

# Product Information



## Hsp70 Polyclonal Antibody

Item No. 15481

<b>Contents:</b>	This vial contains whole rabbit serum (check label for amount).
<b>Synonym:</b>	Heat Shock Protein 70
<b>Antigen:</b>	Full length Hsp70
<b>Host:</b>	Rabbit
<b>Cross Reactivity:</b>	(+) Human, mouse, rat, beluga, cow, canine, fish (carp), guinea pig, hamster, monkey, porcine, ovine, and coral Hsp70. Detects a 70 kDa protein corresponding to the molecular mass of Hsp70 on SDS-PAGE immunoblots. May cross-react with Hsc70 at lower dilutions.
<b>Stability:</b>	≥1 year at -20°C
<b>Applications:</b>	Western blot (WB), immunoprecipitation (IP), ELISA, immunohistochemistry, and immunocytochemistry. <sup>1-4</sup> The recommended starting concentration for WB is 1:25,000 (ECL), and 1:100 for IP.

Hsp70 genes encode abundant heat-inducible 70 kDa Hsps (Hsp70). In most eukaryotes Hsp70 genes exist as part of a multigene family. They 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.<sup>5,6</sup> The N-terminal two-thirds of Hsp70s are more conserved than the C-terminal 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.<sup>7</sup> 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.<sup>8</sup> The structure of this ATP binding domain displays multiple features of nucleotide binding proteins.<sup>9</sup>

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 bound substrate protein.<sup>10</sup> 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, oligomerization, and protein transport.

### References

1. Hung, T.-H., Skepper, J.N., and Burton, G.J. *Am. J. Pathol.* **159**(3), 1031-1043 (2001).
2. Locke, M. *Cell Stress and Chaperones* **5**(1), 45-51 (2000).
3. Ianaro, A., Ialenti, A., Maffia, P., et al. *FEBS Lett.* **508**, 61-66 (2001).
4. Trentin, G.A., Yin, X., Tahir, S., et al. *J. Biol. Chem.* **276**(6), 13087-13095 (2001).
5. Welch, W.J. and Suhan, J.P. *J. Cell Biol.* **103**, 2035-2052 (1986).
6. Boorstein, W.R., Ziegelhoffer, T., and Craig, E.A. *Journal of Molecular Evolution* **38**(1), 1-17 (1994).
7. Rothman, J.E. *Cell* **59**, 591-601 (1989).
8. DeLuca-Flaherty, C., McKay, D.B., Parham, P., et al. *Cell* **62**, 875-887 (1990).
9. Bork, P., Sander, C., and Valencia, A. *Proc. Natl. Acad. Sci. USA* **89**, 7290-7294 (1992).
10. Fink, A.L. *Physiol. Rev.* **79**(2), 425-449 (1999).

### Related Products

For a list of related products please visit: [www.caymanchem.com/catalog/15481](http://www.caymanchem.com/catalog/15481)

**WARNING: THIS PRODUCT IS FOR LABORATORY RESEARCH ONLY. NOT FOR ADMINISTRATION TO HUMANS. NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.**

#### SAFETY DATA

This material should be considered hazardous until information to the contrary becomes available. Do not ingest, swallow, or inhale. Do not get in eyes, on skin, or on clothing. Wash thoroughly after handling. This information contains some, but not all, of the information required for the safe and proper use of this material. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

#### WARRANTY AND LIMITATION OF REMEDY

Cayman Chemical Company makes **no warranty or guarantee** of any kind, whether written or oral, expressed or implied, including without limitation, any warranty of fitness for a particular purpose, suitability and merchantability, which extends beyond the description of the chemicals hereof. Cayman **warrants only** to the original customer that the material will **meet our specifications at the time of delivery**.

Cayman will carry out its delivery obligations with due care and skill. Thus, in no event will Cayman have **any obligation or liability**, whether in tort (including negligence) or in contract, for any direct, indirect, incidental or consequential damages, even if Cayman is informed about their possible existence.

This limitation of liability does not apply in the case of intentional acts or negligence of Cayman, its directors or its employees.

Buyer's **exclusive remedy** and Cayman's sole liability hereunder shall be limited to a **refund** of the purchase price, or at Cayman's option, the **replacement**, at no cost to Buyer, of all material that does not meet our specifications.

Said refund or replacement is conditioned on Buyer giving written notice to Cayman within thirty (30) days after arrival of the material at its destination. Failure of Buyer to give said notice within thirty (30) days shall constitute a waiver by Buyer of all claims hereunder with respect to said material.

For further details, please refer to our **Warranty and Limitation of Remedy located on our website and in our catalog**.

Copyright Cayman Chemical Company, 01/13/2014

### Cayman Chemical

#### Mailing address

1180 E. Ellsworth Road  
Ann Arbor, MI  
48108 USA

#### Phone

(800) 364-9897  
(734) 971-3335

#### Fax

(734) 971-3640

#### E-Mail

[custserv@caymanchem.com](mailto:custserv@caymanchem.com)

#### Web

[www.caymanchem.com](http://www.caymanchem.com)