SANTA CRUZ BIOTECHNOLOGY, INC.

ESC (F-6): sc-390300

BACKGROUND

In *Drosophila melanogaster,* segment identity is determined by specific expression of homeotic genes (Hox). The Hox expression pattern is first initiated by gap and pair-rule genes and then maintained by genes of the Polycomb-group (Pc-G) and the trithorax-group (trx-G). The extra sex combs (ESC) gene of *Drosophila* and its mammalian homologue embryonic ectoderm development (EED) play pivotal roles in establishing Polycomb-group (Pc-G) mediated transcriptional silencing of regulatory genes during early development. Enhancer of zeste E(z) is a PcG protein that binds directly to ESC, and is present along with ESC in a complex in *Drosophila* embryos. In the early embryo E(z) is found in a complex that includes ESC and is recruited to Polycomb response elements.

REFERENCES

1. van Lohuizen, M., Tijms, M., Voncken, J.W., Schumacher, A., Magnuson, T. and Wientjens, E. 1998. Interaction of mouse polycomb-group (Pc-G) proteins Enx1 and Enx2 with Eed: indication for separate Pc-G complexes. Mol. Cell. Biol. 18: 3572-3579.
2. Lopez, A., Higuet, D., Rosset, R., Deutsch, J. and Peronnet, F. 2001. corto genetically interacts with Pc-G and trx-G genes and maintains the anterior boundary of Ultrabithorax expression in *Drosophila* larvae. Mol. Genet. Genomics 266: 572-583.
3. O'Connell, S., Wang, L., Robert, S., Jones, C.A., Saint, R. and Jones, R.S. 2001. Polycomblike PHD fingers mediate conserved interaction with enhancer of zeste protein. J. Biol. Chem. 276: 43065-43073.
4. Showell, C. and Cunliffe, V.T. 2002. Identification of putative interaction partners for the *Xenopus* Polycomb-group protein Xeed. Gene 291: 95-104.
5. Czermin, B., Melfi, R., McCabe, D., Seitz, V., Imhof, A. and Pirrotta, V. 2002. *Drosophila* enhancer of Zeste/ESC complexes have a Histone H3 methyltransferase activity that marks chromosomal Polycomb sites. Cell 111: 185-196.

SOURCE

ESC (F-6) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 11-49 near the N-terminus of ESC of *Drosophila melanogaster* origin.

PRODUCT

Each vial contains 200 µg IgM kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-390300 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

APPLICATIONS

ESC (F-6) is recommended for detection of ESC of *Drosophila melanogaster* origin by Western Blotting (starting dilution 1:100, 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).

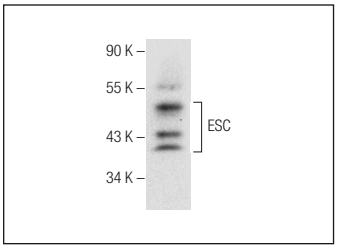
Molecular Weight of ESC: 53 kDa.

Positive Controls: *Drosophila* whole cell lysate.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein L-Agarose: sc-2336 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



ESC (F-6): sc-390300. Western blot analysis of ESC expression in *Drosophila* whole cell lysate.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.