Datasheet for ABIN6656068

anti-Hsc70 antibody

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Overview

Quantity:	100 µg
Target:	Hsc70 (HSPA8)
Reactivity:	Human
Host:	Mouse
Clonality:	Monoclonal
Conjugate:	This Hsc70 antibody is un-conjugated
Application:	Western Blotting (WB), Immunohistochemistry (IHC), ELISA, Immunoprecipitation (IP), Immunofluorescence (IF), Flow Cytometry (FACS)

Product Details

Purpose:	Hsc70 (Hsp73) Antibody
Immunogen:	This Protein G purified monoclonal antibody was prepared using conventional hybridoma technology after repeated immunizations with a synthetic peptide corresponding to a region of human Hsc70 (Hsp73) protein.
Clone:	N27F3-4
Isotype:	IgG1
Cross-Reactivity (Details):	A BLAST analysis was used to suggest cross-reactivity with Hsc70 from human, bovine, mouse, rat, C. Elegans
Purification:	This Protein G purified monoclonal antibody reacts with human Hsc70 (Hsp73) protein.
Sterility:	Sterile filtered

Target Details

Target:	Hsc70 (HSPA8)
Alternative Name:	Hsc70 Hsp73 (HSPA8 Products)
Background:	Synonyms: Heat shock cognate protein 71- kDa antibody, Heat shock protein 8 antibody, Heat-shock70-KD protein 10, formerly antibody, HSC54 antibody, HSC71 antibody Background: Hsp70 genes encode abundant heat-inducible 70- kDa hsps (hsp70s). In most eukaryotes, hsp70 genes exist as part of a multigene family. Hsp70s are found in most cellular compartments of eukaryotes, including nuclei, mitochondria, chloroplasts, the endoplasmic reticulum and the cytosol, as well as in bacteria. The genes show a high degree of conservation, having at least 50 % identity (2). The N-terminal two-thirds of hsp70s are more conserved than the C-terminal one-third. Hsp70 binds ATP with high affinity and possesses a weak ATPase activity which can be stimulated by binding to unfolded proteins and synthetic peptides (3). When hsc70 (constitutively expressed) present in mammalian cells was truncated, ATP binding activity was found to reside in an N-terminal fragment of 44 kDa which lacked peptide binding capacity. Polypeptide binding ability therefore resided within the C-terminal half (4). The structure of this ATP binding domain displays multiple features of nucleotide binding proteins (5). All hsp70s, regardless of location, bind proteins, particularly unfolded ones. The molecular chaperones of the hsp70 family recognize and bind to nascent polypeptide chains as well as partially folded intermediates of proteins, preventing their aggregation and misfolding. The binding of ATP triggers a critical conformational change leading to the release of the bound substrate protein (6). The universal ability of hsp70s to undergo cycles of binding to and release from hydrophobic stretches of partially unfolded proteins determines their role in a great variety of vital intracellular functions such as protein synthesis, protein folding and oligomerization, and protein transport. Gene Name: HSPA1A
Gene ID:	3312
NCBI Accession:	NP_006588
UniProt:	P11142

Application Details

Application Notes:	ELISA_Dilution: 1:10,000 - 1:50,000 Immunohistochemistry_Dilution: 1:200 - 1:1,000 Western_Blot_Dilution: 1:500 - 1:2,000 Other: User Optimized

Application Details

Comment:	This Protein G purified antibody has been tested for use in western blotting, immunoelectron microscopy, immunohistochemistry and immunoprecipitation. Specific conditions for reactivity should be optimized by the end user. Expect a doublet band approximately 72/73 kDa in size corresponding to Hsc70 (Hsp73) by western blotting in the appropriate cell lysate or extract. In general, a 1:1,000 dilution is suggested for most applications and is suitable to detect Hsc70 (Hsp73) in 20 µg of heat shocked HeLa cell lysate by western blotting.
Restrictions:	For Research Use only

Handling

Format:	Liquid
Buffer:	Buffer: 0.02 M Potassium Phosphate, 0.15 M Sodium Chloride, pH 7.2 Stabilizer: 50 % (v/v) Glycerol Preservative: 0.1 % (w/v) Sodium Azide
Preservative:	Sodium azide
Precaution of Use:	This product contains Sodium azide: a POISONOUS AND HAZARDOUS SUBSTANCE which should be handled by trained staff only.
Storage:	4 °C,-20 °C
Storage Comment:	Store vial at -20° C prior to opening. This product is stable for several weeks at 4° C as an undiluted liquid. Dilute only prior to immediate use. For extended storage aliquot contents and freeze at -20° C or below. Avoid cycles of freezing and thawing.
Expiry Date:	12 months

Publications

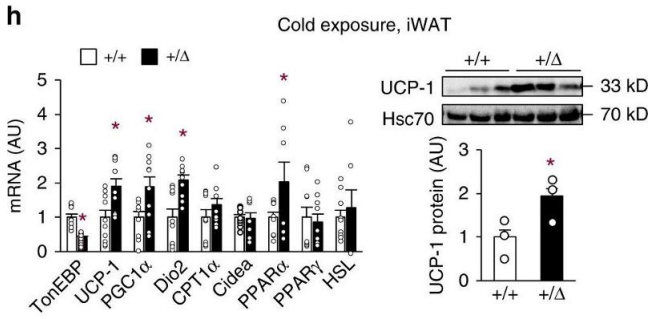
Product cited in:	Kim, Kim, Lee, Eom, Kim, Park, Jeong, Lee: "Transcription Factor TonEBP Stimulates Hyperosmolality-Dependent Arginine Vasopressin Gene Expression in the Mouse Hypothalamus." in: **Frontiers in endocrinology**, Vol. 12, pp. 627343, (2021) (PubMed). Ye, Lee, Yoo, Lee, Lee, Kang, Jeong, Park, Lee-Kwon, Choi, Kwon: "TonEBP in dendritic cells mediates pro-inflammatory maturation and Th1/Th17 responses." in: **Cell death & disease**, Vol. 11, Issue 6, pp. 421, (2021) (PubMed). Lee, An, Ye, Lee, Yoo, Jeong, Kang, Alfadda, Lim, Park, Lee-Kwon, Kim, Choi, Kwon: "

Publications

TonEBP/NFAT5 promotes obesity and insulin resistance by epigenetic suppression of white adipose tissue beiging." in: **Nature communications**, Vol. 10, Issue 1, pp. 3536, (2019) (PubMed).

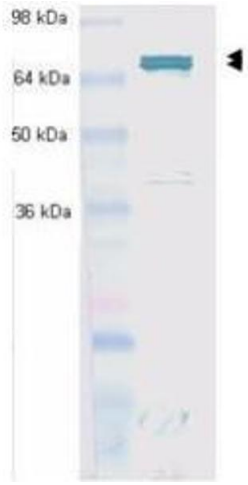
Lee, Sanada, An, Ye, Lee, Seo, Lee, Lee-Kwon, Küper, Neuhofer, Choi, Kwon: "LPS-induced NFκB enhanceosome requires TonEBP/NFAT5 without DNA binding." in: **Scientific reports**, Vol. 6, pp. 24921, (2018) (PubMed).

Images



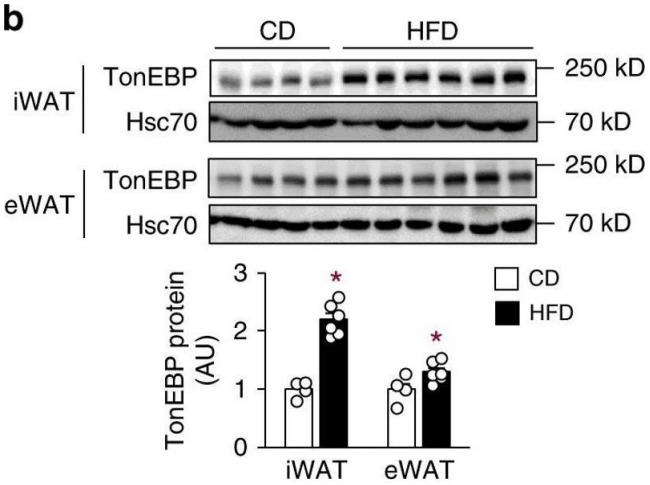
Western Blotting

Image 1. TonEBP deficiency promotes energy expenditure and beiging of WAT. HFD-fed animals were analyzed by indirect calorimetry to obtain VO2 (a), VCO2 (b), and heat production (c) (n=4). Rectal temperature (temp.) measured in CD-fed animals at room temperature (n=8) (d) and after exposure to cold up to 6h as indicated (4 °C) (n=6) (e). f, g mRNA abundance of thermogenic genes (f) and beiging marker genes (g) in iWAT of HFD-fed animals (n=5). h mRNA abundance of thermogenic genes (left, n=10) and immunoblots of UCP-1 and Hsc70 (right, n=3) in iWAT of CD-fed animals exposed to cold (4 °C). i Representative images of iWAT sections stained with H&E and UCP-1 antibody from CD-fed animals exposed to cold (4 °C). Scale bars, 100μm. j, k Thermogenic gene (j) and beige marker (k) mRNA abundance in beige adipocytes differentiated from the stromal vascular cells of iWAT (n=4). n represents number of biologically independent animals (a-e) or samples (f-k). a-h, j, k All data are presented as mean+s.e.m. AU arbitrary unit. The p-values are determined by unpaired t-test (d, f-k) or one-way ANOVA (a-c, e). *p<0.05 vs. +/+. Source data are provided as a Source Data file - figure provided by CiteAb. Source: PMID31387996



Western Blotting

Image 2. Anti-Hsc70 (Hsp73) Antibody - Western Blot. Western blot using Protein G purified anti-Hsc70 (Hsp73) antibody shows detection of Hsc70 (Hsp73) in whole cell lysates from heat shocked HeLa cells. The band marked by the double arrowheads corresponds to Hsc70 (Hsp73) at an approximate molecular weight of 72/73 kDa. The primary antibody was used at a 1:1,000 dilution.



Western Blotting

Image 3. Adipocyte TonEBP expression is elevated in obesity and TonEBP-deficient mice resist obesity. aTonEBP mRNA levels in iWAT, eWAT, BAT, muscle, and liver from C57BL/6J mice fed with CD (chow diet, n=5) or HFD (high-fat diet, n=7) for 16 weeks. b Immunoblots (top) and quantification of protein levels (bottom) of TonEBP and Hsc70 in iWAT and eWAT (CD, n=4, HFD, n=6). c Correlation of TONEBP mRNA levels in human subcutaneous adipocytes and BMI (n=15). TonEBP mRNA (d) and representative immunoblots (e, top) and quantification of protein levels (e, bottom) in 3T3-L1 adipocytes transfected with miR-negative control (NC), miR-30b (30b), or miR-30c (30c) (n=4). f-iTonEBP+/Δ mice (+/Δ) and their TonEBP+/+ littermates (+/+) were fed with CD or HFD as indicated. f Changes in body weight after a switch to HFD (CD+/+, n=7, CD+/Δ, n=7, HFD+/+, n=13, HFD+/Δ, n=11). g Representative images of animals fed with HFD. h Body weight, height, fat mass, and lean mass (n=8). i Representative images (top) and weight (bottom) of fat pads from HFD-fed animals (n=4). n represents number of biologically independent samples (a-c, i) or animals (f-h) or independent experiments with triplicate (d, e). All data are presented as mean+s.e.m. (a, b, f, h, i) or+s.d. (d, e). AU, arbitrary unit. The p-values are determined by unpaired t-

test (a,b, h, i) or one-way ANOVA (d-f). *p<0.05 vs. CD (a), NC (d), or +/+(f, h, i). Source data are provided as a Source Data file - figure provided by CiteAb. Source: PMID31387996

Please check the product details page for more images. Overall 4 images are available for ABIN6656068.