abcam

Product datasheet

Recombinant Human Vinculin protein (Tagged) ab238349

1 Image

Description

Product name	Recombinant Human Vinculin protein (Tagged)
Purity	> 90 % SDS-PAGE.
Expression system	Escherichia coli
Accession	P18206-1
Protein length	Protein fragment
Animal free	No
Nature	Recombinant
Species	Human
Sequence	PVFHTRTIESILEPVAQQISHLVIMHEEGEVDGKAIPDLTAP VAAVQAAV SNLVRVGKETVQTTEDQILKRDMPPAFIKVENACTKLVQA AQMLQSDPYS VPARDYLIDGSRGILSGTSDLLLTFDEAEVRKIIRVCKGILEY LTVAEVV ETMEDLVTYTKNLGPGMTKMAKMIDERQQELTHQEHRVM LVNSMNTVKEL LPVLISAMKIFVTTKNSKNQGIEEALKNRNFTVE
Predicted molecular weight	53 kDa including tags
Amino acids	2 to 235
Tags	GST tag N-Terminus

Specifications

Our **Abpromise guarantee** covers the use of **ab238349** in the following tested applications.

The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.

Applications	SDS-PAGE
Form	Liquid

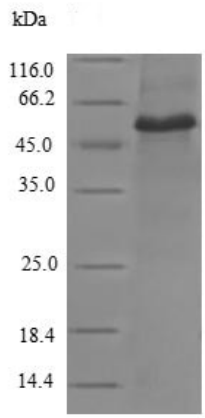
Preparation and Storage

Stability and Storage	Shipped at 4°C. Store at -20°C or -80°C. Avoid freeze / thaw cycle. pH: 7.2 Constituents: Tris buffer, 50% Glycerol (glycerin, glycerine)

General Info

Function	Actin filament (F-actin)-binding protein involved in cell-matrix adhesion and cell-cell adhesion. Regulates cell-surface E-cadherin expression and potentiates mechanosensing by the E-cadherin complex. May also play important roles in cell morphology and locomotion.
Tissue specificity	Metavinculin is muscle-specific.
Involvement in disease	Defects in VCL are the cause of cardiomyopathy dilated type 1W (CMD1W) [MIM:611407]. Dilated cardiomyopathy is a disorder characterized by ventricular dilation and impaired systolic function, resulting in congestive heart failure and arrhythmia. Patients are at risk of premature death. Defects in VCL are the cause of cardiomyopathy familial hypertrophic type 15 (CMH15) [MIM:613255]. It is a hereditary heart disorder characterized by ventricular hypertrophy, which is usually asymmetric and often involves the interventricular septum. The symptoms include dyspnea, syncope, collapse, palpitations, and chest pain. They can be readily provoked by exercise. The disorder has inter- and intrafamilial variability ranging from benign to malignant forms with high risk of cardiac failure and sudden cardiac death.
Sequence similarities	Belongs to the vinculin/alpha-catenin family.
Domain	Exists in at least two conformations. When in the closed, 'inactive' conformation, extensive interactions between the head and tail domains prevent detectable binding to most of its ligands. It takes on an 'active' conformation after cooperative and simultaneous binding of two different ligands. This activation involves displacement of the head-tail interactions and leads to a significant accumulation of ternary complexes. The active form then binds a number of proteins that have both signaling and structural roles that are essential for cell adhesion. The N-terminal globular head (Vh) comprises of subdomains D1-D4. The C-terminal tail (Vt) binds F-actin and cross-links actin filaments into bundles. An intramolecular interaction between Vh and Vt masks the F-actin-binding domain located in Vt. The binding of talin and alpha-actinin to the D1 subdomain of vinculin induces a helical bundle conversion of this subdomain, leading to the disruption of the intramolecular interaction and the exposure of the cryptic F-actin-binding domain of Vt. Vt inhibits actin filament barbed end elongation without affecting the critical concentration of actin assembly.
Post-translational modifications	Phosphorylated; on serines, threonines and tyrosines. Phosphorylation on Tyr-1133 in activated platelets affects head-tail interactions and cell spreading but has no effect on actin binding nor on localization to focal adhesion plaques. Aceylated; mainly by myristic acid but also small amount of palmitic acid.
Cellular localization	Cytoplasm > cytoskeleton. Cell junction > adherens junction. Cell membrane. Cytoplasmic face of adhesion plaques. Recruitment to cell-cell junctions occurs in a myosin II-dependent manner. Interaction with CTNNB1 is necessary for its localization to the cell-cell junctions.

Images



SDS-PAGE - Recombinant Human Vinculin protein (Tagged) (ab238349)

ab238349 analyzed by (Tris-Glycine gel) discontinuous SDS-PAGE (reduced) with 5% enrichment gel and 15% separation gel.

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