P86.-5-HT2a receptor in mPFC controls context-guided reconsolidation of long- term object memory in perirhinal cortex

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The object recognition memory retrieval is a complex process that required the interaction of multiples structures. It has been proposed that mPFC interacts with the hippocampus (HIP) during contextual-guided versions of the spontaneous object recognition paradigm. Using a pharmacological disconnection experiment, we have shown that mPFC 5-HT2aR modulation and HIP interacts in an ipsilateral way during the resolution of an object-in-context recognition memory task. Since the information regarding the identity of the object could be stored in other structures such as the perirhinal cortex (PRH) then, the mPFC-HIP interaction could control the reactivation/reconsolidation in the PRH. To test this idea, we infused a 5-Ht2aR antagonist (MDL) in mPFC before the reactivation phase and immediately after a protein synthesis inhibitor (EME) in the PRH or dorsal dHIP. We also evaluate the interaction between the ventral hippocampus (vHIP) and the mPFC using a disconnection approach. We infused MDL in mPFC and muscimol in the vHIP before the retrieval and EME in the PRH after the reactivation session. We found that blocking 5-HT2aR signaling in the mPFC affects the reconsolidation in the PRH but not in the dHIP. In the disconnection experiment, only contralateral infusions made memories for both objects susceptible to the action of EME. Our results suggest that the interaction between mPFC 5-HT2a modulation and HIP activity controls the reconsolidation of object memory traces in PRH.