

PYCARD Protein, Human (HEK293, His-Myc)

Cat. No.:	HY-P701308
Synonyms:	PYCARD; PYD And CARD Domain Containing; CARD5; ASC; Apoptosis-Associated Speck-Like Protein Containing A CARD; TMS-1; Caspase Recruitment Domain-Containing Protein 5; TMS1; PYD And CARD Domain-Containing Protein; TMS; HASC
Species:	Human
Source:	HEK293
Accession:	Q9ULZ3 (M1-S195)
Gene ID:	29108
Molecular Weight:	Approximately 30 kDa

PROPERTIES

AA Sequence	<pre> MGRARDAILD ALENLTAEEL KKFKLKLLSV PLREGYGRIP RGALLSMDAL DLTDKLVSFY LETYGAEELTA NVLRDMGLQE MAGQLQAATH QGSGAAPAGI QAPPQSAAKP GLHFIDQHRA AL IARVTNVE WLLDALYGKV LTDEQYQAVR AEPTNPSKMR KLFSFTPAWN WTKCDLLLQA LRESQSYLVE DLERS </pre>
Appearance	Lyophilized powder
Formulation	Lyophilized from 0.22 µm filtered solution of PBS, 6% Trehalose, pH 7.4.
Endotoxin Level	<1 EU/µg, determined by LAL method.
Reconstitution	It is not recommended to reconstitute to a concentration less than 100 µg/mL in ddH ₂ O.
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	<p>PYCARD protein serves as a pivotal mediator in apoptosis and inflammation, playing multifaceted roles in cellular processes. It facilitates caspase-mediated apoptosis, predominantly involving caspase-8 and, in specific cell types, caspase-9. PYCARD is integral to the activation of the mitochondrial apoptotic pathway, promoting caspase-8-dependent proteolytic maturation of BID independently of FADD, as well as mediating mitochondrial translocation of BAX, initiating BAX-dependent apoptosis coupled with the activation of caspase-9, -2, and -3. Furthermore, PYCARD is a crucial adapter in the assembly of various inflammasomes, including NLRP1, NLRP2, NLRP3, NLRP6, AIM2, and likely IFI16, leading to caspase-1 activation, pro-inflammatory cytokine processing, and inflammation. In cooperation with NOD2, PYCARD participates in an inflammasome activated by bacterial muramyl dipeptide. Additionally, it may be involved in RIGI-triggered pro-</p>
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inflammatory responses and inflammasome activation. In adaptive immunity, PYCARD contributes to dendritic cell maturation, stimulating T-cell immunity, and modulates cytoskeletal rearrangements associated with chemotaxis and antigen uptake. Furthermore, it plays a role in the transcriptional activation of cytokines and chemokines, independently of the inflammasome, through signaling pathways involving AP-1, NF-kappa-B, MAPK, and caspase-8. The regulatory functions of PYCARD include modulation of NF-kappa-B induction at the IKK complex level, inhibiting kinase activity of CHUK and IKBK. It is proposed to compete with RIPK2, down-regulating CASP1-mediated RIPK2-dependent NF-kappa-B activation, and activating interleukin-1 beta processing. In host resistance to DNA virus infection, PYCARD likely induces the cleavage and inactivation of CGAS in the presence of cytoplasmic double-stranded DNA, showcasing its diverse and critical roles in cellular responses.

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

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