A new marker on chromosome 4q, D4S138, detects two RFLPsDeborah J.Morris, Maria dos Santos, Sue Povey¹, Pascale Willem and Trefor Jenkins

MRC Human Ecogenetics Research Unit, Department of Human Genetics, School of Pathology, The South African Institute for Medical Research and University of the Witwatersrand, Johannesburg, South Africa and ¹MRC Human Biochemical Genetics Unit, University College, London, UK

SOURCE/DESCRIPTION A 14.0 kb single copy genomic DNA probe, DM32, isolated from a lambda Charon 4A HaeIII/AluI human genomic library.

POLYMORPHISM AvaII (G/G(AT)CC) (Anglian Biotechnology): Two-allele polymorphism with bands at 7.4 kb (allele A1) or 5.1 kb and 2.3 kb (allele A2). Constant bands at 3.5 kb and 2.6 kb. Msp I (C/CGG) (New England Biolabs): Two-allele polymorphism, with bands at 6.4 kb (allele B1) or 4.4 kb and 2.0 kb (allele B2). Constant fragment of 5.8 kb.

FREQUENCY: Studied unrelated South African males and females:

		59 Caucasoids	52 Negroids	36 San
AvaII:	A1 (7.4 kb)	0.38	0.38	0.36
	A2 (5.1, 2.3 kb)	0.62	0.62	0.64
		26 Caucasoids	52 Negroids	36 San
MspI:	B1 (6.4 kb)	0.14	0.55	0.62
	B2 (4.4, 2.0 kb)	0.86	0.45	0.38

NOT POLYMORPHIC FOR: BamHI, BglII, EcoRI, HincII, HindIII, MboI, PstI, PvuII, RsaI, SstI, StuI, TaqI (7 individuals tested).

CHROMOSOMAL LOCALIZATION: Probe DM32 localized to chromosome 4 using two independent panels of somatic cell hybrid lines. Localization refined to 4q21-q24 by linkage to ADH3 and EGF in CEPH pedigrees.

MENDELIAN INHERITANCE: Co-dominant segregation demonstrated in 15 South African Caucasoid families, and 16 informative CEPH pedigrees.

PROBE AVAILABILITY: Available to collaborators.

OTHER COMMENTS: AvaII RFLP can be detected by a 5.1 kb AvaII fragment isolated from DM32. MspI RFLP can be detected by either a 4.4 or 2.0 kb fragment isolated from DM32.