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Effects of centrally administered glucagon-like peptide-2 on blood pressure and barosensitive neurons in spontaneously hypertensive rats

Sachie Sasaki-Hamada^{1,2}, Koji Narusawa¹, Ryuji Nakamura¹, Hitoshi Ishibashi², Jun-Ichiro Oka^{1,*} okaji@rs.noda.tus.ac.jp

¹Laboratory of Pharmacology, Faculty of Pharmaceutical Sciences, Tokyo University of Science, 2641 Yamazaki, Noda, Chiba 278-8510, Japan

²Department of Physiology, School of Allied Health Sciences, Kitasato University, Sagami-hara 252-0373, Japan

*Corresponding author at: Jun-Ichiro Oka, PhD.

Laboratory of Pharmacology, Faculty of Pharmaceutical Sciences, Tokyo University of Science, 2641 Yamazaki, Noda, Chiba 278-8510, Japan.

Abstract

The central administration of glucagon-like peptide-2 (GLP-2) decreases blood pressure in rats. In the present study, we investigated the hypotensive effects of GLP-2 using spontaneously hypertensive rats (SHRs), an animal model of hypertension. The central administration of GLP-2 (0.6 μ g) decreased mean arterial pressure (MAP) in SHRs ($-24.1 \pm 4.5\%$; $P < 0.05$), but not in normotensive Wistar-Kyoto (WKY) rats ($-10.6 \pm 7.4\%$; $P > 0.05$), whereas GLP-2 (6 μ g) decreased MAP in WKY rats ($-23.5 \pm 4.2\%$; $P < 0.05$) and SHRs ($-46.7 \pm 11.6\%$; $P < 0.01$) under anesthesia with urethane and α -chloralose. Histological analyses revealed that the central administration of GLP-2 (6 μ g) induced *Fos* immunoreactivity (*Fos*-IR) in the hypothalamic and medullary areas in WKY rats and SHRs. However, the distribution of *Fos*-IR in GABAergic neurons in the rostral ventrolateral medulla (RVLM) differed between WKY rats and SHRs. GLP-2 directly modulated the

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