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LETTER

Molecular analysis of the mature T cell proliferation-1 (*MTCP-1*) gene in Xq28-linked incontinentia pigmenti

Incontinentia pigment (IP) is a male-lethal, X-linked dominant disorder with characteristic skin signs, developmental malformation of the teeth, alopecia and abnormalities of hair and nail growth (reviewed[1]). Neonatal blistering is associated with eosinophilia and rare affected males show infiltration of immune cells into tissues.[2] Skewed X-inactivation in IP patients results from early elimination of cells expressing the mutation X chromosome at about the time of birth and could involve immune selection or a growth disadvantage. IP females also have an increased incidence of a variety of tumours. The IP locus has been mapped to the telomeric 1.1 Mb of Xq28 with close linkage to the factor VIII gene.[3] One candidate, *MTCP-1* (mature T-cell proliferation-1 and also called *c6.1B*) lies 70 kb from *factor VIII*[4] and is involved in the pathogenesis of a subset of T-cell lymphoproliferative diseases (reviewed[5,6]). The normal function of *MTCP-1* transcripts is completely unknown but misregulation of this gene clearly has effects on cell survival and/or growth.[7]

Southern blot analysis of DNA from 14 unrelated IP patients from Xq28-linked families revealed no evidence for *MTCP-1* deletion or gene. *MTCP-1* coding exons 2, 3, 4, 6 and 7 as well as alternatively-processed non-coding exon 1 were amplified (sequence details) and SSCP of exons from at least 34 IP cases and four healthy female controls did not reveal either polymorphism or IP-associated changes.Table 1

The results indicate that IP is not caused either by gross rearrangement or by coding region mutations of the *MTCP-1* gene. The possibility that misregulation of the *MTCP-1* gene is a cause of IP cannot be ruled out. However, hybridisation of a probe encompassing the CpG island immediately upstream of MTCP-1 to Southern blots of IP patient DNA has not revealed evidence of expansion or rearrangement of the gene promoter. In summary, it seems highly unlikely that *MTCP-1* is the IP locus.

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Table 1 Amplification of MTCP-1 exons

Primer	*Exon*	*Primer sequence 5' to 3'*	*Annealing T°C*	*Product Size (bp)*
MTCP1aF	1a	GCC CAG CAG CAC CTG GGA AA	61	381
MTCP1aR		GTA TCG GGG GCT GTG ACT TGG		
MTCP1bF	1b	AAG ACG ACA TCT CCG CGA AC	55	403
MTCP1bR		AAG TAG CAG CAG CCA AGC TTA		
MTCP2F	2	CCT TGC TTA CTG GTG AGT TCA TT	59	290
MTCP2R		TGA GAC TGG AAT AGA AAC CAA GT		
MTCP3F	3	ACT TGG TTT CTA TTC CAG TCT CA	48	293
MTCP3R		CTC TGT TAC GAG AGT CCC AGT AC		
MTCP4F	4	TTC CAT TGT ACT GGG ACT CTC GT	59	177
MTCP4R		ATC ACC ACA ACT GAA TAG AGC CA		
MTCP6F	6	ATA TAC TGC TTG TCT CAG AAG AA	57	300
MTCP6R		TAC AAT GAA GAG AAT CTT CAG GA		
MTCP7F	7	CCT GTA CCT TAG TTC TAT GAG AT	59	274
MTCP7R		CTG GCC TGA AGA GTC AGG AGG AT		

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