Uroguanylin is a Prime Candidate for an Intestinal Natriuretic Factor

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Summary

Uroguanylin, a new member of the guanylin peptide family, acts on guanylyl cyclase C to regulate intestinal and renal fluid and electrolyte transport through the second messenger, cyclic GMP. We have clarified tissue distribution of uroguanylin, its cellular source, structure-bioactiviy relationship, cDNA and geneme sequences, gene expression in the tissue, chromosomal localization, and pathophysiological implications. Uroguanylin has a widespread tissue distribution and is located in cells which function in an endocrine, paracine and/or luminocrine (luminal secretion) fashion. Urogaunylin receptor is also expressed in the kidney. The biosynthesis and secretion of uroguanylin are stimulated by oral NaCl load. Uroguanylin is synthesized in human heart and its plasma level increased in the patients with heart failure. Uroguanylin may link the intestine and kidney in an endocrine pathway for the control of renal salt excretion.