PRODUCT INFORMATION

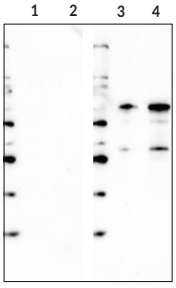
Citrullinated Hsp70 (R357) Polyclonal Antibody

Item No. 23916

Overview and Properties

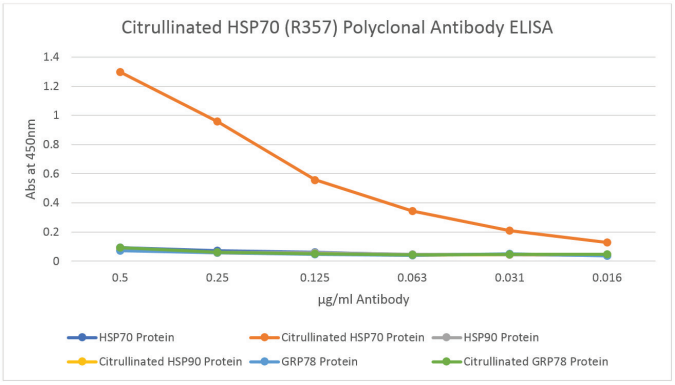
Contents:	This vial contains 500 µl Peptide affinity-purified polyclonal antibody.
Synonyms:	Heat Shock Protein 70 Protein, HspA1A
Immunogen:	Synthetic peptide corresponding to an internal region of human HSP70 with a citrulline at residue 357
Species Reactivity:	(+) Human
Uniprot No.:	P0DMV8
Form:	Liquid
Storage:	-20°C (as supplied)
Stability:	≥3 years
Storage Buffer:	PBS, pH 7.2, 50% glycerol, 0.1% BSA, and 0.02% sodium azide
Host:	Rabbit
Applications:	ELISA and Western blot (WB); the recommended starting dilution for ELISA and WB is 1:200. Other applications were not tested, therefore optimal working concentration/ dilution should be determined empirically.

Images



Citrullinated Hsp70 (R357) Polyclonal Antibody Western blot detection in citrullinated and unmodified Hsp70 proteins.

Lane 1: Hsp70 (20 ng)
Lane 2: Hsp70 (100 ng)
Lane 3: Citrullinated Hsp70 (20 ng)
Lane 4: Citrullinated Hsp70 (100 ng)



Citrullinated Hsp70 (R357) Polyclonal Antibody ELISA detection against citrullinated and unmodified Hsp proteins.

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Description

Heat shock protein 70s (Hsp70s) are abundant and stress-inducible 70 kDa molecular chaperone proteins encoded by a highly conserved, multigene family.[1] They are monomeric proteins that can be divided into two functional domains: an N-terminal ATPase domain and a substrate binding domain that contains a highly conserved EEVD motif at its C-terminus. Hsp70s are found in the cytosol, nuclei, endoplasmic reticulum, mitochondria, and chloroplasts of eukaryotes, as well as in bacteria. They function as molecular chaperones that assist in a wide range of cellular processes, including refolding of aggregated or misfolded proteins, co- and post-translational folding and assembly of nascent peptides, membrane translocation of secretory and organellar proteins, controlling activity of regulatory nuclear receptors, kinases and transcription factors, as well as acting cooperatively with the Hsp90 chaperone system in eukaryotes.[2] The Hsp70 chaperone cycle is ATP-dependent and initiated by transient interaction of the Hsp70 substrate binding domain with hydrophobic regions within a peptide or protein. It consists of an alteration between the low-affinity ATP-bound state with fast rates of substrate exchange and the high-affinity ADP bound state with slow rates of substrate exchange. Hsp70s are subject to a variety of post-translational modifications and their expression is upregulated under conditions of cellular stress and in a variety of disease states. Specifically, citrullinated Hsp70 peptides have been found in the synovial fluid of patients with rheumatoid arthritis.[3] Cayman's Citrullinated Hsp70 (R357) Polyclonal Antibody can be used for Western blot and ELISA applications.

References

1. Boorstein, W.R., Ziegelhoffer, T., and Craig, E.A. Molecular evolution of the HSP70 multigene family. *J. Mol. Evol.* **38(1)**, 1-17 (1994).
2. Mayer, M.P. and Bukau, B. Hsp70 chaperones: Cellular functions and molecular mechanism. *Cell Mol. Life Sci.* **62(6)**, 670-684 (2005).
3. Wang, F., Chen, F.F., Gao, W.B., *et al.* Identification of citrullinated peptides in the synovial fluid of patients with rheumatoid arthritis using LC-MALDI-TOF/TOF. *Clin. Rheumatol.* **35(9)**, 2185-2194 (2016).

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