An anonymous single copy X-chromosome clone, DXS79, from Xq26-Xq28, identifies a moderately frequent RFLP [HGM8 provisional no. DXS79]

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SOURCE AND DESCRIPTION OF CLONE: pPM101, a 2.3kb EcoRI fragment subcloned into pBR322 from the 18kb genomic insert of phage clone 07-03, isolated from a BamHI library (vector EMBL-3) containing the distal part of the long arm Xq26-Xq28 as the only known human genetic material (Murphy & Ruddle, 1985).

POLYMORPHISM: BanII (GPuG|CpyC) (New England Biolabs) identifies one invariant band at 1.6kb and a simple two-allele polymorphism with a band at either 2.4kb or 4.2kb.

FREQUENCY: Studied 34 European Caucasians: 19 female, 15 male.

2.4kb allele (A1) 0.81 ± 0.05

4.2kb allele (A2) 0.19 ± 0.05

NOT POLYMORPHIC FOR: ApaI, BamHI, BglII, BstEII, BstNI, CfoI, EcoRI, EcoRV, HaeIII, HincII, HindIII, HinfI, HpaII, KpnI, MspI, PstI, PvuII, RsaI, SacI, ScaI, TaqI, XbaI, XhoI, XmnI, all with panel of 10-12 unrelated Caucasians.

CHROMOSOMAL LOCALIZATION: Between HPRT (Xq26) and G6PD (Xq28) using a panel of translocation hybrids and chromosome-mediated gene-transfer cell lines (Murphy & Ruddle, 1985).

MENDELIAN INHERITANCE: X-linked segregation pattern observed in three families with 31 offspring of five heterozygous females (all fathers had the 2.4 kb allele): 4 daughters 2.4kb/2.4kb, 12 daughters 2.4kb/4.2kb, 11 sons 2.4kb, 4 sons 4.2kb. Also informative in CEPH pedigrees 21, 23, 1331, 1345 and IMR pedigree 884.

PROBE AVAILABILITY: Available now for collaboration; will be available after 6/86 without restriction.

OTHER COMMENTS: No problems on RFLP analysis under normally stringent conditions; routine overnight digestion with 3 units BanII/microgram genomic DNA.

REFERENCE: Murphy and Ruddle, "Isolation and regional mapping of random X sequences from the distal human X chromosome" Somatic Cell Mol. Genet. submitted, 1985.

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