Letters to the Editor

Am. J. Hum. Genet. 64:1473, 1999

Mutation Rate in Human Microsatellites

To the Editor:

It is common knowledge that mutation rates of DNA (minisatellite and microsatellite) loci can differ by orders of magnitude. Obviously, the mutation rate is closely related to the degree of polymorphism, which in turn is expressed by the respective heterozygosity rate.

In their article, Brinkmann et al. (1998) confirmed the observation that mutation events in the male germ line may be significantly more frequent than mutation events in the female germ line. They reported that the ratio of paternal to maternal mutations is an impressive 17:3. Because a similar "behavior" was already known for many DNA minisatellites, this trend could have been expected for highly polymorphic short tandem-repeat loci as well (Henke et al. 1993; Olaisen et al. 1993; Henke and Henke 1995). If this is taken into consideration, the compilation of mutations in table 1 gives rise to following questions: Why do Brinkmann et al. (1998) compile the overall number of meioses with respect to the number of mutations? If one takes into consideration that their data are extremely important in parentage testing, would it not be more meaningful to produce a table that unambiguously shows the frequency of mutations in paternal and in maternal meioses? Mutation rates that we found in a recent study are given in table 1.

Table 1

No. of Maternal and Paternal Mutations and Meioses

Locus	No. of Mutations/ No. of Meioses	
	Maternal	Paternal
CSF1PO	0/237	0/165
D13S317	0/258	0/178
D18S51	0/286	2/205
D21S11	1/267	3/189
D3S1358	0/257	0/176
D5S818	0/258	0/178
D7S820	0/256	2/176
D8S1179	0/213	0/149
FGA	0/307	3/218
ACTBP2	0/402	5/315
THO1	0/394	0/301
TPOX	0/240	0/167
VWA	1/258	0/178

Jürgen Henke and Lotte Henke
Institut für Blutgruppenforschung
Köln, Germany

References

Brinkmann B, Klintschar M, Neuhuber F, Hühne J, Burkhard R (1998) Mutation rate in human microsatellites: influence of the structure and length of the tandem repeat. Am J Hum Genet 62:1408–1415

Henke J, Fimmers R, Baur MP, Henke L (1993) DNA-minisatellite mutations: recent investigations concerning distribution and impact on parentage testing. Int J Legal Med 105:217–222

Henke J, Henke L (1995) Recent observations in human DNA-minisatellite mutations. Int J Legal Med 107:204–208

Olaisen B, Bekkemoen M, Hoff-Olsen P, Gill P (1993) Human VNTR mutation and sex. In: Pena SDJ, Chakraborty R, Epplen JT, Jeffreys AJ (eds) DNA fingerprinting, state of the science. Birkhäuser Verlag, Basel, pp 63–69

Address for correspondence and reprints: Dr. Jürgen Henke, Institut für Blutgruppenforschung, Hohenzollernring 57, Postfach 1904 20, 50501 Köln, Germany

0002-9297/99/6405-0029$02.00