

Identification of three alleles for *Mus musculus* at the *Myhc-a* locus which co-segregates with *Np-2*, *Tera* and *Rib-1* on chromosome 14

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SOURCE/DESCRIPTION: The plasmid, pMHC101, contains a 0.65 kb Pst I fragment of the alpha cardiac myosin heavy chain cDNA which was cloned from a mouse heart cDNA library and inserted into the Pst I site of pBR322 (1).

POLYMORPHISM: A constant Bgl II band was found at 2.4 kb in alleles a, b and c. Three allelic forms of *Myhc-a* were detected by Bgl II digestions: bands were found at 1.9 and 4.2 kb for allele a; 1.2 and 9.0 kb for allele b; and 1.9 and 3.8 kb for allele c (Fig. 1) and are typified by A/J, C57BL/6J and DBA/2J inbred strains, respectively. Additional but less profound RFLPs were observed between A/J and C57BL/6J by Apa I, Sst I and Xba I digestions.

FREQUENCY: The *Mus musculus* strains classified as carrying the a allele - A/J, BALB/cJ, BUB/BnJ, CBA/J,C3H/HeJ, CE/J, I/LnJ, NZB/BnJ, P/J, RF/J, RIII/J, ST/bJ, YBR/Ei, 129/J; the b allele - C57BL/6J, C57BL/10J, C57L/J; and the c allele - DBA/2J, PL/J, SWR/J and SJL/J.

NOT POLYMORPHIC FOR: (A/J - C57BL/6J): Bam HI, Cla I, Eco RI, Hind III, Kpn I, Nar I, Nde I, Pst I, Pvu II, Sst II, Taq I, Xho I.

CHROMOSOMAL LOCALIZATION: Weydert et al. [1] mapped the *Myhc-a* gene near the *Np-1* locus on chromosome 14. We expanded these data by finding the same SDP for the *Myhc-a* locus as the *Np-2*, *Tera* and *Rib-1* loci in the BXD RI strains (2) and by examination of two minor histocompatibility congenic strains, B6.C-H-8^c and B10.D2(57N) H-8^b (see Fig. 1). The human *Myhc-a* locus is located on chromosome 14 (3).

MENDELIAN INHERITANCE: BXD RI strains: *Myhc-a*^b - 1, 5, 13, 20, 21, 22, 23, 24, 25, 27, 28, 30; *Myhc-a*^c - 2, 6, 8, 9, 11, 12, 14, 15, 16, 18, 19, 29, 31, 32. The *Myhc-a* locus co-segregated with *Np-1* in 42 interspecies offsprings of a (DBA/2 x *M. spretus*)F1 x DBA/2 backcross (2).

PROBE AVAILABILITY: Contact Dr. Weydert, Dept. Mol. Biol and Immunol., Pasteur Inst., 25, rue du Dr. Roux, 75015 Paris, France.

REFERENCES: 1. Weydert et al. Proc. Natl. Acad. Sci. USA. (1985) 82:7183-7. 2. Elliott et al. Cytogenet. Cell. Genet. (1986) 42:110-2. 3. Saez et al. Nucleic Acid Res. (1987) 15: 5443-59.

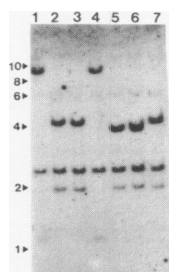


Fig. 1: Chromosomal mapping of the *Myhc-a* gene using two H-8 congenic strains. A Bgl II RFLP was identified in the C57BL/6J (1), B6.C-H-8^c (2), BALB/cJ (3), C57BL/10J (4), B10.D2(57N)/Sn, (5), DBA/2J (6) and A/J (7) inbred strains. A 1 kb ladder, obtained from BRL, determined the relative kb size of the ds DNA fragments and are presented.