SANTA CRUZ BIOTECHNOLOGY, INC.

p-IFN-α/βRα (Ser 535/Ser 539): sc-135700

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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. Uzé, 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.

CHROMOSOMAL LOCATION

Genetic locus: IFNAR1 (human) mapping to 21q22.11; Ifnar1 (mouse) mapping to 16 C3.3.

SOURCE

p-IFN-α/βRα (Ser 535/Ser 539) is a rabbit polyclonal antibody raised against a short amino acid sequence containing dually phosphorylated Ser 535 and Ser 539 of IFN-α/βRα of human origin.

PRODUCT

Each vial contains IgG in 100 µl of 10 mM HEPES with 150 mM NaCl, 50% glycerol and < 0.1% BSA.

RESEARCH USE

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

APPLICATIONS

p-IFN-α/βRα (Ser 535/Ser 539) is recommended for detection of Ser 535 and Ser 539 dually phosphorylated IFN-α/βRα of human origin, correspondingly Ser 526 and Ser 530 dually phosphorylated IFN-α/βRα of mouse origin and correspondingly Ser 375 and Ser 379 dually phosphorylated IFN-α/βRα of rat origin by Western Blotting (starting dilution to be determined by researcher, dilution range 1:100-1:5000), immunoprecipitation [1-2 µl per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution to be determined by researcher, dilution range 1:50-1:2500) and immunohistochemistry (including paraffin-embedded sections) (starting dilution to be determined by researcher, dilution range 1:50-1:2500).

Suitable for use as control antibody for IFN-α/βRα siRNA (h): sc-35637, IFN-α/βRα siRNA (m): sc-40090, IFN-α/βRα shRNA Plasmid (h): sc-35637-SH, IFN-α/βRα shRNA Plasmid (m): sc-40090-SH, IFN-α/βRα shRNA (h) Lentiviral Particles: sc-35637-V and IFN-α/βRα shRNA (m) Lentiviral Particles: sc-40090-V.

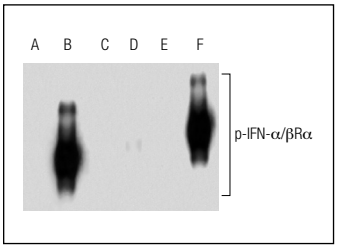
Molecular Weight of p-IFN-α/βRα α subunit: 110 kDa.

Molecular Weight of p-IFN-α/βRα β subunit: 95-100 kDa.

Molecular Weight of p-IFN-α/βRα β subunit shot form: 55 kDa.

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

DATA



p-IFN-α/βRα (Ser 535/Ser 539): sc-135700. Western blot analysis of IFN-α/βRα phosphorylation in immunoprecipitates from HEK 293 cells transfected with mock vector (**A**,**C**,**E**) and IFN-α/βRα (**B**,**D**,**F**). Blots were probed with p-IFN-α/βRα (Ser 535/Ser 539): sc-135700 (**A**,**B**), p-IFN-α/βRα (Ser 535/Ser 539): sc-135700 preincubated with its cognate phosphorylated peptide (**C**,**D**) and p-IFN-α/βRα (Ser 535/Ser 539): sc-135700 preincubated with the corresponding unphosphorylated peptide (**E**,**F**).

SELECT PRODUCT CITATIONS

1. Zhang, Q., et al. 2011. Activation of the Ras/Raf/MEK pathway facilitates HCV replication via attenuation of the IFN-JAK-Stat pathway. J. Virol. 86: 1544-1554.

STORAGE

For immediate and continuous use, store at 4° C for up to one month. For sporadic use, freeze in working aliquots in order to avoid repeated freeze/thaw cycles. If turbidity is evident upon prolonged storage, clarify solution by centrifugation.