

# connexin 25 (E-13): sc-246318

## BACKGROUND

The connexin family of proteins form hexameric complexes called "connexons" that facilitate movement of low molecular weight proteins between cells via gap junctions. Connexin proteins share a common topology of four transmembrane  $\alpha$ -helical domains, two extracellular loops, a cytoplasmic loop and cytoplasmic N- and C-termini. Many of the key functional differences arise from specific amino acid substitutions in the most highly conserved domains, the transmembrane and extracellular regions. Each of the approximately 20 connexin isoforms produces channels with distinct permeabilities and electrical and chemical sensitivities; therefore, one connexin usually cannot fully substitute for another. Consequently, a wide variety of malignant phenotypes associate with decreased connexin expression and gap junction communication, dependent on the particular connexin that is affected. Connexin 25, also known as GJB7 (gap junction protein,  $\beta$  7) or CX25, is a 223 amino acid multi-pass membrane protein that is weakly expressed in placenta. Belonging to the connexin family and the  $\beta$ -type (group I) subfamily, connexin 25 is encoded by a gene located on human chromosome 6q14.3.

## REFERENCES

1. von Maltzahn, J., et al. 2004. The novel mouse connexin39 gene is expressed in developing striated muscle fibers. *J. Cell Sci.* 117: 5381-5392.
2. Xia, C.H., et al. 2006. Diverse gap junctions modulate distinct mechanisms for fiber cell formation during lens development and cataractogenesis. *Development* 133: 2033-2040.
3. Dunia, I., et al. 2006. Structural and immunocytochemical alterations in eye lens fiber cells from Cx46 and Cx50 knockout mice. *Eur. J. Cell Biol.* 85: 729-752.
4. Xia, C.H., et al. 2006. Absence of  $\alpha$ 3 (Cx46) and  $\alpha$ 8 (Cx50) connexins leads to cataracts by affecting lens inner fiber cells. *Exp. Eye Res.* 83: 688-696.
5. Xia, C.H., et al. 2006. Knock-in of  $\alpha$ 3 connexin prevents severe cataracts caused by an  $\alpha$ 8 point mutation. *J. Cell Sci.* 119: 2138-2144.
6. Tang, Y., et al. 2007. Age-related cataracts in  $\alpha$ 3Cx46-knockout mice are dependent on a calpain 3 isoform. *Invest. Ophthalmol. Vis. Sci.* 48: 2685-2694.
7. Cheng, C., et al. 2008. Gap junction communication influences intercellular protein distribution in the lens. *Exp. Eye Res.* 86: 966-974.
8. Hoang, Q.V., et al. 2010. Functional analysis of hemichannels and gap-junctional channels formed by connexins 43 and 46. *Mol. Vis.* 16: 1343-1352.

## CHROMOSOMAL LOCATION

Genetic locus: GJB7 (human) mapping to 6q14.3.

## SOURCE

connexin 25 (E-13) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an extracellular domain of connexin 25 of human origin.

## PRODUCT

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

Blocking peptide available for competition studies, sc-246318 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

connexin 25 (E-13) is recommended for detection of connexin 25 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 other connexin family members.

connexin 25 (E-13) is also recommended for detection of connexin 25 in additional species, including equine, canine and porcine.

Suitable for use as control antibody for connexin 25 siRNA (h): sc-95275, connexin 25 shRNA Plasmid (h): sc-95275-SH and connexin 25 shRNA (h) Lentiviral Particles: sc-95275-V.

Molecular Weight of connexin 25: 26 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](http://www.scbt.com) or our catalog for detailed protocols and support products.