TIM-4/TIMD-4 Protein, Mouse (HEK293, His)

Cat. No.:	HY-P77236
Synonyms:	T-cell immunoglobulin and mucin domain-containing protein 4; TIMD4; TIM4
Species:	Mouse
Source:	HEK293
Accession:	Q6U7R4/NP_848874.3 (A23-T279)
Gene ID:	276891
Molecular Weight:	60-70 kDa

PROPERTIES

Appearance	Lyophilized powder.
Formulation	Lyophilized from a 0.2 μm filtered solution of PBS, pH 7.4. Normally 5 % - 8 % trehalose, mannitol and 0.01% Tween 80 are added as protectants before lyophilization.
Endotoxin Level	<1 EU/μg, determined by LAL method.
Reconsititution	It is not recommended to reconstitute to a concentration less than 100 μg/mL in ddH_2O.
Storage & Stability	Stored at -20°C for 2 years. After reconstitution, it is stable at 4°C for 1 week or -20°C for longer (with carrier protein). It is recommended to freeze aliquots at -20°C or -80°C for extended storage.
Shipping	Room temperature in continental US; may vary elsewhere.

DESCRIPTION

Background	TIM-4/TIMD-4 Protein acts as a phosphatidylserine receptor with diverse roles in the immune response, participating in both the phagocytosis of apoptotic cells and the regulation of T-cell function. Its involvement in T-cell activation is bimodal, as it decreases the activation of naive T-cells by inducing cell cycle arrest while concurrently enhancing the proliferation of activated T-cells through the activation of AKT1 and ERK1/2 phosphorylations and subsequent signaling pathways. Additionally, TIM-4/TIMD-4 plays a pivotal role in efferocytosis, the process of phagocytosis of apoptotic cells, by directly binding to phosphatidylserine on apoptotic cells, thereby facilitating their engulfment by phagocytes. This function is distinctive, as other engulfment receptors like MERTK are more efficient in recognizing and mediating the ingestion of apoptotic cells. Furthermore, TIM-4/TIMD-4 promotes the autophagy process by suppressing NLRP3 inflammasome activity through the activation of the STK11/PRKAA1 pathway in a phosphatidylserine-dependent mechanism. The protein forms homodimers, contributing to its multifaceted roles in immune regulation.

Caution: Product has not been fully validated for medical applications. For research use only.

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