

DUX3 (6L8): sc-134322

BACKGROUND

The double homeobox (DUX) proteins are encoded by 3.3-kilobase repeats found throughout the human genome. The DUX family includes DUX1, DUX2, DUX3, DUX4 and DUX5. Each of these family members contain two homeobox domains except DUX2, which contains only one homeobox domain. DUX1 and DUX5 are identical to one another and share 98% identity with DUX3 and approximately 70% identity with DUX2. The homeodomains found in DUX5 and DUX1 are similar to those found in Pax-3, Pax-7, OTX1 and OTX2. The genes encoding DUX5 and DUX3 both contain additional start sites that result in N-terminal extended isoforms. DUX4, also known as DUX10, is capable of forming homodimers. In addition, the gene encoding DUX4 maps within the D4Z4 repeat unit that has been implicated in Facioscapulohumeral muscular dystrophy (FSHD).

REFERENCES

- Ding, H., Beckers, M.C., Plaisance, S., Marynen, P., Collen, D. and Belayew, A. 1998. Characterization of a double homeodomain protein (DUX) encoded by a cDNA homologous to 3.3 kb dispersed repeated elements. *Hum. Mol. Genet.* 7: 1681-1694.
- Gabriëls, J., Beckers, M.C., Ding, H., De Vriese, A., Plaisance, S., van der Maarel, S.M., Padberg, G.W., Frants, R.R., Hewitt, J.E., Collen, D. and Belayew, A. 1999. Nucleotide sequence of the partially deleted D4Z4 locus in a patient with FSHD identifies a putative gene within each 3.3 kb element. *Gene* 236: 25-32.
- Beckers, M., Gabriëls, J., van der Maarel, S., De Vriese, A., Frants, R.R., Collen, D. and Belayew, A. 2001. Active genes in junk DNA? Characterization of DUX genes embedded within 3.3 kb repeated elements. *Gene* 264: 51-57.
- Ostlund, C., Garcia-Carrasquillo, R.M., Belayew, A. and Worman, H.J. 2005. Intracellular trafficking and dynamics of double homeodomain proteins. *Biochemistry* 44: 2378-2384.
- Dixit, M., Ansseau, E., Tassin, A., Winokur, S., Shi, R., Qian, H., Sauvage, S., Matteotti, C., van Acker, A.M., Leo, O., Figlewicz, D., Barro, M., Laoudj-Chenivesse, D., Belayew, A., Coppee, F. and Chen, Y.W. 2007. DUX4, a candidate gene of facioscapulohumeral muscular dystrophy, encodes a transcriptional activator of PITX1. *Proc. Natl. Acad. Sci. USA* 104: 18157-18162.
- Kawazu, M., Yamamoto, G., Yoshimi, M., Yamamoto, K., Asai, T., Ichikawa, M., Seo, S., Nakagawa, M., Chiba, S., Kurokawa, M. and Ogawa, S. 2007. Expression profiling of immature thymocytes revealed a novel homeobox gene that regulates double-negative thymocyte development. *J. Immunol.* 179: 5335-5345.

SOURCE

DUX3 (6L8) is a mouse monoclonal antibody raised against recombinant DUX3 protein of human origin.

PRODUCT

Each vial contains 100 µg IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

DUX3 (6L8) is recommended for detection of DUX3 of 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)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

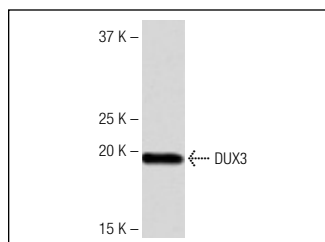
Molecular Weight of DUX3 isoforms: 22/19 kDa.

Positive Controls: human DUX3 transfected 293T 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, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).

DATA



DUX3 (6L8): sc-134322. Western blot analysis of DUX3 expression in human DUX3 transfected (A) and non-transfected (B) 293T whole cell lysates.

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 for detailed protocols and support products.