SANTA CRUZ BIOTECHNOLOGY, INC.

Dpl (G-20): sc-16863

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Prion diseases or transmissible spongiform encephalopathies (TSEs) are manifested as genetic, infectious or sporadic, lethal neurodegenerative disorders involving alterations of the prion protein (PrP). Infectious PrPSc is highly expressed in the brain of animals affected by TSEs, including scrapie in sheep, BSE in cattle, and Cruetzfeldt-Jacob disease in humans. The PRND gene locus, located on human chromosome 20p, encodes for the doppel protein (Dpl), which exhibits approximately 25% sequence homology with PrP. Dpl is characterized by an alpha-helical conformation, intramolecular disulfide bonds, and two N-linked oligosaccharides, and it is presented on the cell surface by a glycosylphosphatidylinositol anchor. Dpl is highly expressed in adult testis and heart and is detectable in the brain of neonatal mice. Dpl does not appear to contribute to prion disease progression, but ectopic expression of Dpl is implicated in neuronal degeneration of ataxic PRP-deficient mice. Dpl is also thought to play a role in angiogenesis, specifically maturation of the blood-brain barrier.

REFERENCES

1. Prusiner, S.B. 1998. Prions. Proc. Natl. Acad. Sci. USA 95: 13363-13383.
2. Lee, I.Y., et al. 1998. Complete genomic sequence and analysis of the prion protein gene region from three mammalian species. Genome Res. 8: 1022-1037.
3. Mead, S., et al. 2000. Examination of the human prion protein-like gene doppel for genetic susceptibility to sporadic and variant Creutzfeldt-Jakob disease. Neurosci. Lett. 290: 117-120.

CHROMOSOMAL LOCATION

Genetic locus: PRND (human) mapping to 20p13; Prnd (mouse) mapping to 2 F2.

SOURCE

Dpl (G-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of Dpl 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-16863 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

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 or our catalog for detailed protocols and support products.

APPLICATIONS

Dpl (G-20) is recommended for detection of Dpl of mouse, rat and 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).

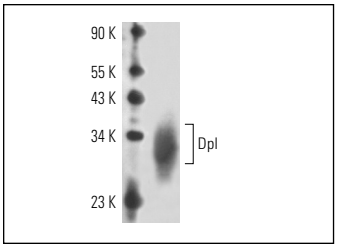
Dpl (G-20) is also recommended for detection of Dpl in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for Dpl siRNA (h): sc-42204, Dpl siRNA (m): sc-42205, Dpl shRNA Plasmid (h): sc-42204-SH, Dpl shRNA Plasmid (m): sc-42205-SH, Dpl shRNA (h) Lentiviral Particles: sc-42204-V and Dpl shRNA (m) Lentiviral Particles: sc-42205-V.

Molecular Weight of Dpl: 34 kDa.

Positive Controls: mouse brain extract: sc-2253 or mouse testis extract: sc-2405.

DATA



Dpl (G-20): sc-16863. Western blot analysis of Dpl expression in mouse testis tissue extract.

SELECT PRODUCT CITATIONS

1. Behrens, A., et al. 2002. Absence of the prion protein homologue doppel causes male sterility. EMBO J. 21: 3652-3658.
2. Yamaguchi, N., et al. 2004. Doppel-induced Purkinje cell death is stoichiometrically abrogated by prion protein. Biochem. Biophys. Res. Commun. 319: 1247-1252.
3. Serres, C., et al. 2006. Spatio-developmental distribution of the prion-like protein doppel in mammalian testis: a comparative analysis focusing on its presence in the acrosome of spermatids. Biol. Reprod. 74: 816-823.
4. Lötscher, M., et al. 2007. Induced prion protein controls immune-activated retroviruses in the mouse spleen. PLoS ONE 2: e1158.
5. Sbalchiero, E., et al. 2008. Altered cellular distribution and sub-cellular sorting of doppel (Dpl) protein in human astrocytoma cell lines. Cell. Oncol. 30: 337-347.
6. Kasimanickam, V., et al. 2012. Association between mRNA abundance of functional sperm function proteins and fertility of Holstein bulls. Theriogenology 78: 2007.e2-2019.e2.