Mouse skeletal alpha actin has limited restriction fragment length polymorphism and is not a member of the human 1q – mouse distal chromosome 1 syntatic group

M.F.Seldin, L.A.D'Hoostelaere and A.D.Steinberg

National Institutes of Health, Bethesda, MD 20892, USA

Source/Description: A 2.6 kb Bam HI fragment containing exons 1-3 from a mouse skeletal alpha actin (Acta) genomic clone obtained from Dr. N. Davidson (1) was utilized.

Polymorphism: Constant Bgl II bands: 2.5 kb and 6.6 kb; Variant Bgl II bands: 1.7 kb and 4.6 kb for allele a, 2.0 kb and 4.4 kb for allele b.

Frequency: Allele a: BALB/cJ, BALB/cA; Allele b: C57BL/6J, DBA/2J, AKR/J, AKR/A, C3H/HeJ, O20, STS/A, NFS.

Not polymorphic for: Eco RI, Bam HI, Hind III, Pst I, Bst EII (all above strains), Msp I, Taq I, Bgl I, Hae III, PVU II (C57BL/6J, DBA/2J).

Chromosome location: Human Acta localizes to 1p21-qter (2). The current study utilizing DNA from mouse-hamster somatic cell hybrids and RI lines (below) show that mouse Acta does not map to mouse chromosome 1.

Mendelian Inheritance: Segregates in CXS and CXB RI lines.

Probe availability: Contact Dr. N. Davidson.

Other comments: Strain distribution pattern among RI lines. CXS lines: allele a = 5,9,10, allele b = 1,2,3,4,6,7,8,11,12,13, CXB lines: allele a = E,H, allele b = D,G,I,J,K.

References

1. Hu, M.C.-T. *et al* Molec. Cell. Biol. 6:15-25, 1986.
2. Gunning, P. *et al* Proc. Natl. Acad. Sci USA 81:1813-1817, 1984.

Fig 1. Southern hybridization with mouse Acta probe. Bgl II digests of BALB/cJ (a), C57BL/6J (b) with molecular weight standards indicated to left.