

Serotonin plays active role in the sexual preference of mice

March 25 2011, by Deborah Braconnier

(PhysOrg.com) -- In a recent study published in *Nature* by Yan Liu and Yun'ai Jiang at Beijing's National Institute of Biological Sciences, the connection between serotonin and sexual preference in mice is presented. Liu and Jiang caution however that these results come from a study in mice and there has been no connection to homosexuality in humans.

For this study, Liu and Kiang first bred [mice](#) whose brains were unable to respond to serotonin. These mice lacked the gene called *Lmxb1* which is needed to produce serotonin.

When placed in a cage with both male and female mice, these mice showed no preference towards either sex. When given a choice, these male mice would attempt to mount both sexes around 80 percent of the time. In a normal mouse, results show the percentage of female mounting to be 60 - 80, while the mounting of another male mouse at around 20 percent.

When these same mice were placed in a cage with straw bedding rubbed with the scent of both male and female genitals, they spent little time sniffing either, though the preference seemed to be geared toward the male scent.

The researchers repeated the same experiments with mice having a different genetic fault in the gene *Tph2*. This gene is responsible for aiding in the production of serotonin. These mice were also just as likely

to mount mice of both sexes and did not show a preference to the smells of either males or females.

In a final experiment, Liu and Kiang injected normal male mice with a chemical called pCPA which is designed to deplete serotonin levels. The results showed that within three days these normal mice showed the same results as those mice without serotonin.

The study concludes that [serotonin](#) signaling plays a major role in the male sexual preference of mice, showing for the first time a connection with a neurotransmitter in the [brain](#) and sexual preference. Liu and Kiang do reiterate that there is no connection, however, between the results shown in these mice to that of human sexual preference.

More information: Molecular regulation of sexual preference revealed by genetic studies of 5-HT in the brains of male mice, Yan Liu, Yun'ai Jiang, Yunxia Si, Ji-Young Kim, Zhou-Feng Chen & Yi Rao, *Nature* (2011) [doi:10.1038/nature09822](https://doi.org/10.1038/nature09822) , www.nature.com/nature/journal/...ull/nature09822.html

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