

## GUCA2A

### Recombinant Human Proguanylin

<b>Catalog No.</b>	CRP146A CRP146B CRP146C	<b>Quantity:</b>	2 µg 10 µg 1.0 mg
<b>Alternate Names:</b>	Guanylin Precursor, Guanylate cyclase activator 2A, Guanylate cyclase-activating protein 1, GCAP-1, STARA.		
<b>Description:</b>	<p>Heat-stable enterotoxins (STa) are small, cysteine-rich peptides secreted by <i>E. coli</i> that are able to induce diarrhea through the stimulation of an intestine-specific receptor-guanylyl cyclase known as STaR. Binding of STa to STaR induces a dramatic increase in the cGMP content of the cell; the increase, in turn, inhibits salt absorption and stimulates chloride secretion. This imbalance of ions is accompanied by a massive accumulation of water in the gut that gives rise to the diarrhea and dehydration characteristic of enterotoxin activity. The identification of a receptor for STa on intestinal brush border membranes suggested the existence of an endogenous activator, described guanylin, a 15-amino acid peptide purified from rat small intestine, as a potential ligand for the STaR. This peptide shares sequence similarity with STa; see also uroguanylin. The molecular cloning of the human and mouse cDNAs encoding guanylin was reported. The sequences demonstrated that guanylin is present at the C-terminal end of a larger precursor protein. Expression in mammalian cells indicated that the 94 aa proguanylin is inactive. The biologically active guanylin can be released by either chemical or enzymatic treatment of proguanylin. Northern blot analysis and in situ hybridization showed that expression of guanylin mRNA is restricted to cells of the intestinal epithelium, specifically the Paneth cells at the base of the small intestinal crypts. These results demonstrate that guanylin is an endogenous activator of STaR. The hormonal form of guanylin is a 94-amino acid peptide with a molecular mass of 10.3 kDa. Guanylin is synthesized by gut enterochromaffin cells as a prohormone of 115 amino acids and is processed to the molecular form of 94 amino acids circulating in the blood.</p> <p>Recombinant Human Proguanylin is a 96 aa protein consisting of the 94 residues of the human proguanylin and 2 additional amino acid residues.</p>		
<b>Physical Appearance:</b>	Sterile Filtered White lyophilized (freeze-dried) powder.		
<b>GenelD:</b>	2980		
<b>Source:</b>	<i>E. coli</i>		
<b>Molecular Weight:</b>	11 kDa protein containing 96 amino acid residues of the human proguanylin and 2 additional amino acid residues (underlined).		
<b>Formulation:</b>	Lyophilized (freeze-dried) powder from a sterile filtered 0.5 mg/ml solution of protein in distilled water.		
<b>Purification Method:</b>	Three-step procedure using IMAC and size exclusion chromatography before and after refolding.		
<b>Purity:</b>	> 95.0% as determined by SDS-PAGE.		



- Specificity:** Recombinant Human Proguanylin is 100% homologous with human proguanylin.
- Amino Acid Sequence:** GPVTVQDGNF SFSLESVKKL KDLQEPQEPR VGKLRNFAP I PGEPVVPILC  
SNPNFPEELK PLCKEPNAQE ILQRLEEIAE DPGTCEICAY AACTGC.
- Reconstitution:** Add 0.2 ml of distilled water and let the lyophilized pellet dissolve completely.
- Storage & Stability:** Store lyophilized protein at -20°C. Aliquot the product after reconstitution. Reconstituted protein can be stored at 4°C for a limited period of time. The lyophilized protein remains stable until the expiration date when stored at -20°C. **Avoid repeated freeze-thaw cycles.**
- Applications:** Western blotting.

**NOT FOR HUMAN USE. FOR RESEARCH ONLY. NOT FOR DIAGNOSTIC OR THERAPEUTIC USE.**

