Human S100A2 Rabbit Polyclonal Antibody

Cat# CY-P1040

50 µg (1.0 mg/mL x 50 µL)

Clone Name	Applications	Species Cross-Reactivity	Molecular Wt.	Source Isotype
-	WB	H	11 kDa	Rabbit IgG

Background

S100A2 is a member of the subfamily of S100 Ca2+-binding proteins, characterized by two distinct EF-hand structural motifs. It is a homodimeric protein that upon binding of calcium undergoes a conformational change (1). The S100A2 protein has been first detected in lung and kidney and is mainly expressed in a subset of tissues and cells such as breast epithelia and liver (2- 4). Interestingly the cDNA coding for the S100A2 protein was identified as a novel tumor suppressor gene by subtractive hybridization between normal and tumor derived human mammary epithelial cells (5). Expression studies showed that the S100A2 gene is markedly down-regulated in several tumor tissues of various origins like melanomas (6) and breast carcinoma (7). Moreover, growth factors were reported to alter the S100A2 gene expression at late G1/S-phase, indicating that S100A2 is cell cycle-regulated (8). Site-specific DNA methylation of the S100A2 gene promoter region in normal versus tumorigenic breast cancer cell lines indicated repression of gene expression in tumor cells, thus suggesting a role for S100A2 in suppression of tumor cell growth and possibly inhibition of tumor progression (7). By contrast, S100A2 overexpression was recently found to correlate with prognosis in ovarian, gastric, and lung cancers (9-11). Taken together, the role of S100A2 in carcinogenesis remains controversial.

Specificity/Sensitivity: The Human S100A2 Antibody detects endogenous levels of S100A2 protein.

Source/Purification: The antibody is produced by immunizing rabbit with a recombinant human S100A2, corresponding full length of human S100A2, expressed in *E. coli*. IgG is purified by immunoaffinity chromatography.

Recommended Antibody Dilutions: Western blotting: 1-2 µg/mL.

Storage: Supplied in 20 mM phosphate buffer (pH 7.5), 300 mM NaCl, 50 % glycerol. Store at -20°C.

Applications Key: WB: Western **IP:** Immunoprecipitation **IHC:** Immunohistochemistry **IC:** Immunocytochemistry **F:** Flow cytometry **E:** ELISA **FP:** Fluorescence Polarization assay
Species Cross-Reactivity Key: H: human **M:** mouse **R:** rat **Hm:** hamster **Mk:** monkey **Mi:** mink **C:** chicken **X:** *Xenopus* **Z:** zebra fish **All:** all species expected Species enclosed in parentheses are predicted to react based on 100% sequence homology.

General References:

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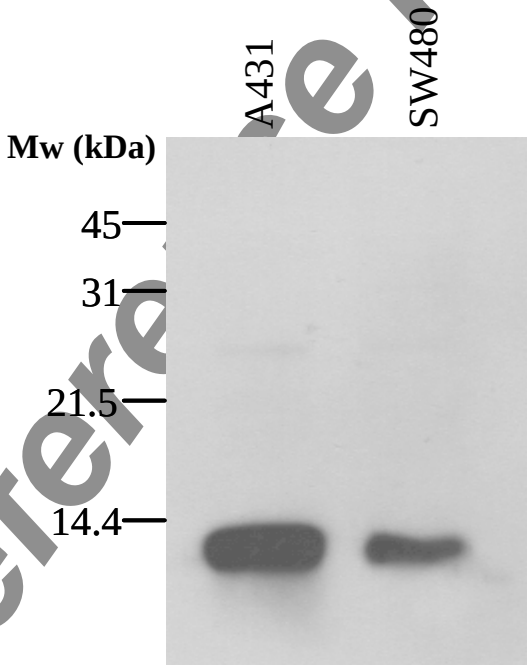
Fig.1 Western blot analysis of Human S100A2



Western Immunoblotting Protocol

Solutions and Reagents

Note: Prepare solutions with Milli-Q or equivalently purified water.

Transfer Buffer: 25 mM Tris base, 0.2 M glycine, 20% methanol (pH 8.5)
SDS Sample Buffer (1X): 62.5 mM Tris-HCl (pH 6.8 at 25°C), 2% w/v SDS, 10% glycerol, 50 mM DTT, 0.01% w/v bromophenol blue or phenol red
Blocking Buffer: 1X TBS, 0.1% Tween-20 with 5% w/v nonfat dry milk; for 150 mL, add 15 mL 10X TBS to 135 mL water, mix. Add 7.5 g nonfat dry milk and mix well. While stirring, add 0.15 mL Tween-20 (100%).
10X TBS (Tris-buffered saline): To prepare 1 liter of 10X TBS: 24.2 g Tris base, 80 g NaCl; adjust pH to 7.6 with HCl (use at 1X).
Primary Antibody Dilution Buffer: 1X TBS, 0.1% Tween-20 with 5% blocking agent for 20 mL, add 2 mL 10X TBS to 18 ml water, mix. Add 1.0 g BSA and mix well. While stirring, add 20 µL Tween-20 (100%).
Chemiluminescent HRP Detection: secondary anti-rabbit antibody conjugated to horseradish peroxidase (HRP), ECL™ chemiluminescent reagent (Amersham Pharmacia)
Wash Buffer TBS/T: 1X TBS, 0.1% Tween-20
Blotting Membrane: This protocol has been optimized for nitrocellulose membranes, which we recommend. PVDF membranes may also be used.

Protein Blotting

A general protocol for sample preparation is described below.

1. Wash hair (3 cm x 3-5) twice with dH_2O.
2. Add 1X SDS Sample Buffer (40 µL per hair sample (3 cm x 3-5)).
3. Sonicate for 10–15 seconds
4. Heat a 40 µL sample to 95–100°C for 5 minutes, cool on ice.
5. Microcentrifuge for 5 minutes.
6. Load 10-20 µL onto SDS-PAGE gel (10 cm x 10 cm).
7. Electrotransfer to nitrocellulose membrane.

Membrane Blocking and Antibody Incubations

Note: Volumes are for 10 cm x 10 cm (100 cm^2) of membrane; for different sized membranes, adjust volumes accordingly.

1. (Optional) After transfer, wash nitrocellulose membrane with 25 mL TBS for 5 minutes at room temperature.
2. Incubate membrane in 25 mL of Blocking Buffer for 1 hour at room temperature.
3. Wash 3 times for 5 minutes each with 15 ml of TBS/T.
4. Incubate membrane and primary antibody (at the appropriate dilution) in 10 mL Primary Antibody Dilution Buffer with gentle agitation overnight at 4°C.
5. Wash 3 times for 5 minutes each with 15 mL of TBS/T.
6. Incubate membrane with HRP-conjugated secondary antibody (1:3000 in 10 mL of Blocking Buffer with gentle agitation for 1 hour at room temperature.
7. Wash 3 times for 5 minutes each with 15 mL of TBS/T.

Detection of Proteins

1. Incubate membrane with 4 mL ECL™ with gentle agitation for 1 minute at room temperature.
2. Drain membrane of excess developing solution, do not let dry, wrap in plastic wrap and expose to x-ray film. An initial ten-second exposure should indicate the proper exposure time.

Related Products

*** CircuLex S100A13 ELISA Kit: Cat# CY-8057**
*** CircuLex S100A12 ELISA Kit: Cat# CY-8058**
*** CircuLex S100P ELISA Kit: Cat# CY-8060**
*** CircuLex S100A8-MRP8 ELISA Kit: Cat# CY-8061**
*** CircuLex S100A9-MRP14 ELISA Kit: Cat# CY-8062**
*** CircuLex S100A11 ELISA Kit: Cat# CY-8063**
*** CircuLex S100A14 ELISA Kit: Cat# CY-8064**
*** CircuLex S100A7/Psoriasin ELISA Kit: Cat# CY-8073**
*** CircuLex S100A4 ELISA Kit Ver.2: Cat# CY-8086**

*** Anti-Human S100A3 (Clone YK-3E3): Cat# CY-M1039**
*** Anti-Human S100A4 (p9Ka): Cat# CY-P1026**
*** Anti-Human S100P: Cat# CY-P1028**
*** Anti-Human S100A10: Cat# CY-P1033**
*** Anti-Human S100A16: Cat# CY-P1034**
*** Anti-Human S100A3: Cat# CY-P1039**
*** Anti-Human S100A2: Cat# CY-P1040**

*** Human S100B: Cat# CY-R2250**
*** Human S100A1: Cat# CY-R2251**
*** Human S100A2: Cat# CY-R2252**
*** Human S100A3: Cat# CY-R2253**
*** Human S100A4: Cat# CY-R2254**
*** Human S100A5: Cat# CY-R2255**
*** Human S100A6: Cat# CY-R2256**
*** Human S100A7: Cat# CY-R2257**
*** Human S100A8: Cat# CY-R2258**
*** Human S100A9: Cat# CY-R2259-G**
*** Human S100A9: Cat# CY-R2259-H**
*** Human S100A10: Cat# CY-R2260**
*** Human S100A12: Cat# CY-R2262-G**
*** Human S100A12: Cat# CY-R2262-H**
*** Human S100A13: Cat# CY-R2263**
*** Human S100A14: Cat# CY-R2264**
*** Human S100A16: Cat# CY-R2266**
*** Human S100P: Cat# CY-R2267**
*** Human S100A11: Cat# CY-R2269**

*** Human S100A1 Low Endotoxin: Cat# CY-R2451**
*** Human S100A3 Low Endotoxin: Cat# CY-R2453**
*** Human S100A4 Low Endotoxin: Cat# CY-R2454**
*** Human S100A7 Low Endotoxin: Cat# CY-R2457**
*** Human S100A8 Low Endotoxin: Cat# CY-R2458**
*** Human S100A9 Low Endotoxin: Cat# CY-R2459-G**
*** Human S100A11 Low Endotoxin: Cat# CY-R2461**
*** Human S100A12 Low Endotoxin: Cat# CY-R2462-G**
*** Human S100A14 Low Endotoxin: Cat# CY-R2464**
*** Human S100P Low Endotoxin: Cat# CY-R2467**

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