

Expression of GHS-R1 in the Stomach of Male and Female Rats after High-Fat, High-Carbohydrate Diet

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The aim of our work was to investigate the expression of ghrelin receptor (GHS-R1) in the stomach of dietary-manipulated rats by high-fat-high-carbohydrate-diet (HFHCD). Wistar rats (5 male, 5 female) were fed HFHCD for 16 weeks. Control rats (5 male, 5 female) were fed with standard rat chew for the same period of time. Metabolic control was determined by measuring body weight gain and BMI. Immunohistochemical study was performed on the stomach of both groups with primary ghrelin receptor GHS-R1 antibody. Results: We found positive expression of GHS-R1 in the stomach fundus and antral glandular cells of the experimental rats. The reaction had moderate and high intensity in single and clusters of cells. HFHCD activates the expression of GHS-R1 in the gastric mucosa in both sexes. GHS-R1 presence indicates the ability of ghrelin to affect the secretory activity of the ghrelin-producing cells in paracrine/autocrine way and allow for autonomous regulation of gastric secretion, different from other hormonal and nerve pathways.

Key words: ghrelin, GHS-R1, stomach, high-fat-high-carbohydrate diet, rats