

Evolutionary origins of the reptilian brain: The question of putative homologues of dorsal ventricular ridge - An overview and proposal

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The reptilian brain is characterized by a structure that bulges into the lateral ventricle, called dorsal ventricular ridge (DVR). The DVR was originally considered to be a part of the basal ganglia, although more recent studies indicate that it may correspond to the dorsal part of the hemisphere.

The anterior portion of the DVR has several connectional and functional similarities with parts of the mammalian neocortex, for which reason it has been claimed that the two structures can be considered as homologues. In this article I review the evidence supporting and refuting homology of the DVR with different telencephalic structures of mammals, concluding that it is still early to unequivocally ascribe structural correspondences between the different components in the two vertebrate classes. However, a way out of the problem is suggested by comparing the embryonic position of DVR with that of lateral cortex in the reptilian hemisphere. The lateral cortex is considered to be quite compara