SANTA CRUZ BIOTECHNOLOGY, INC.

p-IFN-α/βRα (Tyr 466)-R: sc-13114-R

BACKGROUND

The type I interferons (IFNs), α and β, are a group of structurally and functionally related proteins that are induced by either viruses or double stranded RNA and defined by their ability to confer an antiviral state in cells. The α and β IFNs appear to compete with one another for binding to a common cell surface receptor. Components of the receptor for IFN-α and -β include a 331 amino acid transmembrane glycoprotein, designated IFN-α/βR, and a 557 amino acid component designated IFN-αR. The latter protein, IFN-αR, is weakly responsive to type I interferons in contrast to IFN-α/βR, which binds to and responds effectively to IFN-β and to several of the IFN-α subtypes. Treatment of cells with IFN-α causes the IFN-αR1 subunit of the IFN-α receptor to become phosphorylated at Tyr 466. The region surrounding phosphorylated Tyr 466 binds the SH2 domain of Stat2, facilitating its phosphorylation and thus enhancing IFN-α signal transduction. Mouse, rat and human IFN-α/βRα are phosphorylated upon ligand binding on Ser 535 and Ser 539.

REFERENCES

1. Branca, A.A., et al. 1981. Evidence that type I and II interferons have different receptors. Nature 294: 768-770.
2. Orchansky, P., et al. 1984. Type I and type II interferon receptors. J. Interferon Res. 4: 275-282.
3. Novick, D., et al. 1987. The human interferon-γ receptor, purification, characterization and preparation of antibodies. J. Biol. Chem. 262: 8483-8487.
4. Aguet, M., et al. 1988. Molecular cloning and expression of the human interferon-γ receptor. Cell 55: 273-280.
5. Uze, G., et al. 1990. Genetic transfer of a functional human interferon-α receptor into mouse cells: cloning and expression of its cDNA. Cell 60: 225-234.
6. Novick, D., et al. 1994. The human interferon-α/β receptor: characterization and molecular cloning. Cell 77: 391-400.
7. Constantinescu, S.N., et al. 1994. Role of interferon-α/β receptor chain 1 in the structure and transmembrane signaling of the interferon-α/β receptor complex. Proc. Natl. Acad. Sci. USA 91: 9602-9606.
8. Krishnan, K., et al. 1998. Identification of amino acid residues critical for the Src-homology 2 domiain-dependent docking of Stat2 to the interferon-α receptor. J. Biol. Chem. 273: 19495-19501.

CHROMOSOMAL LOCATION

Genetic locus: IFNAR1 (human) mapping to 21q22.11.

SOURCE

p-IFN-α/βRα (Tyr 466)-R is a rabbit polyclonal antibody raised against a short amino acid sequence containing Tyr 466 phosphorylated IFN-α/βRα of human origin.

STORAGE

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

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-13114 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

p-IFN-α/βRα (Tyr 466)-R is recommended for detection of Tyr 466 phosphorylated IFN-α/βRα of 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).

Suitable for use as control antibody for IFN-α/βRα siRNA (h): sc-35637, IFN-α/βRα shRNA Plasmid (h): sc-35637-SH and IFN-α/βRα shRNA (h) Lentiviral Particles: sc-35637-V.

Molecular Weight of IFN-α subunit,: 110 kDa.

Molecular Weight of IFN-β subunit: 95-100 kDa.

Molecular Weight of IFN-β subunit short form: 55 kDa.

Positive Controls: A-431 whole cell lysate: sc-2201.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto B Blocking Reagent: sc-2335 (use 50 mM NaF, sc-24988, as diluent), Western Blotting Luminol Reagent: sc-2048 and Lambda Phosphatase: sc-200312A. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

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.