Human histone 3 F2 detects RFLPs in inbred mice, cosegregates with H4F2 and does not map to possible syntenic groups on mouse distal chromosome 1 and distal chromosome 3

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Source/Description: Human histone cluster B clones pF0422 (H3) and pF0103A (H4) were derived from a human genomic library (1). A 2.1 kb Eco RI fragment (H3F2) and a 1.4 kb Eco RI, Pst I fragment (H4F2) were utilized.

Polymorphisms: Inbred strains of mice H3F2: Constant Eco RI bands: 20 kb, 9.5 kb, 5.8 kb, 4.3 kb, 2.7 kb, 2.5 kb, and 1.4 kb (weak bands: 10 kb and 15 kb). Variant Eco RI bands: Allele a = 8.6 kb, 8.2 kb, and 4.1 kb. Allele b = 8.0 kb, and 7.6 kb.

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

Not polymorphic for: No additional alleles detected in above strains with Bam HI or Hind III restriction endonuclease enzyme digests.

Chromosomal location: Human H3F2 and H4F2 localize to 1q 21 (2). The current study utilizing DNA from 29 backcross (B6 x Mus spretus)F_1 x B6 mice show multiple polymorphic bands detected with H3F2 and H4F2 probes: 1. cosegregate (see below) and 2. do not cosegregate with distal chromosome 1 (Renin, Ly-5, Spna-1) or distal chromosome 3 (EGF) mouse genes (data not shown). RI lines fail to localize H3F2 gene in mouse (see below).

Mendelian Inheritance: Segregates in BXH and OXAK RI lines.

Probe availability: Contact G. and J. Stein.

Other Comments: Strain distribution pattern among RI lines. BXH lines: Allele a = 7,10,11,12. Allele b = 2,3,4,6,8,9,14,19. OXAK lines: Allele a = 1,6,7,10,11,13,14. Allele b = 2,3,4,5,8,9,12.

References: 1. Sierra, F. et al Proc.Natl.Acad.Sci.U.S.A. 79:1795-1799, 1982. 2. Green, L. et al Science 226:838-840, 1984.

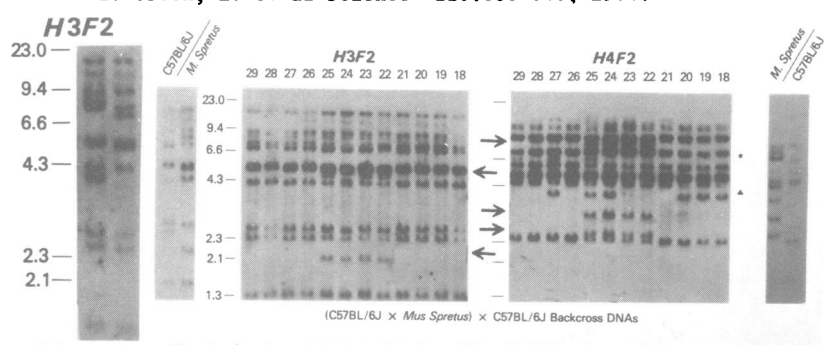

Fig. 1. Southern blot hybridization of Eco R1 DNA digest, allele a = C3H/HeJ, allele b = C57BL/6J, Arrows indicates cosegregating bands