

Public Abstract

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Department:Physiology (Medicine)

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Title:PHENOTYPICALLY DIFFERENT CELLS IN THE NUCLEUS OF THE SOLITARY TRACT: EXPRESSION OF GROUP I METABOTROPIC GLUTAMATE RECEPTORS AND ACTIVATION BY BAROREFLEXES

Modulation and integration of visceral and central afferent information occurs in the nucleus of the solitary tract (NTS). The NTS is a heterogeneous nuclear region that contains afferent terminals, interneurons, and multiple synaptic receptors that process information before exiting the NTS to multiple nuclear regions within the brain. One such efferent pathway is to the caudal ventrolateral medulla (CVLM), which serves as the second central nuclear region of the arterial baroreflex. The exact nature of the modulation of the arterial baroreflex at the level of the NTS is still unknown. The studies presented here further clarify the role of Group I metabotropic glutamate receptors (mGluRs) on GABAergic, nitroxicergic and catecholaminergic neurons and neurons the project from the NTS to the CVLM. Additionally, we examine GABAergic, nitroxicergic and catecholaminergic neurons and neurons the project from the NTS to the CVLM activated in the NTS through acute hypertension and hypotension. Finally, we proposed a study to examine the expression of Group I mGluRs on neurons activated by hypertension and hypotension and neurons that project the NTS from the CVLM. These studies suggest that Group I mGluRs are preferentially expressed on CVLM projecting neurons, and that hypertension and hypotension activate separate populations of neuron in the NTS.