

ISG20L1 (D-20): sc-243108

BACKGROUND

ISG20L1 (apoptosis enhancing nuclease), also known as AEN or pp12744, is a 325 amino acid protein that contains one exonuclease domain and shares significant homology with various exonucleases. Encoded by a gene that maps to human chromosome 15q26.1, ISG20L1 localizes predominantly to nucleolus where it translocates to nucleoplasm upon apoptosis induction. Up-regulated by p53 in response to ionizing radiation and DNA-damaging agents, ISG20L1 requires phosphorylation of p53 at 'Ser-15' for effective induction. ISG20L1 digests double-stranded DNA to form single-stranded DNA and amplifies DNA damage signals, thereby mediating and enhancing p53-induced apoptosis. Existing as two alternatively spliced isoforms, ISG20L1 exhibits exonuclease activity against single- and double-stranded DNA and RNA and also participates in nucleic acid binding.

REFERENCES

- Lee, J.H., et al. 2005. Identification of a novel ionizing radiation-induced nuclease, AEN, and its functional characterization in apoptosis. *Biochem. Biophys. Res. Commun.* 337: 39-47.
- Turtoi, A., et al. 2008. Early gene expression in human lymphocytes after gamma-irradiation—a genetic pattern with potential for biodosimetry. *Int. J. Radiat. Biol.* 84: 375-387.
- Couté, Y., et al. 2008. ISG20L2, a novel vertebrate nucleolar exoribonuclease involved in ribosome biogenesis. *Mol. Cell Proteomics* 7: 546-559.
- Kawase, T., et al. 2008. p53 target gene AEN is a nuclear exonuclease required for p53-dependent apoptosis. *Oncogene* 27: 3797-3810.
- Zauli, G., et al. 2009. Exposure of B cell chronic lymphocytic leukemia (B-CLL) cells to nutlin-3 induces a characteristic gene expression profile, which correlates with nutlin-3-mediated cytotoxicity. *Curr. Cancer Drug Targets.* 9: 510-518.
- Turtoi, A., et al. 2009. Effect of (211)At α -particle irradiation on expression of selected radiation responsive genes in human lymphocytes. *Int. J. Radiat. Biol.* 85: 403-412.
- Marsh, B.J., et al. 2009. Inflammation and the emerging role of the toll-like receptor system in acute brain ischemia. *Stroke* 40: S34-S37.
- Haralambieva, I.H., et al. 2010. 2'-5'-Oligoadenylate synthetase single-nucleotide polymorphisms and haplotypes are associated with variations in immune responses to rubella vaccine. *Hum. Immunol.* 71: 383-391.
- Eby, K.G., et al. 2010. ISG20L1 is a p53 family target gene that modulates genotoxic stress-induced autophagy. *Mol. Cancer* 9: 95.

CHROMOSOMAL LOCATION

Genetic locus: AEN (human) mapping to 15q26.1.

SOURCE

ISG20L1 (D-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of ISG20L1 of human origin.

PRODUCT

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

Blocking peptide available for competition studies, sc-243108 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

ISG20L1 (D-20) is recommended for detection of ISG20L1 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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); non cross-reactive with ISG20L2.

ISG20L1 (D-20) is also recommended for detection of ISG20L1 in additional species, including porcine.

Suitable for use as control antibody for ISG20L1 siRNA (h): sc-89904, ISG20L1 shRNA Plasmid (h): sc-89904-SH and ISG20L1 shRNA (h) Lentiviral Particles: sc-89904-V.

Molecular Weight of ISG20L1: 36 kDa.

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) 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.

STORAGE

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

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.