Effects of selective PDE-2 inhibitor BAY60-7550 and PDE-9 inhibitor PF-04447943 on olfactory memory in Social Transmission of Food Preference (STFP) test in naive mice

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Phosphodiesterases (PDEs) are enzymes that hydrolyze cyclic AMP (cAMP) and/or cyclic GMP (cGMP) throughout the body, including the brain. Accumulating evidence indicates that the inhibition of phosphodiesterase (PDE) activity may be a particularly interesting mechanism for memory enhancement. PDE inhibitors present a novel therapeutic approach with which to arrest cognitive decline or to possibly reverse this decline with cognitive enhancement. The aim of this study was to investigate effects of BAY 60-7550, a PDE2 inhibitor and PF-04447943, a PDE9 inhibitor on olfactory memory in naive mice using social transmission of food preference (STFP) test. Hippocampus-dependent non-spatial olfactory memory was studied using the STFP. In the STFP test, the ratio of the weight of the cued food eaten and the total weight of food eaten was used as a measure of food preference. Higher percentage of cued food/total food eaten reflects better performance in olfactory memory. BAY60-7550 (1 and 3 mg/kg) and PF-04447943 (1 and 3 mg/kg) (n=12 per group) were administered intraperitoneally 30 and 60 minutes, respectively before the retention session of STFP test. One way Anova post hoc Tukey's test was used for the statistical analysis of the data. BAY 60-7550 and PF-04447943 significantly increased % cued food/total food eaten compared to the control group. BAY 60-7550 and PF-04447943 also decreased total food consumption compared to the control group but it was not significant. Our results confirm that BAY 60-7550 and PF-04447943 enhance olfactory memory of naive mice in the STFP test.

Biography
Furuzan Yildiz Akar has completed her PhD and Postdoctoral studies from Kocaeli University, School of Medicine, Turkey. Presently she is working as an Associate Professor at the Kocaeli University, School of Medicine. She has published more than 50 papers in english and has many poster presentations.

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