

Intrinsic Factor Protein, Human, Recombinant (His)

General Information

Synonyms:	IF;IFMH;gastric intrinsic factor (vitamin B synthesis);INF;TCN3
Protein Construction:	A DNA sequence encoding the human GIF (P27352-1) (Met1-Tyr417) was expressed with a polyhistidine tag at the C-terminus. Predicted N terminal: Ser 19
Species:	Human
Expression Host:	HEK293 Cells
Accession:	P27352-1
Molecular Weight:	44.8 kDa (predicted); 49 kDa (reducing conditions)

QC Testing

Biological Activity:	Activity testing is in progress. It is theoretically active, but we cannot guarantee it. If you require protein activity, we recommend choosing the eukaryotic expression version first.
Purity:	> 95 % as determined by SDS-PAGE
Endotoxin:	< 1.0 EU/μg of the protein as determined by the LAL method.
Formulation:	Lyophilized from a solution filtered through a 0.22 μm filter, containing PBS, pH 7.4. Typically, a mixture containing 5% to 8% trehalose, mannitol, and 0.01% Tween 80 is incorporated as a protective agent before lyophilization.

Preparation and Storage

Reconstitution:	Reconstituted with sterile deionized water to 0.25 mg/mL. Reconstitution conditions may vary depending on the lot.
Stability & Storage:	It is recommended to store recombinant proteins at -20°C to -80°C for future use. Lyophilized powders can be stably stored for over 12 months, while liquid products can be stored for 6-12 months at -80°C. For reconstituted protein solutions, the solution can be stored at -20°C to -80°C for at least 3 months. Please avoid multiple freeze-thaw cycles and store products in aliquots. <small>Actual storage temperature shall be subject to the COA.</small>
Shipping:	In general, lyophilized powders are shipped with blue ice, while solutions are shipped with dry ice.

Protein Background

Gastric intrinsic factor, also known as GIF, belongs to the of the cobalamin transport protein family. It is a glycoprotein produced by the parietal cells of the stomach. Gastric intrinsic factor plays a key role in the absorption of vitamin B12 on in the small intestine. Vitamin B12 binds to haptocorrin after entry into the stomach. The resulting complex enters the duodenum, where pancreatic enzymes digest haptocorrin. In the less acidic environment of the small intestine, B12 can then bind to gastric intrinsic factor. This new complex travels to

the ileum, where special epithelial cells endocytose them. Inside the cell, B12 dissociates once again and binds to another protein, transcobalamin II. The new complex can exit the epithelial cells to enter the liver.

Reference

Gerdin AK. (2010) The Sanger Mouse Genetics Programme: high throughput characterisation of knockout mice. *Acta Ophthalmologica*. 88:925-7.

AU - Berlin H, et al. (1968) ORAL TREATMENT OF PERNICIOUS ANEMIA WITH HIGH DOSES OF VITAMIN B12 WITHOUT INTRINSIC FACTOR. *Acta Medica Scandinavica*. 184(1-6):247-58.

Hewitt JE, et al. (1991) Human gastric intrinsic factor: characterization of cDNA and genomic clones and localization to human chromosome 1 *Genomics*. 10(2):432-40.

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