

# Leukaemia Inhibitory Factor Stimulates Proliferation of Olfactory Neuronal Progenitors via Inducible Nitric Oxide Synthase

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Neurogenesis continues in the adult brain and in the adult olfactory epithelium. The cytokine, leukaemia inhibitory factor and nitric oxide are both known to stimulate neuronal progenitor cell proliferation in the olfactory epithelium after injury. Our aim here was to determine whether these observations are independent, specifically, whether leukaemia inhibitory factor triggers neural precursor proliferation via the inducible nitric oxide synthase pathway. We evaluated the effects of leukaemia inhibitory factor on inducible form of nitric oxide synthase (iNOS) expression, and cell proliferation in olfactory epithelial cell cultures and olfactory neurosphere-derived cells. Leukaemia inhibitory factor induced expression of iNOS and increased cell proliferation. An iNOS inhibitor and an anti-leukaemia inhibitory factor receptor blocking antibody inhibited leukaemia inhibitory factor-induced cell proliferation, an effect that was reversed by a NO donor. Altogether, the results strongly su