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. Oral salt loading increased the biosynthesis and secretion of uroguanylin in the intestine as well as the urinary excretion of cyclic GMP and sodium chloride. The uroguanylin injection into the renal artery enhanced natriuesis. Uroguanylin therefore is a prime candidate for a substance that could link the intestine and kidney in an endocrine pathway that regulates renal salt metabolism.