# Recombinant Human HGF (NS0 Expressed)

Catalog Number: 11352-HG

## DESCRIPTION

| | |
|---|---|
| **Source** | Mouse myeloma cell line, NS0-derived human HGF protein<br>Gln32-Arg494 α chain & Val495-Ser728 β chain<br>Accession # P14210.2 |
| **N-terminal Sequence Analysis** | α chain: Gln32; deduced from Arg 33 after deblocking<br>β chain; Val495 |
| **Predicted Molecular Mass** | 54 kDa (α chain) & 26 kDa (β chain) |

## SPECIFICATIONS

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|---|---|
| **SDS-PAGE** | 30-40 kDa (β chain) & 54-66 kDa (α chain), under reducing conditions. |
| **Activity** | Measured by its ability to induce IL-11 secretion by Saos-2 human osteosarcoma cells. Hjertner, O. *et al.* (1999) Blood **94**:3883.<br>The $ED_{50}$ for this effect is equal to or less than 4.00 ng/mL. |
| **Endotoxin Level** | <0.50 EU per 1 µg of the protein by the LAL method. |
| **Purity** | >95%, by SDS-PAGE visualized with Silver Staining and quantitative densitometry by Coomassie® Blue Staining. |
| **Formulation** | Lyophilized from a 0.2 µm filtered solution in PBS and NaCl with Trehalose. See Certificate of Analysis for details. |

## PREPARATION AND STORAGE

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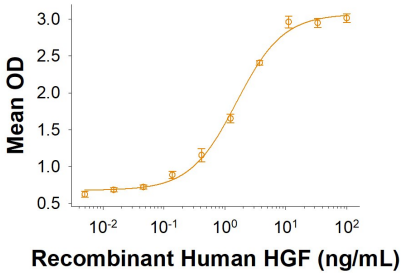
|---|---|
| **Reconstitution** | Reconstitute 10 µg size at 100 µg/mL in PBS. Reconstitute all the other sizes at 200 µg/mL in PBS. |
| **Shipping** | The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below. |
| **Stability & Storage** | **Use a manual defrost freezer and avoid repeated freeze-thaw cycles.**<br>• 12 months from date of receipt, -20 to -70 °C as supplied.<br>• 1 month, 2 to 8 °C under sterile conditions after reconstitution.<br>• 3 months, -20 to -70 °C under sterile conditions after reconstitution. |

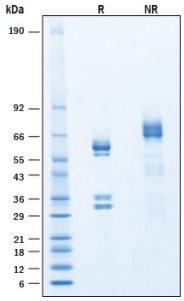
## DATA

### Bioactivity




**Recombinant Human HGF (NSO Expressed) Protein Bioactivity.** Recombinant Human HGF induces IL-11 secretion by Saos-2 human osteosarcoma cells. The $ED_{50}$ for this effect is equal to or less than 4.00 ng/mL.

### SDS-PAGE




**Recombinant Human HGF (NSO Expressed) Protein SDS-PAGE.** 2 µg/lane of Recombinant Human HGF (NSO Expressed) Protein (Catalog # 11352-HG) was resolved with SDS-PAGE under reducing (R) and non-reducing (NR) conditions and visualized by Coomassie® Blue staining, showing bands at 30-40 kDa (β chain) & 54-66 kDa (α chain), under reducing conditions.



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## BACKGROUND

HGF, also known as scatter factor and hepatopoietin A, is a pleiotropic protein in the plasminogen subfamily of S1 peptidases. It is a multidomain molecule that includes an N-terminal PAN/APPLE-like domain, four Kringle domains, and a serine proteinase-like domain that has no detectable protease activity (1-5). Human HGF is secreted as an inactive 728 amino acid (aa) single chain propeptide. It is cleaved after the fourth Kringle domain by a serine protease to form bioactive disulfide-linked HGF with a 60 kDa α and 30 kDa β chain. Alternate splicing generates human HGF isoforms that lack the proteinase-like domain and different numbers of the Kringle domains. Human HGF shares 91%-94% aa sequence identity with bovine, canine, feline, mouse, and rat HGF. HGF binds heparan-sulfate proteoglycans and the widely expressed receptor tyrosine kinase, HGF R/c-MET (6, 7). HGF-dependent c-MET activation is implicated in the development of many human cancers (8). HGF regulates epithelial morphogenesis by inducing cell scattering and branching tubulogenesis (9, 10). HGF induces the up-regulation of integrin α2β1 in epithelial cells by a selective increase in α2 gene transcription (11). This integrin serves as a collagen I receptor, and its blockade disrupts epithelial cell branching tubulogenesis (11, 12). HGF can also alter epithelium morphology by the induction of nectin-1α ectodomain shedding, an adhesion protein component of adherens junctions (13). In the thyroid, HGF induces the proliferation, motility, and loss of differentiation markers of thyrocytes and inhibits TSH-stimulated iodine uptake (14). HGF promotes the motility of cardiac stem cells in damaged myocardium (15).

**References:**

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