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DISTRIBUTION OF LEPTIN RECEPTOR-EXPRESSING CELLS IN VARIOUS REGIONS OF MOUSE BRAIN

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Distribution of Leptin Receptor-Expressing Cells in Various Regions of Mouse Brain

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ABSTRACT

A particular hormone that is linked to depression is leptin. By marking this hormone's receptors in different parts of the brain can allow for discovering new areas possibly tied to depression. There has been extensive research done explaining that the hippocampus and the prefrontal cortex are prominent regions where leptin receptors (Lep-R) are present. In a perfect world, identifying regions of leptin receptor would involve immunohistochemistry but because antibodies non-specifically bind, this was not possible. As part of the experiment, Lep-R Cre transgenic mice were bred with Ai14 mice. With this procedure, the leptin receptor presence in different areas of the brain was observed. After sectioning the mice brains and studying them under the microscope, we found that there was a presence of these leptin receptors in the previously known areas of the hippocampus and prefrontal cortex. In the near future, further sectioning and imaging of other brain regions not previously implicated in depression will also be studied.

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