Autoradiographic study of the development of the neostriatum in the rabbit

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Autoradiographic labelling has been employed to analyze the morphogenesis of the neostriatum. Pregnant rabbits received a single intraperitoneal injection of tritiated thymidine at different stages of gestation. Careful microscopical observation of the autoradiographs shows that cellular components of the neostriatum originate between days 15 and 18 of the intrauterine life from a layer of proliferating matrix cells that lies on the floor of the anterior part of the lateral ventricle (ganglionic eminence). From this proliferating layer, precursor cells migrate outwards to reach the developing neostriatum in a sequential fashion according to two gradients of histogenesis. Thus, it was found that neurons formed at early stages occupy a ventromedial position in the neostriatum, while those formed al later stages occupy a dorsolateral position (ventromedial to dorsolateral gradient). Furthermore, the present study indicates that the rostral regions of the neostriatum arise somewhat later t