SANTA CRUZ BIOTECHNOLOGY, INC.

Distal-less (dF-20): sc-15858

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Drosophila melanogaster is a proven and effective model for studying developmental and cellular processes common to higher eukaryotes. Approximately 13,600 genes have been elucidated from more than 120 megabases of euchromatin, and they are organized among the chromosomes 2, 3, 4, X and Y, with the Y chromosome being predominately heterochromatic. *Drosophila* genes can be categorized based on the type of protein for which they encode and are represented by six major classifications, which include intracellular signaling proteins, transmembrane proteins, RNA binding proteins, secreted factors, transcription regulators (basic helix-loop-helix, homeodomain containing, zinc finger containing, and chromatin associated) or other functional proteins. The *Drosophila* protein Distal-less is a homeodomain containing transcription factor that is the first genetic signal to define the termini of appendages and regulate appendage growth in the developing zygote.

REFERENCES

1. Adams, M.D., et al. 2000. The genome sequence of *Drosophila melanogaster*. Science 287: 2185-2195.
2. Dong, P.D., et al. 2001. Proximodistal domain specification and interactions in developing *Drosophila* appendages. Development 128: 2365-2372.
3. Dong, P.D., et al. 2002. Distal-less and homo-thorax regulate multiple targets to pattern the *Drosophila* antenna. Development 129: 1967-1974.
4. Panganiban, G. and Rubenstein, J.L. 2002. Developmental functions of the Distal-less/Dlx homeobox genes. Development 129: 4371-4386.
5. Lowe, C.J., et al. 2002. Gene expression and larval evolution: changing roles of Distal-less and orthodenticle in echinoderm larvae. Evol. Dev. 4: 111-123.
6. Robledo, R.F., et al. 2002. The Dlx-5 and Dlx-6 homeobox genes are essential for craniofacial, axial, and appendicular skeletal development. Genes Dev. 16: 1089-1101.
7. Williams, T.A., et al. 2002. A complex role for Distal-less in crustacean appendage development. Dev. Biol. 241: 302-312.
8. Jockusch, E.L., et al. 2004. The evolution of patterning of serially homologous appendages in insects. Dev. Genes Evol. 214: 324-338.
9. Dworkin, I. 2005. Evidence for canalization of Distal-less function in the leg of *Drosophila melanogaster*. Evol. Dev. 7: 89-100.

SOURCE

Distal-less (dF-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of Distal-less of *Drosophila melanogaster* 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-15858 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

Distal-less (dF-20) is recommended for detection of Distal-less of *Drosophila melanogaster* 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).

Molecular Weight of Distal-less: 35 kDa.

Positive Controls: Schneider's *Drosophila* line 2 whole cell lysate: sc-364794.

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.

SELECT PRODUCT CITATIONS

1. Halachmi, N., et al. 2007. Additional sex combs affects antennal development by means of spatially restricted repression of Antp and wg. Dev. Dyn. 236: 2118-2130.
2. Agelopoulos, M., et al. 2012. Developmental regulation of chromatin conformation by Hox proteins in *Drosophila.* Cell Rep. 1: 350-359.

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.