



**FIGURE 1 |** Anatomy of the LC-NE system. (A) Anatomy of the outputs originating from the LC nucleus in human and mouse. Shaded areas indicate major sub-regions that potentially send input to LC. In this illustration, we have assumed that input regions identified in mouse are similar in humans (B) Distal inputs to LC-NE neurons obtained by retrograde tracing using rabies virus targeted at LC-NE neurons in mice. Input regions are grouped by: cortex (CTX), striatum (STR), pallidum (PAL), hypothalamus (HY), amygdala (AMY), midbrain (MB), medulla (MY), and cerebellum (CB). The thickness of each line represents the strength of the input from each region. Input strength was calculated by counting the number of cells retrogradely labeled in a specific area and dividing it by the total number of retrogradely labeled neurons. Regions providing less than 0.5% of inputs were left out of this diagram. Local inputs from the pons were also excluded. PFC, prefrontal cortex; MO, motor area; SS, somatosensory area; Acb, nucleus accumbens; CP, caudoputamen; BST, bed nucleus of stria terminalis; MS/NDB, medial septal/diagonal band nucleus; MPO, medial preoptic area; DMH/PVH, dorsomedial/paraventricular nucleus; LHA, lateral hypothalamic area; ZI, zona incerta; PSTN, paraventricular nucleus; CEA, central amygdala; SNc, substantia nigra; MRN, midbrain reticular nucleus; IPN, interpeduncular nucleus; PAG, periaqueductal gray; SC, superior colliculus; IC, inferior colliculus; PRP, nucleus prepositus; IRN, intermediate reticular nucleus; GRN, gigantocellular reticular nucleus; SPV, spinal nucleus of the trigeminal; CBX, cerebellar cortex; and CBN, cerebellar nuclei. Data in (B) from Breton-Provencher and Sur (2019) ...

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