

DESCRIPTION

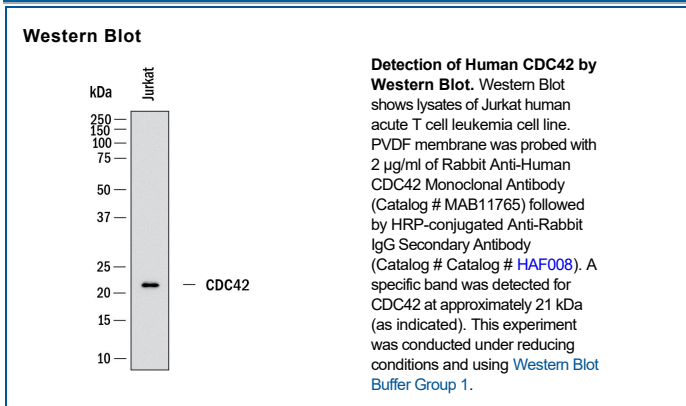
Species Reactivity	Human
Specificity	Detects a synthetic peptide specific for human CDC42 around amino acid 140 in Direct ELISA.
Source	Recombinant Monoclonal Rabbit IgG Clone # 3193C
Purification	Protein A or G purified from cell culture supernatant
Immunogen	Synthetic Peptide Accession # P60953
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose.

APPLICATIONS

Please Note: Optimal dilutions should be determined by each laboratory for each application. [General Protocols](#) are available in the Technical Information section on our website.

	Recommended Concentration	Sample
Western Blot	2 µg/mL	Jurkat human acute T cell leukemia cell line

DATA



PREPARATION AND STORAGE

Reconstitution	Reconstitute lyophilized material at 0.2 mg/ml in sterile PBS. For liquid material, refer to CoA for concentration.
Shipping	Lyophilized product is shipped at ambient temperature. Liquid small pack size (-SP) is shipped with polar packs. Upon receipt, store immediately at the temperature recommended below.
Stability & Storage	Use a manual defrost freezer and avoid repeated freeze-thaw cycles. <ul style="list-style-type: none"> 12 months from date of receipt, -20 to -70 °C as supplied. 1 month, 2 to 8 °C under sterile conditions after reconstitution. 6 months, -20 to -70 °C under sterile conditions after reconstitution.

BACKGROUND

Cell division control protein 42 (CDC42) is a small Rho GTPase with a molecular weight of approximately 21 kDa. CDC42 is a highly conserved protein that plays an integral role in regulating multiple cellular processes, including cytoskeletal organization, cell polarity, vesicle trafficking, and signal transduction. A key regulator of the actin cytoskeleton, CDC42 is critical for the formation of filopodia, which are dynamic, actin-rich cell protrusions involved in sensing the extracellular environment. CDC42 is ubiquitously expressed across eukaryotic cells and contributes to essential biological functions such as cell migration, adhesion, and mitotic spindle orientation. Dysregulation of CDC42 activity is implicated in a variety of pathological conditions, including cancer metastasis, where it drives tumor cell migration and invasion, as well as immune disorders resulting from aberrant cell polarization and trafficking. Mutations in genes regulating CDC42 and its activity are associated with developmental disorders, such as Takenouchi-Kosaki syndrome. Given its central role in cellular signaling and cytoskeletal dynamics, CDC42 is a key player in numerous physiological and pathological contexts, making it a valuable biomarker and therapeutic target.

References:

1. Ridley AJ. Rho GTPases and actin dynamics in membrane protrusions and vesicle trafficking. Trends Cell Biol. 2006 Oct;16(10):522-9. doi: 10.1016/j.tcb.2006.08.006. Epub 2006 Sep 1. PMID: 16949823.
2. Johnson DI. Cdc42: An essential Rho-type GTPase controlling eukaryotic cell polarity. Microbiol Mol Biol Rev. 1999 Mar;63(1):54-105. doi: 10.1128/MMBR.63.1.54-105.1999. PMID: 10066831; PMCID: PMC98957.
3. Jahid S, Ortega JA, Vuong LM, Acquistapace IM, Hachey SJ, Flesher JL, La Serra MA, Brindani N, La Sala G, Manigrasso J, Arencibia JM, Bertozzi SM, Summa M, Bertorelli R, Armirotti A, Jin R, Liu Z, Chen CF, Edwards R, Hughes CCW, De Vivo M, Ganesan AK. Structure-based design of CDC42 effector interaction inhibitors for the treatment of cancer. Cell Rep. 2022 Apr 5;39(1):110641. doi: 10.1016/j.celrep.2022.110641. Erratum in: Cell Rep. 2022 Apr 26;39(4):110760. doi: 10.1016/j.celrep.2022.110760. PMID: 35385746; PMCID: PMC9127750.