

Examination of left-right asymmetry in gustatory stimulus-induced brain activity in rat brain using fMRI

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The asymmetry between the hemispheres of the brain is particularly well known in humans. Language centers are unevenly distributed in the left hemisphere, and the right hemisphere is known to function primarily in spatial recognition. In addition, in animal species other than humans, reports on the asymmetry of neuronal structure due to changes in the expression level of glutamate receptor-expressing neurons in the mouse hippocampus, and the difference in symptom expression by behavioral experiments using unilateral hippocampal rats there is. However, since the dominant brain has traditionally been negative in rodents, it is not clear that there is a left-right difference in brain activity in rodents. In this study, we analyzed changes in rat brain activity during taste stimulation by sweeteners using functional MRI. However, the experimental results were asymmetric. Imaging device magnetic field inhomogeneities may be related to this asymmetry. Therefore, we tried to detect changes in brain activity in the same individual by changing the direction of the rat by 180 degrees during the MRI imaging experiment. As a result, in this experiment, it was shown that even if the direction of the rat is changed, there is no effect on the brain activity detection site, and there is a difference in the brain activity of the rat.