SANTA CRUZ BIOTECHNOLOGY, INC.

HRI (S-16): sc-21949

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

HRI (heme-regulated inhibitor kinase) phosphorylates the α subunit of eIF2α kinase, which plays an important role in translational regulation during heme deficiency. HRI is activated in response to a number of environmental conditions, including heme deficiency, heat shock, and oxidative stress. Autophosphorylation is essential for the activation of HRI, which causes an arrest of initiation of protein synthesis. Both HSP 90 and HSC 70 are necessary for all stress-induced HRI activation. Furthermore, HSC 70 is required for the folding and transformation of HRI into an active kinase and is subsequently required to negatively attenuate the activation of transformed HRI. Both the N-terminus and the kinase insertion domain, which are unique to HRI, are involved in the heme binding and the heme regulation of HRI. The human HRI gene maps to chromosome 7p22.1 and encodes a 630 amino acid protein expressed mainly in erythroid cells.

CHROMOSOMAL LOCATION

Genetic locus: EIF2AK1 (human) mapping to 7p22.1; Eif2ak1 (mouse) mapping to 5 G2.

SOURCE

HRI (S-16) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of HRI of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-21949 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

APPLICATIONS

HRI (S-16) is recommended for detection of HRI of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

HRI (S-16) is also recommended for detection of HRI in additional species, including equine, canine and bovine.

Suitable for use as control antibody for HRI siRNA (h): sc-39052, hRIF siRNA (m): sc-75302, HRI shRNA Plasmid (h): sc-39052-SH, hRIF shRNA Plasmid (m): sc-75302-SH, HRI shRNA (h) Lentiviral Particles: sc-39052-V and hRIF shRNA (m) Lentiviral Particles: sc-75302-V.

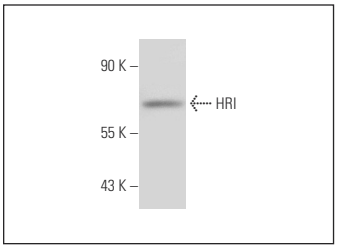
Molecular Weight of HRI: 71 kDa.

Positive Controls: HEL 92.1.7 cell lysate: sc-2270.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



HRI (S-16): sc-21949. Western blot analysis of HRI expression in HEL 92.1.7 whole cell lysate.

SELECT PRODUCT CITATIONS

1. Martinkova, M., et al. 2007. Eukaryotic initiation factor 2α kinase is a nitric oxide-responsive mercury sensor enzyme: potent inhibition of catalysis by the mercury cation and reversal by nitric oxide. FEBS Lett. 581: 4109-4114.
2. Datta, B., et al. 2007. Autoproteolysis of rat p67 generates several peptide fragments: the N-terminal fragment, p26, is required for the protection of eIF2α from phosphorylation. Biochemistry 46: 3465-3475.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.