



F1.652

INVESTIGATOR

Name Helen M. Blau
Address Dept. of Molecular Pharmacology, Stanford University School of Medicine, R354, Stanford, CA 94305-5332

IMMUNOGEN

Substance

Name MyHC
Origin human
Chemical Composition partially purified, pyrophosphate extracted
Developmental Stage week 15

IMMUNIZATION PROTOCOL

Donor Animal

Species mouse
Strain Balb/c

Sex

Organ and tissue spleen

Immunization

Dates immunized 1983
Amount of antigen 80 µg (4 boosts at 50, 10, 10, 100 µg)
Route of immunization IP (last boost IV)
Adjuvant CFA

FUSION

Date 1983

Myeloma cell line

Species mouse
Designation SP2/2

MONOCLONAL ANTIBODY

Isotype IgG1

Specificity

Cell Binding +
Immunohistology

Antibody competition

Species Specificity human, rodent (others?)

ANTIGEN

Chemical properties embryonic myosin

Molecular weight 200 kDa

Characterization

Immunoprecipitation
Immunoblotting +
Purification
Amino acid sequence analysis

Functional effects

Immunohistochemistry + embryonic fibers

PUBLICATIONS :

Webster, C., Silberstein, L., Hays, A.P., and Blau, H.M. (1988). Fast muscle fibers are preferentially affected in Duchenne muscular dystrophy. *Cell* 52, 503-513.

Hughes, S.M., and Blau, H.M. (1992). Muscle fiber pattern is independent of cell lineage in postnatal rodent development. *Cell* 68, 659-671.

(Continued)



F1.652 (Continued)

Cho, M., Webster, S.G., and Blau, H.M. (1993). Evidence for extrinsic regulation of slow myosin heavy chain expression during muscle fiber development. *J. Cell Biol.* 121, 795-810.

Hughes, S.M., Cho, M., Karsch-Mizrachi, I., Travis, M., Silberstein, L., Leinwand, L.A., and Blau, H.M. (1993). Three slow myosin heavy chains sequentially expressed in developing mammalian skeletal muscle. *Dev. Biol.* 158, 183-199.

Pedrosa-Domellof, F., Holmgren, Y., Lucas, C.A., Hoh, J.F.Y., and Thornell, L.-E. (2000). Human extraocular muscles: unique pattern of myosin heavy chain expression during myotube formation. *Invest. Ophthalmol. Vis. Sci.* 41(7), 1608-1616.

Stal, P.S., and Lindman, R. (2000). Characterisation of human soft palate muscles with respect to fibre types, myosins and capillary supply. *J. Anat.* 197, 275-290.

Lindman, R., Paulin, G., and Stal, P.S. (2001). Morphological characterization of the levator veli palatini muscle in children born with cleft palates. *Cleft Palate-Craniofacial J.* 38(5), 438-448.

Torgan, C.E., and Daniels, M.P. (2001). Regulation of myosin heavy chain expression during rat skeletal muscle development in vitro. *Mol. Biol. Cell* 12, 1499-1508.

Lindman, R., and Stal, P.S. (2002). Abnormal palatopharyngeal muscle morphology in sleep-disordered breathing. *J. Neurol. Sci.* 195, 11-23.

Pizza, F.X., Peterson, J.M., Baas, J.H., and Koh, T.J. (2005). Neutrophils contribute to muscle injury and impair its resolution after lengthening contractions in mice. *J. Physiol.* 562.3, 899-913.

Coletti, D., Moresi, V., Adamo, S., Molinaro, M., and Sassoon, D. (2005). Tumor necrosis factor- α gene transfer induces cachexia and inhibits muscle regeneration. *Genesis* 43, 120-128.

De Arcangelis, V., Coletti, D., Canato, M., Molinaro, M., Adamo, S., Reggiani, C., and Naro, F. (2005). Hypertrophy and transcriptional regulation induced in myogenic cell line L6-C5 by an increase of extracellular calcium. *J. Cell. Physiol.* 202, 787-795.

Sokoloff, A.J., Li, H., and Burkholder, T.J. (2007). Limited expression of slow tonic myosin heavy chain in human cranial muscles. *Muscle Nerve* 36, 183-189.

Biondi, O., Grondard, C., Lecolle, S., Deforges, S., Pariet, C., Lopes, P., Cifuentes-Diaz, C., Li, H., della Gaspera, B., Chanoine, C., and Charbonnier, F. (2008). Exercise-induced activation of NMDA receptor promotes motor unit development and survival in a type 2 spinal muscular atrophy model mouse. *J. Neurosci.* 28(4), 953-962.

Garcia-Parra, P., Naldaiz-Gastesi, N., Maroto, M., Padin, J.F., Goicoechea, M., Aiestui, A., Fernandez-Morales, J.C., Garcia-Belda, P., Lacalle, J., Alava, J.I., Garcia-Verdugo, J.M., Garcia, A.G., Izeta, A., and Lopez de Munain, A. (2013). Murine muscle engineered from dermal precursors: an in vitro model for skeletal muscle generation, degeneration, and fatty infiltration. *Tiss. Eng.* 20(1), doi:10.1089/ten.tec.2013.0146.

Zhang, Y., Davis, C., Sakellariou, G.K., Shi, Y., Kayani, A.C., Pulliam, D., Bhattacharya, A., Richardson, A., Jackson, M.J., McArdle, A., Brooks, S.V., and Van Remmen, H. (2013). CuZnSOD gene deletion targeted to skeletal muscle leads to loss of contractile force but does not cause muscle atrophy in adult mice. *Faseb J.* 27(9), 3536-3548.

ACKNOWLEDGMENTS STATEMENT

We have been asked by NICHD to ensure that all investigators include an acknowledgment in publications that benefit from the use of the DSHB's products. We suggest that the following statement be used:

“The (select: hybridoma, monoclonal antibody, or protein capture reagent,) developed by [Investigator(s) or Institution] was obtained from the Developmental Studies Hybridoma Bank, created by the NICHD of the NIH and maintained at The University of Iowa, Department of Biology, Iowa City, IA 52242.”

Please send copies of all publications resulting from the use of Bank products to:

Developmental Studies Hybridoma Bank
Department of Biology
The University of Iowa
028 Biology Building East
Iowa City, IA 52242