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Kidney Injury Molecule-1 (KIM-1), a Putative Epithelial Cell Adhesion Molecule Containing a Novel Immunoglobulin Domain, Is Up-regulated in Renal Cells after Injury*

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Abstract

We report the identification of rat and human cDNAs for a type 1 membrane protein that contains a novel six-cysteine immunoglobulin-like domain and a mucin domain; it is named kidney injury molecule-1 (KIM-1). Structurally, KIM-1 is a member of the

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immunoglobulin gene superfamily most reminiscent of mucosal addressin cell adhesion molecule 1 (MAdCAM-1). Human KIM-1 exhibits homology to a monkey gene, hepatitis A virus cell receptor 1 (HAVcr-1), which was identified recently as a receptor for the hepatitis A virus. KIM-1 mRNA and protein are expressed at a low level in normal kidney but are increased dramatically in postischemic kidney. *In situ* hybridization and immunohistochemistry revealed that KIM-1 is expressed in proliferating bromodeoxyuridine-positive and dedifferentiated vimentin-positive epithelial cells in regenerating proximal tubules. Structure and expression data suggest that KIM-1 is an epithelial cell adhesion molecule up-regulated in the cells, which are dedifferentiated and undergoing replication. KIM-1 may play an important role in the restoration of the morphological integrity and function to postischemic kidney.

Footnotes

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The nucleotide sequence(s) reported in this paper has been submitted to the GenBank™/EMBL Data Bank with accession number(s) [AF035963](#).

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