ALPHA DIAGNOSTIC INTERNATIONAL

Product Specification Sheet

Life Technologies™ Your Molecular & Cell Technology Partner

Sterol regulatory element binding Protein 2 (SREBP2; SRBP2) Antibodies

Cat # SREBP23-P	Human/mouse/rat SREBP2 control/blocking peptide	**SIZE**: 100 ug
Cat # SREBP23-A	Rabbit Anti- Human/mouse/rat SREBP2 IgG (aff pure)	**SIZE**: 100 ug
Cat # SREBP23-C	Recombinant Human SREBP2 protein control for WB	**SIZE**: 100 ul

Steroids are a large group of complex tetracyclic lipids that consist of a 17-carbon-ring system. Examples are bile acids, sterols, various hormones and saponins. These hormones are powerful signal molecules that regulate a host of organismal functions. **Sterol regulatory element binding proteins** (SREBPs) are membrane-bound transcription factors that control the metabolism of cholesterol and fatty acids in animal cells. Two SREBPs, designated **SREBP-1** and **SREBP-2**, have been isolated and cloned from several mammalian species. Human SREBP-1 and -2 are ~ 50% identical in amino acid sequence. They share the tripartite structure, and they both have the capacity to activate the same genes. Although the two proteins can form heterodimers, this does not appear necessary for their function.

SREBP2: Rat- 1133 aa; human- 1141 aa; mouse- 1130 aa;, ~121.6 kDa) has ubiquitous expression. SREBP-2 regualtes cholesterol synthesis by activating transcription of genese for HMG-CoA reductase and other enzymes of the cholesterol synthetic pathway. SREBP-2 is. Under basal conditions, SREBP is bound to the ER membrane as glycosylated precursor. At low cholesterol the SCAP/SREBP complex is recruited into COPII vesicles for export from the ER. In the Golgi complex SREBPs are cleaved sequentially by site-1 and site-2 protease. The first cleavage by site-1 protease occurs within the luminal loop, the second cleavage by site-2 protease occurs within the first transmembrane domain and releases the transcription factor from the Golgi membrane. Apoptosis triggers cleavage by the cysteine proteases caspase-3 and caspase-7. Upon cholesterol depletion, the protein is cleaved to its active form (50-68 kda) and transloated to the nucleus to stimulate gene transcription.

Source of Antigen, Antibodies

Antigen	15- aa peptide of Human SREBP2 (SRBP2, Protein accession # Q12772; ref. 1); designated as **#SREBP23-P** control/blocking peptide conjugated to KLH
Epitope	~middle region cytoplsmic llop
Antibody host/type	Rabbit, Polyclonal IgG (Cat # **SREBP23-A),** purified over antigen-Agarose
Secondary Ab	Cat # 20320, goat anti-rabbit IgG-HRP (AP, biotin, FITC conjugates also available).
-ve Control Ab	Non-immune rabbit IgG (Cat # 20009-1) to be used as –ve control for ELISA, WB, IHC etc.

Form & Storage of Antibodies/Peptide Control

Affinity pure IgG

100 ug/100ul solution lyophilized powder

Supplied in **Buffer**: PBS+0.1% BSA

Reconstitute powder in PBS at 1mg/ml

Control/blocking peptide

100 ug/100 ul solution lyophilized powder

Supplied in Buffer: PBS pH 7.5

Reconstitute powder in PBS at 1 mg/ml

Storage

Short-term: unopened, undiluted vials for less than a week at 4°C.

Long-term: at –20°C or below in suitable aliquots after reconstitution. Do not freeze and thaw or store working, diluted solutions.

Stability: 6-12 months at –20°C or below.

Human SREBP-2 protein (~95 Kda) was expressed as GST-tag protein in E. coli and purified (>95%). For Western blot +ve control (**Cat # SREBP23-C**) is supplied in SDS-PAGE sample buffer (reduced). Load 10 ul/lane of **SREBP23**-C for good visibility with antibody Cat # **SREBP23**-A. Store at –20oC in suitable size aliquots. SDS may crystallize in cold conditions. It should redissolve by warming before taking it from the stock. It should be heated once prior to loading on gels. If the product has been stored for several weeks, then it may be preferable to add 5 ul of fresh 2x sample buffer per 10 ul of the **SREBP23**-C solution prior to heating and loading on gels. This preparation is not biologically active. It is not suitable for ELISA or other applications where native protein is required. Do not freeze, thaw, or heat repeatedly

Recommended Usage

Western Blotting: 1-10 µg/ml; using affinity pure antibody (chemiluminescence technique). ~15 kda and 55-60 Kda precuros and active forms. Positive control is ~95 kda due to the GST (native SREBP2 ~68 kda).

ELISA: 1:100K; using 50-100 ng control peptide/well.

Histochemistry & Immunofluorescence: Not tested; we recommend the use of affinity purified antibody at 2-10 µg/ml.

Specificity & Cross-reactivity

Human SREBP23-P peptide sequence is 100% conserved in mouse, rat, chicken chimp, pig, 93% in frog SREBP2/SRBP2. Due to the location of the antibodyepitope, antibody #SREBP23-A detects both the precurson (~125 kda) and the cleaved active forms (55-60 kda). The SREBP23-P is specific for SREBP2 and has no significant conservation in SREBP1 or other proteins.. Antibody cross-reactivity in various species is not known. The control peptide, because of its low mol. Wt (<3 kDa), is not suitable for Western. It should be used for ELISA or antibody blocking experiments (use 5-10 ug control peptide per 1 ug of aff pure IgG or 1 ul antiserum) to confirm antibody specificity (see detailed protocol at: www.4adi.com\data\abblock.html).

General References: Ye J (2000) PNAS 97, 5123-5128; Lee SJ (2003) Science 302, 1571-1575; Duncan EA (1998) JBC 272, 17801;

List of related items, data sheets, and publications, using ADI antibodies is posted on the web site

*This product is for in vitro research use only.

Related material available from ADI

Antibodies to Human, mouse and rat Sterol regulatory element binding proteins:

SREBP23-A-P-C 90707A

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