GALANIN AND NEUROPEPTIDE Y Y1 RECEPTOR AGONIST COINJECTION INCREASES NEWBORN CELLS PROLIFERATION ON HIPPOCAMPAL DENTATE GYRUS IN RATS

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The hippocampus is a region in which neurogenesis persists throughout the lifespan in a wide variety of species including humans. Within the dentate gyrus of the hippocampus, the subgranular zone (SGZ) is maintained as a stem cell niche. We have previously shown that Galanin (GAL) interacts with Neuropeptide Y Y1 receptors (NPYY1R) in several regions of the central nervous system associated with mood and motivation. To examine the acute effects of GALR2/NPYY1R interactions on newborn cells proliferation we analyzed the effects of the intracerebroventricular (icv) of single injections with GAL and NPYY1 agonists or coadministered. Male Sprague-Dawley rats (n = 6-8 per group) were randomly assigned to the groups. Each group received i.c.v. injections of artificial Cerebro Spinal Fluid (aCSF), GAL or NPYY1R agonist [Leu31,Pro34]NPY alone or in combination. Intraperitoneal (ip) injections of exogenous cell DNA marker 5-bromo-2-deoxyuridine (BrdU) 50mg/Kg were made at 2 and 4 hours after icv injections and 24 hours later rats were anesthetized, transcardially perfused and the brains collected for immunostaining to evaluate cell proliferation. Coadministration of GAL and NPYY1R agonist increased BrdU-labeled cells located in the SGZ ($P<0,001$) compared with aCSF, GAL and the NPYY1R-mediated hippocampal cell proliferation, These results will contribute to a better knowledge of the potential role of GAL and NPY family in mediating neurogenic actions and may give the basis for

the therapeutic potential of targeting the GAL and NPY system in depressive disorders. Study supported by Proyecto Puente-Universidad de Málaga.