

## Plasma protein markers in S.Tomé e Príncipe

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**Systems and loci:** BF (properdin factor B, 6p21.3)  
GC (group specific component; 4q12-q13)  
TF (transferrin, 3q21)

### Population and sample sizes:

S.Tomé e Príncipe (Gulf of Guinea); BF: N=50; GC: N=77; TF: N=59

### Methods:

Samples: chord blood plasmas from unrelated newborns.

Phenotyping: agarose gel electrophoresis (BF and TF types, essentially according to Hauptmann *et al.*, 1977) or isoelectric focusing (GC and TF subtypes, by the methods of Constans and Cleve, 1988 and Budowle, 1987, respectively, with minor modifications).

### Results:

#### Observed phenotypes:

BF		GC		TF	
phenotypes	Obs.	phenotypes	Obs.	phenotypes	Obs.
F-F	16	1F-1F	43	C1-C1	41
F-Fv	1	1F-1S	10	C1-C2	13
F-S	19	1F-2	9	C1-D	4
Fv-Fv	1	1F-1C	4	C2-D	1
Fv-S	3	1S-1S	4		
S-S	9	1S-2	6		
S-Sv	1	2-2	1		
P=0.28		P=0.06		P=0.71	

#### Allele frequencies

BF		GC		TF	
Allele	Freq.	Allele	Freq.	Allele	Freq.
F	0.520	1F	0.708	C1	0.839
Fv	0.060	1S	0.156	C2	0.119
S	0.410	2	0.110	D	0.042
Sv	0.010	1C	0.026		

### Comments:

Fv and Sv stand for fast and slow variants of BF; 1C stands for a variant cathodal to GC\*1S.

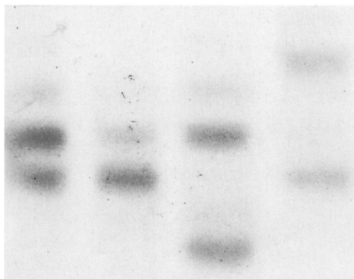
Gene frequencies estimated in our sample were compared with those from West Africa (compiled by Parra *et al.*, 1995) and Cabo Verde Islands, another archipelago colonised by the Portuguese. For the three loci an intermediate situation was found, demonstrating that Caucasian influence in S.Tomé e Príncipe gene pool was much smaller than in Cabo Verde.

Particularly interesting are: (a) the absence of TF\*C3 and relatively high frequencies of (b) GC\*1C and (c) BF\*Fv variants.

### References

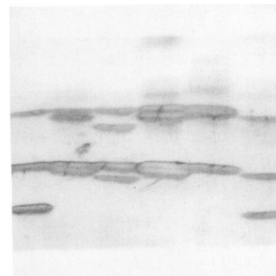
- Constans J, Cleve H (1988) The group specific component / vitamin D binding protein (GC / DBP) system in the analysis of disputed paternities. *Electrophoresis*. 9: 349-403.
- Budowle B (1987) Improved separation of the common transferrin variants in gels containing pH 5-7 Ampholines and HEPES. *Electrophoresis*. 8: 210-212.
- Hauptmann G, Wertheimer E, Tongio MM, Mayer S (1977) Bf polymorphism: Another variant (S0.8). *Hum. Hered.* 36: 109-111.
- Parra EJ, Teixeira Ribeiro JC, Caeiro JLB, Riveiro A (1995) Genetic structure of the population of Cabo Verde (West Africa): evidence of substantial European admixture. *Am J Phys Anthropol.* 97: 381-389.

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**Fig 1. BF phenotypes**

From left to right: FS; S; FSv; FvS.



**Fig 2. GC phenotypes**

From left to right: 2-1F; 1FS; 1F-1C; 1FS; 1F; 2-1S.