

Recombinant Rat HAVR2 Protein

For Research Use Only

1. Basic Product Information

Catalog No.: REP52261

Size: 10ug, 100ug

Protein Name: Hepatitis A virus cellular receptor 2 homolog (HAVcr-2) (T-cell immunoglobulin and mucin domain-containing protein 3) (TIMD-3) (T-cell immunoglobulin mucin receptor 3) (TIM-3) (T-cell membrane protein 3) (CD antigen CD366)

Synonym: Havcr2, Tim3, Timd3

UniProt ID: P0C0K5

UniProt Link: www.uniprot.org/uniprotkb/P0C0K5/entry

Species Source: Rat

Expression System: HEK293T eukaryotic cell expression system Sequence

Length: 282 AA

Molecular Weight: 31 KD

Protein Tag: C-terminal His6

2. Amino Acid Sequence

MFSWLPFSCALLLLQPLPARSLENAYTAEVGKNAYLPCSYTVPAPGTLVPICWGKGSCPLLQCASVV
LRTDETNVTYRKSRRYQLKGNFYKGDMSLTIKNVTLADSGTYCCRIQFPGPMNDEKLELKLSITEPAK
VIPAGTAHGDSTTASPRTLTTEGSGSETQTLVTLHDNNGTKISTWADEIKDSGETIRTAVHIGVGVSA
GLALALILGVLILKWYSSKKKKLQDLSLITLANSPPGGLVNAGAGRIRSEENIYTIENIYEMENSNEY
CYVSSQQPS

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 Hepatitis A virus cellular receptor 2 homolog (HAVcr-2) (T-cell immunoglobulin and mucin domain-containing protein 3) (TIMD-3) (T-cell immunoglobulin mucin receptor 3) (TIM-3) (T-cell membrane protein 3) (CD antigen CD366) 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: Cell surface receptor implicated in modulating innate and adaptive immune responses. Generally accepted to have an inhibiting function. Reports on stimulating functions suggest that the activity may be influenced by the cellular context and/or the respective ligand. Regulates macrophage activation. Inhibits T-helper type 1 lymphocyte (Th1)-mediated auto- and alloimmune responses and promotes immunological tolerance. In CD8⁺ cells attenuates TCR-induced signaling, specifically by blocking NF-kappaB and NFAT promoter activities resulting in the loss of IL-2 secretion. The function may implicate its association with LCK proposed to impair phosphorylation of TCR subunits. In contrast, shown to activate TCR-induced signaling in T-cells probably implicating ZAP70, LCP2, LCK and FYN. Expressed on Treg cells can inhibit Th17 cell responses. Receptor for LGALS9. Binding to LGALS9 is believed to result in suppression of T-cell responses; the resulting apoptosis of antigen-specific cells may implicate HAVCR2 phosphorylation and disruption of its association with BAG6. Binding to LGALS9 is proposed to be involved in innate immune response to intracellular pathogens. Expressed on Th1 cells interacts with LGALS9 expressed on Mycobacterium tuberculosis-infected macrophages to stimulate antibactericidal activity including IL-1 beta secretion and to restrict intracellular bacterial growth. However, the function as receptor for LGALS9 has been challenged (By similarity). Also reported to enhance CD8⁺ T cell responses to an acute infection such as by *Listeria monocytogenes*. Receptor for phosphatidylserine (PtSer); PtSer-binding is calcium-dependent. May recognize PtSer on apoptotic cells leading to their phagocytosis. Mediates the engulfment of apoptotic cells by dendritic cells. Expressed on T-cells, promotes conjugation but not engulfment of apoptotic cells. Expressed on dendritic cells (DCs) positively regulates innate immune response and in synergy with Toll-like receptors promotes secretion of TNF. In tumor-infiltrating DCs suppresses nucleic acid-mediated innate immune response by interaction with HMGB1 and interfering with nucleic acid-sensing and trafficking of nucleic acids to endosomes. Can enhance mast cell production of Th2 cytokines IL-4, IL-6 and IL-13. Expressed on natural killer (NK) cells and acts as a coreceptor to enhance IFN-gamma production in response to LGALS9. In contrast, shown to suppress NK cell-mediated cytotoxicity. Negatively regulates NK cell function in LPS-induced endotoxic shock.

Subcellular Localization: Membrane ; Single-pass type I membrane protein . Cell junction .
Note=Localizes to the immunological synapse between CD8⁺ T-cells and target cells.

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.