Galanin N-Terminal fragment (1-15) enhances the antidepressant effects of the 5-HT1A receptor agonist 8-OH-DPAT in the Forced Swimming Test.

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Galanin and Galanin (1-15) [GAL(1-15)] are implicated in anxiety- and depression related behaviors. Moreover, Galanin modulates 5-HT1A receptor (5-HT1AR) function at autorreceptor and postsynaptic level in the brain. In this study, we have analysed the ability of GAL(1-15) to modulate the effects of the 8-OH-DPAT agonist in the Forced Swimming Test (FST).

Groups of rats were assessed in the FST. In the first set of experiments, to evaluate the interactions of 8-OH-DPAT and GAL(1-15), rats received subcutaneously (s.c) the effective doses of 8-OH-DPAT (0.25mg/Kg) 60min before the test and intracerebroventricularly (icv) GAL(1-15)1nmol 15min before the tests alone or in combination. In the second set of experiments, groups of rats received s.c. 8-OH-DPAT (0.125mg/Kg), icv GAL(1-15) 1nmol and icv the GALR2 antagonist M871 3 nmol alone or in combination. The locomotor activity was analysed in the open field test.

GAL(1-15) 1nmol enhanced the antidepressant-like effects mediated by the effective dose of the 8-OH-DPAT. GAL(1-15) significantly decreased the immobility ($p<0.05$) and climbing ($p<0.05$) and increased the swimming ($p<0.01$) behaviour induced by an effective dose of 8-OH-DPAT (0.25mg/Kg) in FST. Moreover, after coadministration of GAL(1-15) and threshold dose of 8-OH-DPAT (0.125mg/Kg) a significant decreased appeared in immobility ($p<0.01$) and climbing ($p<0.01$) and increased the swimming behavior ($p<0.001$) vs 8-OH-DPAT group. Moreover, M871 blocked completely this interaction.

These results indicate that GAL(1-15) enhances the antidepressant effects induced by 8-OH-DPAT in the FST. These findings may give the basis for the development of novel therapeutic drugs.

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