SANTA CRUZ BIOTECHNOLOGY, INC.

E2A (1-584): sc-4083

BACKGROUND

Transcription factor 3 (E47, E12, E2A immunoglobulin enhancer binding factors E12/E47, E2A, ITF1, TCF3) influences gene expression during B cell maturation. Differentiation of myogenic cells is regulated by multiple positively and negatively acting factors. One well characterized family of helix-loop-helix (HLH) proteins known to play an important role in the regulation of muscle cell development includes Myo D, myogenin, Myf-5 andherculin). Myo D transcription factors form heterodimers with products of a more widely expressed family of bHLH genes, the E family, which consists of at least three distinct genes: E2A, IF2 and HEB. Myo D-E heterodimers bind avidly to consensus (CANNTG) E box target sites that are functionally important elements in the upstream regulatory sequences of many muscle-specific terminal differentiation genes. Both homo- and hetero-oligomers of these proteins are able to distinguish very closely related E box proteins and are believed to play important roles in lineage-specific gene expression.

REFERENCES

1. Braun, T., et al. 1989. A novel human muscle factor related to but distinct from MyoD1 induces myogenic conversion in 10T1/2 fibroblasts. EMBO J. 8: 701-709.
2. Rhodes, S.J., et al. 1989. Identification of MRF4: a new member of the muscle regulatory factor gene family. Genes Dev. 3: 2050-2061.
3. Wright, W.E., et al. 1989. Myogenin, a factor regulating myogenesis, has a domain homologous to MyoD. Cell 56: 607-617.
4. Murre, C., et al. 1989. Interactions between heterologous helix-loop-helix proteins generate complexes that bind specifically to a common DNA sequence. Cell 58: 537-544.
5. Miner, J.H., et al. 1990. Herculin, a fourth member of the MyoD family of myogenic regulatory genes. Proc. Natl. Acad. Sci. USA 87: 1089-1093.
6. Anthony-Cahill, S.J., et al. 1992. Molecular characterization of helix-loop-helix peptides. Science 255: 979-983.
7. Hu, J., et al. 1992. HEB, a helix-loop-helix protein related to E2A and ITF2 that can modulate the DNA-binding ability of myogenic regulatory factors. Mol. Cell. Biol. 12: 1031-1042.
8. Aronheim, A., et al. 1993. Cell-specific expression of helix-loop-helix transcription factors encoded by the E2A gene. Nucleic Acids Res. 21: 1601-1606.
9. King, A.M., et al. 2007. Accelerated Notch-dependent degradation of E47 proteins in aged B cell precursors is associated with increased ERK MAPK activation. J. Immunol. 178: 3521-3529.

CHROMOSOMAL LOCATION

Genetic locus: TCF3 (human) mapping to 19p13.3; Tcfe2a (mouse) mapping to 10 C1.

SOURCE

E2A (1-584) is expressed in *E. coli* as an 85 kDa tagged fusion protein corresponding to amino acids 1-584 representing full length E2A protein of human origin.

PRODUCT

E2A (1-584) is purified from bacterial lysates (> 98%) by glutathione agarose affinity chromatography; supplied as 50 µg purified protein in PBS containing 5 mM DTT and 50% glycerol.

Available as biotin conjugate, sc-4083 B, 200 µg/1 ml.

Available as a Western blotting control; 10 µg in 0.1 ml SDS-PAGE loading buffer, E2A (1-584): sc-4083 WB.

APPLICATIONS

E2A (1-584) is suitable as a Western Blotting control for sc-349, sc-416 and sc-763.

Molecular Weight (predicted) of E2A: 67 kDa.

Molecular Weight (observed) of E2A: 63-92 kDa.

SELECT PRODUCT CITATIONS

1. Hertel, C.B., et al. 2002. Loss of B cell identity correlates with loss of B cell-specific transcription factors in Hodgkin/Reed-Sternberg cells of classical Hodgkin lymphoma. Oncogene 21: 4908-4920.

STORAGE

Store at -20° C; 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.