

Morphologic and immunohistochemical organization of the human habenular complex

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The habenular complex (HbCpx) is a phylogenetically conserved brain structure located in the epithalamus of vertebrates. Despite its fundamental role in decision-making processes and the proposed link between habenular dysfunction and neuropsychiatric conditions, little is known about the structural and functional organization of the HbCpx in humans. The goal of this study was thus to provide a first systematic morphologic and immunohistochemical analysis of the human HbCpx to begin dissecting its nuclear and subnuclear organization. Our results confirmed that the human HbCpx is subdivided into medial (MHb) and lateral (LHb) nuclei, each showing a large degree of intranuclear morphologic heterogeneity. Analysis of serially stained sections using a combination of morphologic and immunohistochemical criteria allowed the distinction of five subnuclei in both the MHb and LHb. Overall, the observed subnuclear organization of the MHb in humans resembles the organization of subnuclei in the M