

**Datasheet for 200-301-F64****Hsp70/Hsc70 Antibody****Overview**

|                      |                                                                                                                                          |
|----------------------|------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Description:</b>  | Anti-HSP70/HSC70 (MOUSE) Monoclonal Antibody - 200-301-F64                                                                               |
| <b>Item No.:</b>     | 200-301-F64                                                                                                                              |
| <b>Size:</b>         | 200 µg                                                                                                                                   |
| <b>Applications:</b> | IF, IHC, IP, WB                                                                                                                          |
| <b>Reactivity:</b>   | Human, Mouse, Rat, Beluga, Bovine, Chicken, D. melanogaster, Dog, Fish, Guinea Pig, Hamster, Pig, Rabbit, Scallop, Sheep, Xenopus, Yeast |
| <b>Host Species:</b> | Mouse                                                                                                                                    |

**Product Details****Background:**

Hsp70 genes encode abundant heat-inducible 70-kDa hsps (hsp70s). 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. 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. 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. The structure of this ATP binding domain displays multiple features of nucleotide binding proteins.

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. 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.

|                      |                                                                                                                                                 |
|----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Synonyms:</b>     | Hsp70 1, Hsp70 2, Hsp70.1, Hsp72, Hsp73, HSPA1, HSPA1A, HSPA1B, Heat shock 70 kDa protein 1A/1B, Heat shock 70 kDa protein 1/2, HSP70-1/HSP70-2 |
| <b>Host Species:</b> | Mouse                                                                                                                                           |
| <b>Clonality:</b>    | Monoclonal                                                                                                                                      |

Clone ID: BB70

Format: IgG2a

## Target Details

Gene Name: HSPA1A

Reactivity: Human, Mouse, Rat, Beluga, Bovine, Chicken, D. melanogaster, Dog, Fish, Guinea Pig, Hamster, Pig, Rabbit, Scallop, Sheep, Xenopus, Yeast

Immunogen Type: Other

Immunogen: Hsp70/Hsc70 Antibody was produced in mice by repeated immunizations raised against chicken Hsp70/Hsp90 complex.

Purity/Specificity: Anti-Hsp70/Hsc70 Antibody was purified by Protein G chromatography. A BLAST analysis was used to suggest cross-reactivity with Hsp70/Hsc70 from Human, Mouse, Rat, Sheep, Dog, Beluga, Bovine, Fish, Guinea pig, Scallop pig, Hamster, Rabbit, Chicken, Xenopus, Drosophila, Yeast sources based on 100% homology with the immunizing sequence. Cross-reactivity with Hsp70/Hsc70 from other sources has not been determined. Heat Shock research.

Relevant Links:

- [NCBI - NP\\_005336.3](#)
- [GeneID - 3303](#)
- [UniProtKB - P0DMV8](#)

## Application Details

Tested Applications: IF, IHC, IP, WB

Application Note: Anti-Hsp70/Hsc70 Antibody is tested for WB, IP, IF, and IHC-P. Expect a band approximately ~72 and ~73kDa proteins corresponding to the molecular mass of inducible Hsp and Hsc on SDS PAGE immunoblots. This monoclonal antibody reacts with chicken Hsp70/Hsp90 complex. Specific conditions for reactivity should be optimized by the end user.

Assay Dilutions: All assays should be optimized by the user. Recommended dilutions (if any) may be listed below.

IHC: User Optimized

IP: User Optimized

WB: 1µg/ml

## Formulation

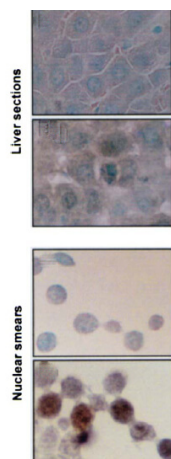
Physical State: Liquid (sterile filtered)

|                       |                                                            |
|-----------------------|------------------------------------------------------------|
| <b>Concentration:</b> | 1.0 mg/mL by UV absorbance at 280 nm                       |
| <b>Buffer:</b>        | 0.02 M Potassium Phosphate, 0.15 M Sodium Chloride, pH 7.2 |
| <b>Preservative:</b>  | 0.09% (w/v) Sodium Azide                                   |
| <b>Stabilizer:</b>    | 50% (v/v) Glycerol                                         |

## Shipping & Handling

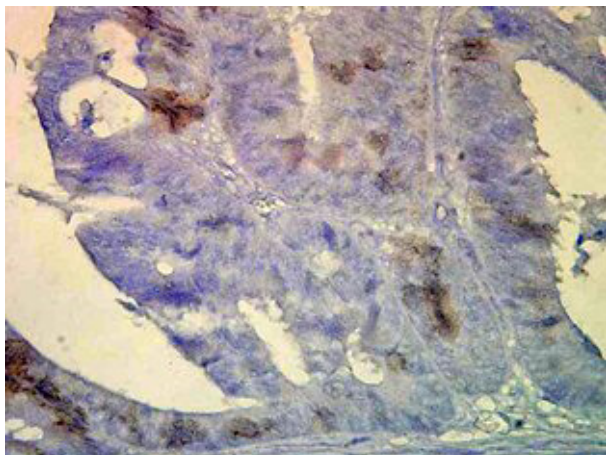
|                            |                                                                                                                                                                                                                                                                                                                                               |
|----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Shipping Condition:</b> | Dry Ice                                                                                                                                                                                                                                                                                                                                       |
| <b>Storage Condition:</b>  | Store vial at -20° C prior to opening. Aliquot contents and freeze at -20° C or below for extended storage. Avoid cycles of freezing and thawing. Centrifuge product if not completely clear after standing at room temperature. This product is stable for several weeks at 4° C as an undiluted liquid. Dilute only prior to immediate use. |
| <b>Expiration:</b>         | Expiration date is one (1) year from date of receipt.                                                                                                                                                                                                                                                                                         |

## Images



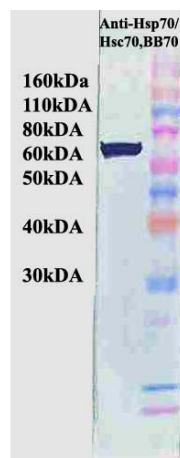
### Immunohistochemistry

Immunohistochemistry of mouse anti-Hsp70/Hsc70 antibody. Tissue: liver sections (top) and nuclear sections (bottom) of rat hepatocytes. First pictures in series show two hours after exposure to stress, the second shows the control. Fixation: paraffin embedded. Primary Antibody: Hsp70/Hsc70 antibody at 1:100,000 for 1h at RT. Secondary antibody: Peroxidase mouse secondary at 1:10,000 for 45 min at RT. Localization: Cytoplasm. Staining: Hsp70/Hsc70 as brown signal staining with BB70.



### Immunohistochemistry

Immunohistochemistry of mouse anti-Hsp70/Hsc70 antibody. Tissue: Human colon tissue. Primary Antibody: Hsp70/Hsc70 antibody at 1:100,000 for 1h at RT. Secondary antibody: Peroxidase mouse secondary at 1:10,000 for 45 min at RT. Localization: Cytoplasm. Staining: Hsp70/Hsc70 as brown signal in inflammatory cells.



### Western Blot

Western Blot of mouse anti-Hsp70/Hsc70 antibody. Lane 1: HeLa cell lysate. Lane 2: molecular weight marker. Load: 35 µg per lane. Primary antibody: Hsp70/Hsc70 antibody at 1:1000 for overnight at 4°C. Secondary antibody: IRDye800™ mouse secondary antibody at 1:10,000 for 45 min at RT. Block: 5% BLOTTO overnight at 4°C. Predicted/Observed size: 70.1 kDa/~65 kDa for Hsp70/Hsc70. Other band(s): none.

## Disclaimer

This product is for research use only and is not intended for therapeutic or diagnostic applications. Please contact a technical service representative for more information. All products of animal origin manufactured by Rockland Immunochemicals are derived from starting materials of North American origin. Collection was performed in United States Department of Agriculture (USDA) inspected facilities and all materials have been inspected and certified to be free of disease and suitable for exportation. All properties listed are typical characteristics and are not specifications. All suggestions and data are offered in good faith but without guarantee as conditions and methods of use of our products are beyond our control. All claims must be made within 30 days following the date of delivery. The prospective user must determine the suitability of our materials before adopting them on a commercial scale. Suggested uses of our products are not recommendations to use our products in violation of any patent or as a license under any patent of Rockland Immunochemicals, Inc. If you require a commercial license to use this material and do not have one, then return this material, unopened to: Rockland Inc., P.O. BOX 5199, Limerick, Pennsylvania, USA.