th day of gestation, Sp/Sp embryos exhibited extensive neural tube closure defects of the hindbrain (15/108 embryos) or posterior neuropore (2/108). The NE of littermate controls exhibited its characteristic radial alignment. Interphase cells were elongated and contacted both luminal and basal surfaces of the NE. However, in Sp/Sp embryos, apical cell processes often made lateral progress across adjacent NE cells. Intercellular space was increased and there were numerous ectopic cell processes in these regions.

Current studies are in progress to examine the possible role of the cytoskeleton or underlying basal lamina of the NE in the production of these anomalies.

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Properties of γ-glutamyltransferase in developing brain
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The activity and properties of brain γ-glutamyltransferase (EC 2.3.2.2.) was studied in 7-, 14- and 90-day-old rats. The enzyme activity was highest in the pons-medulla and lowest in the cerebellum in each age group. The activity of glycylglycine, 10 protein amino acids, GABA and taurine as acceptor of the γ-glutamyl group was studied with 7-day-old and adult rats. The best acceptors were glycylglycine, lysine and methionine and the poorest ones taurine, valine and isoleucine. The relative acceptor activity of lysine changes most during development. K_m for γ-glutamyl-p-nitroanilide with glycylglycine was about 3 mmol/l in all experimental groups. It did not change during development but V increased about fivefold in all brain areas studied. Potassium and magnesium ions did not have any measurable effect on the enzyme activity but sodium ions were slightly stimulatory.