

# BAT1/DDX39 (F-16): sc-55072

## BACKGROUND

BAT1 (spliceosome RNA helicase BAT1), also known as DEAD-box protein UAP56 (56 kDa U2AF65-associated protein), HLA-B associated transcript-1 or ATP-dependent RNA helicase p47, is a member of the DECD subfamily of DEAD-box helicases. Important for mRNA splicing and nuclear export, BAT1 interacts with the mRNA export factor ALY and also functions as a splicing factor, mediating the first ATP-dependent step of spliceosome assembly. BAT1 associates with transcription elongation factor THO proteins, forming the TREX complex, and also interacts with splicing machinery to form the exon junction complex. Due to alternative splicing events, BAT1 exists in two isoforms. DDX39 (DEAD-box protein 39), like BAT1, is a member of the DEAD-box family of helicases. Localized to the nucleus and expressed in lung, brain, kidney, spleen, thymus and salivary gland, DDX39 functions in a similar manner to BAT1 and is involved in pre-mRNA splicing and mRNA export out of the nucleus. DDX39 expression is upregulated in lung squamous cell carcinoma, suggesting a role for DDX39 in tumorigenesis.

## REFERENCES

1. Fleckner, J., et al. 1997. U2AF65 recruits a novel human DEAD box protein required for the U2 snRNP-branchpoint interaction. *Genes Dev.* 11: 1864-1872.
2. Momose, F., et al. 2001. Cellular splicing factor Raf-2p48/NPI-5/BAT1/UAP56 interacts with the influenza virus nucleoprotein and enhances viral RNA synthesis. *J. Virol.* 75: 1899-1908.
3. Luo, M.L., et al. 2001. Pre-mRNA splicing and mRNA export linked by direct interactions between UAP56 and Aly. *Nature* 413: 644-647.
4. Price, P., et al. 2004. Polymorphisms at positions -22 and -348 in the promoter of the BAT1 gene affect transcription and the binding of nuclear factors. *Hum. Mol. Genet.* 13: 967-974.
5. Shi, H., et al. 2004. Crystal structure of the human ATP-dependent splicing and export factor UAP56. *Proc. Natl. Acad. Sci. USA* 101: 17628-17633.
6. Thakurta, A.G., et al. 2005. Homolog of BRCA2-interacting Dss1p and Uap56p link Mlo3p and Rae1p for mRNA export in fission yeast. *EMBO J.* 24: 2512-2523.
7. Kapadia, F., et al. 2006. Nuclear localization of poly(A)<sup>+</sup> mRNA following siRNA reduction of expression of the mammalian RNA helicases UAP56 and URH49. *Gene* 384: 37-44.
8. Ramasawmy, R., et al. 2006. BAT1, a putative anti-inflammatory gene, is associated with chronic Chagas cardiomyopathy. *J. Infect. Dis.* 193: 1394-1399.
9. Sugiura, T., et al. 2007. DDX39, upregulated in lung squamous cell cancer, displays RNA helicase activities and promotes cancer cell growth. *Cancer Biol. Ther.* 6: 957-964.

## CHROMOSOMAL LOCATION

Genetic locus: DDX39A (human) mapping to 19q13.12, DDX39B (human) mapping to 6p21.33; Ddx39 (mouse) mapping to 8 C2, Ddx39b (mouse) mapping to 17 B1.

## SOURCE

BAT1/DDX39 (F-16) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of BAT1 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-55072 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

BAT1/DDX39 (F-16) is recommended for detection of BAT1 and DDX39 of mouse, rat and 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).

BAT1/DDX39 (F-16) is also recommended for detection of BAT1 and DDX39 in additional species, including equine, canine, bovine, porcine and avian.

Molecular Weight of BAT1/DDX39: 48 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, Jurkat whole cell lysate: sc-2204 or K-562 whole cell lysate: sc-2203.

## 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](http://www.scbt.com) or our catalog for detailed protocols and support products.