

## band 3 (H-105): sc-20657

### BACKGROUND

Band 3, also designated AE1, is an erythrocyte membrane glycoprotein that contributes to cell structural integrity and mediates exchange of chloride and bicarbonate across the phospholipid bilayer. The diverse functions of the approximately 900 amino acid protein are mediated by 2 distinct domains. The amino terminal domain, also known as cdb3 for cytoplasmic domain of erythrocyte membrane band 3, acts as an attachment site for the erythrocyte skeleton by binding ankyrin. The carboxy-terminal, membrane-associated domain carries out exchange transport of anions. Degradation of band 3 can generate an aging antigen known as senescent cell antigen, or SCA, which is expressed on old cells and marks them for removal by the immune system. An isoform of band 3, which lacks the first 65 amino acids and does not bind ankyrin, is expressed in kidney.

### REFERENCES

1. Brock, C.J., et al. 1983. The human erythrocyte anion-transport protein. Partial amino acid sequence, conformation and a possible molecular mechanism for anion exchange. *Biochem. J.* 213: 577-586.
2. Kollert-Jons, A., et al. 1993. Anion exchanger 1 in human kidney and oncocyoma differs from erythroid AE1 in its NH<sub>2</sub> terminus. *Am. J. Physiol.* 265: F813-F821.
3. Jay, D.G. 1996. Role of band 3 in homeostasis and cell shape. *Cell* 86: 853-854.

### CHROMOSOMAL LOCATION

Genetic locus: SLC4A1 (human) mapping to 17q21.31.

### SOURCE

band 3 (H-105) is a rabbit polyclonal antibody raised against amino acids 1-105 mapping at the N-terminus of band 3 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.

### APPLICATIONS

band 3 (H-105) is recommended for detection of band 3 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], 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).

Suitable for use as control antibody for band 3 siRNA (h): sc-42735, band 3 shRNA Plasmid (h): sc-42735-SH and band 3 shRNA (h) Lentiviral Particles: sc-42735-V.

Molecular Weight of band 3: 95 kDa.

Positive Controls: Caki-1 cell lysate: sc-2224 or HeLa whole cell lysate: sc-2200.

### RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/ 2.0 ml). 3) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

### SELECT PRODUCT CITATIONS

1. Yajima, A., et al. 2008. Hsa, an adhesin of *Streptococcus gordonii* DL1, binds to α2-3-linked sialic acid on Glycophorin A of the erythrocyte membrane. *Microbiol. Immunol.* 52: 69-77.
2. Antonelou, M.H., et al. 2011. Oxidative stress-associated shape transformation and membrane proteome remodeling in erythrocytes of end stage renal disease patients on hemodialysis. *J. Proteomics* 74: 2441-2452.
3. Antonelou, M.H., et al. 2011. Apolipoprotein J/clusterin in human erythrocytes is involved in the molecular process of defected material disposal during vesiculation. *PLoS ONE* 6: e26033.

### 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.



Try **band 3 (A-6): sc-133190** or **band 3 (BIII 136): sc-58695**, our highly recommended monoclonal alternatives to band 3 (H-105).