SANTA CRUZ BIOTECHNOLOGY, INC.

MyoD (1-318): sc-4080

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

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 and Myf-6 (also designated MRF-4 or herculin). Of interest, most muscle cells express either Myo D or Myf-5 in the committed state, but when induced to differentiate, all turn on expression of myogenin. 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.

REFERENCES

1. Wright, W.E., Sassoon, D.A., and Lin, V.K. 1989. Myogenin, a factor regulating myogenesis, has a domain homologous to Myo D. Cell 56: 607-617.
2. Braun, T., Buschhausen-Denker, G., Bober, E., Tannich, E., and Arnold, H.H. 1989. A novel human muscle factor related to but distinct from Myo D1 induces myogenic conversion in 10T1/2 fibroblasts. EMBO J. 8: 701-709.
3. Rhodes, S.J. and Konieczny, S.F. 1989. Identification of MRF4: a new member of the muscle regulatory factor gene family. Genes Dev. 3: 2050-2061.
4. Braun, T., Bober, E., Winter, B., Rosenthal, N., and Arnold, H.H. 1990. Myf-6, a new member of the human gene family of myogenic determination factors: evidence for a gene cluster on chromosome 12. EMBO J. 9: 821-831.
5. Miner, J.H. and Wold, B. 1990. Herculin, a fourth member of the Myo D family of myogenic regulatory genes. Proc. Natl. Acad. Sci. USA 87: 1089-1093.
6. Thayer, M.J. and Weintraub, H. 1993. A cellular factor stimulates the DNA-binding activity of Myo D and E47. Proc. Natl. Acad. Sci. USA 90: 6483-6487.
7. Neuhold, L.A. and Wold, B. 1993. HLH forced dimers: tethering Myo D to E47 generates a dominant positive myogenic factor insulated from negative regulation by Id. Cell 74: 1033-1042.
8. Hollenberg, S.M., Cheng, P.F., and Weintraub, H. 1993. Use of a conditional Myo D transcription factor in studies of Myo D transactivation and muscle determination. Proc. Natl. Acad. Sci. USA 90: 8028-8032.

SOURCE

MyoD (1-318) is expressed in *E. coli* as a 65 kDa tagged fusion protein corresponding to amino acids 1-318 of the full length MyoD protein of mouse origin.

STORAGE

Store at -20° C; stable for one year from the date of shipment.

RESEARCH USE

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

PRODUCT

MyoD (1-318) 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.

APPLICATIONS

MyoD (1-318) is suitable as a Western blotting control for sc-32758, sc-71629, sc-377186 and sc-377460.

PROTOCOLS

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