

Acute Effects of Systemic Erythropoietin Injections on Carotid Body Chemosensory Activity Following Hypoxic and Hypercapnic Stimulation

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© 2018, Springer International Publishing AG, part of Springer Nature. The carotid body (CB) chemoreceptors sense changes in arterial blood gases. Upon stimulation CB chemoreceptors cells release one or more transmitters to excite sensory nerve fibers of the carotid sinus nerve. While several neurotransmitters have been described to contribute to the CB chemosensory process less is known about modulatory molecules. Recent data suggest that erythropoietin (Epo) is involved in the control of ventilation, and it has been shown that Epo receptor is constitutively expressed in the CB chemoreceptors, suggesting a possible role for Epo in regulation of CB function. Therefore, in the present study we aimed to determine whether exogenous applications of Epo modulate the hypoxic and hypercapnic CB chemosensory responses. Carotid sinus nerve discharge was recorded in-situ from anesthetized adult male and female Sprague Dawley rats (350 g, n = 8) before and after systemic administration of Epo (20