

Recombinant Human IGHG4 Protein

For Research Use Only

1. Basic Product Information

Catalog No.: REP50482

Size: 10ug, 100ug

Protein Name: Immunoglobulin heavy constant gamma 4 (Ig gamma-4 chain C region)

Synonym: IGHG4

UniProt ID: P01861

UniProt Link: www.uniprot.org/uniprotkb/P01861/entry

Species Source: Human

Expression System: HEK293T eukaryotic cell expression system Sequence

Length: 396 AA

Molecular Weight: 44 KD

Protein Tag: C-terminal His6

2. Amino Acid Sequence

ASTKGPSVFPLAPCSRSTSESTAALGCLVKDYFPEPVTVSWNSGALTSGVHTFPAVLQSSGLYSLSS
VVTVPSSSLGTQTYTCNVDPKPSNTKVDKRVEVKYGPPCPSCAPEFLGGPSVFLFPPKPKDTLMIS
RTPEVTCVVVDVSDQEDPEVQFNWYVDGVEVHNAKTKPREEQFNSTYRVSVLTVHLQDWLNGKEY
KCKVSNKGLPSSIEKTISKAKGQPREPQVYTLPPSQEEMTKNQVSLTCLVKGFYPSDIAVEWESNGQ
PENNYKTTTPVLDSDGSFFLYSRLTVDKSRWQEGNVFSCSVMHEALHNHYTQKSLSLSLELQLEES
CAEAQDGLDGLWTTITIFITLFLSVCYSATVTFFKVKWIFSSVVDLKQTIVPDYRNMIRQGA

3. Buffer Composition

Liquid format: PBS-based buffer containing 50% glycerol. Glycerol concentration can be customized upon customer request; please state special requirements when placing your order.

Lyophilized format: Buffer before lyophilization is PBS supplemented with 6% trehalose.

4. Storage Conditions

Upon receipt, store the product at -20 °C or -80 °C. Aliquot the product for on-demand use to preserve protein activity and prevent denaturation and inactivation caused by repeated freeze-thaw cycles.

5. Product Description

This product is recombinant Immunoglobulin heavy constant gamma 4 (Ig gamma-4 chain C region) produced using the HEK293T eukaryotic cell expression system. It is suitable for in-vitro functional assays, protein-protein interaction studies, antibody preparation and other biomedical research applications.

Protein Function: Constant region of immunoglobulin (Ig) heavy chains. Igs are membrane-bound or secreted glycoproteins produced by B lymphocytes. In the recognition phase of humoral immunity, the membrane-bound Igs serve as receptors, which upon binding to a specific antigen trigger the clonal expansion and differentiation of B lymphocytes into Ig-secreting plasma cells. Secreted Igs known as antibodies mediate the effector phase of humoral immunity by blocking the interaction of infectious antigens with cellular receptors (via the antigen-binding region) and eliciting effector mechanisms that lead to pathogen neutralization (via the constant region) (PubMed:17576170, PubMed:20176268, PubMed:22158414). The antigen-binding region is formed by the variable domain of one heavy chain paired with the variable domain of its associated light chain. Each Ig molecule has two antigen-binding sites with remarkable affinity for a particular antigen due to V-(D)-J rearrangement, somatic hypermutations and affinity maturation of the variable domains upon antigen exposure (PubMed:17576170, PubMed:20176268, PubMed:22158414). The constant region defines the Ig isotype that perform distinct sets of effector functions. B cells diversify and rearrange their Ig constant regions through class-switch recombination, a process by which the constant region is switched from one Ig isotype to another, namely from IgM and IgD to IgG, IgA and IgE (PubMed:17576170, PubMed:20176268, PubMed:22158414). The constant region interacts (via the fragment crystallizable, Fc) with the Fc receptors on innate immune cells to mediate humoral effector functions. Ig gamma-4 (IgG4) isotype does not elicit antibody-dependent cellular cytotoxicity (ADCC) or complement-dependent cytotoxicity (CDC). Instead it is likely involved in immune tolerance mechanisms to allergens and parasites either by blocking IgE-antigen complex formation or by directly inhibiting mast cell degranulation through Fc receptor signaling. In the context of tumorigenesis, it may participate in immunosuppressive mechanisms.

Subcellular Localization: [Isoform 1]: Secreted .; [Isoform 2]: Cell membrane ; Single-pass membrane protein .

6. Notes

- Avoid repeated freeze-thaw cycles to maintain protein stability and biological activity.
- Please specify special buffer- composition requirements at the time of order placement.
- For research use only. Not intended for clinical diagnosis, therapeutic use or commercial manufacturing.