

# DUXBL (G-4): sc-137191

## 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, excluding DUX2, contains two homeobox domains. DUX2 contains only one homeobox domain. DUX1 and DUX5 are identical to one another and they share 98% identity with DUX3 and approximately 70% identity with DUX2. The genes encoding DUX5 and DUX3 both contain additional start sites that result in N-terminal extended isoforms. The homeodomains found in DUX5 and DUX1 are similar to those found in Pax-3, Pax-7, OTX1 and OTX2. 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 facioscapulo-humeral muscular dystrophy (FSHD).

## REFERENCES

1. Ding, H., et al. 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.
2. Gabriëls, J., et al. 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.
3. Beckers, M., et al. 2001. Active genes in junk DNA? Characterization of DUX genes embedded within 3.3 kb repeated elements. *Gene* 264: 51-57.
4. Ostlund, C., et al. 2005. Intracellular trafficking and dynamics of double homeodomain proteins. *Biochemistry* 44: 2378-2384.
5. Kawamura-Saito, M., et al. 2006. Fusion between CIC and DUX4 up-regulates PEA3 family genes in Ewing-like sarcomas with t(4;19)(q35;q13) translocation. *Hum. Mol. Genet.* 15: 2125-2137.
6. Kowaljow, V., et al. 2007. The DUX4 gene at the FSHD1A locus encodes a pro-apoptotic protein. *Neuromuscul. Disord.* 17: 611-623.
7. Clapp, J., et al. 2007. Evolutionary conservation of a coding function for D4Z4, the tandem DNA repeat mutated in facioscapulohumeral muscular dystrophy. *Am. J. Hum. Genet.* 81: 264-279.
8. Dixit, M., et al. 2007. DUX4, a candidate gene of facioscapulohumeral muscular dystrophy, encodes a transcriptional activator of PITX1. *Proc. Natl. Acad. Sci. USA* 104: 18157-18162.

## CHROMOSOMAL LOCATION

Genetic locus: Duxbl1 (mouse) mapping to 14 A3.

## SOURCE

DUXBL (G-4) is a mouse monoclonal antibody raised against amino acids 116-314 of DUXBL of mouse origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## APPLICATIONS

DUXBL (G-4) is recommended for detection of DUXBL of mouse and rat 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).

Suitable for use as control antibody for DUXBL siRNA (m): sc-62246, DUXBL shRNA Plasmid (m): sc-62246-SH and DUXBL shRNA (m) Lentiviral Particles: sc-62246-V.

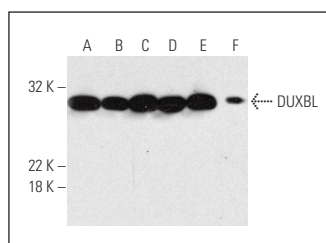
Molecular Weight of DUXBL: 38 kDa.

Positive Controls: Sol8 cell lysate: sc-2249, Sol8 nuclear extract: sc-2157 or mouse embryo extract: sc-364239.

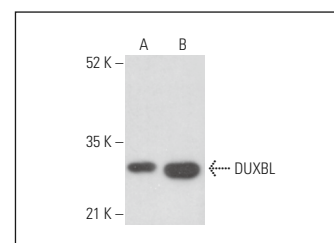
## RECOMMENDED SUPPORT REAGENTS

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 A/G PLUS-Agarose: sc-2003 (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



DUXBL (G-4): sc-137191. Western blot analysis of DUXBL expression in SP2/O (A), C2C12 (B) and Sol8 (C) whole cell lysates and Sol8 nuclear extract (D) and mouse embryo (E) and mouse skeletal muscle (F) tissue extracts.



DUXBL (G-4): sc-137191. Western blot analysis of DUXBL expression in L6 whole cell lysate (A) and NIH/3T3 nuclear extract (B).

## 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](http://www.scbt.com) for detailed protocols and support products.