

Parentage Testing Survey Program of the College of American Pathologists: Red Cell Antigens, Serum Proteins and Red Cell Enzymes Testing Results

H Polesky*, D Endean, CR Harrison, J Morris, R Roby, R Walker

*Memorial Blood Centers of Minnesota, 2304 Park Avenue, Minneapolis, Minnesota, 55404, USA

Since its inception in 1993, results from seven mailings of the joint American Association of Blood Banks/College of American Pathologists parentage testing survey program, PI, have been analyzed. Results were reported in six red cell antigens (RCA), 14 serum proteins (SP) and 11 red cell enzymes (RCE) genetic systems. The total number of laboratories reporting results, the number of results reported and the number of non-consensus answers are listed in Table 1.

	1993			1994			1995
	<u>A</u>	<u>B</u>	<u>C</u>	<u>A</u>	<u>B</u>	<u>C</u>	<u>A</u>
Total labs reporting	51	58	60	85	89	93	125
RCA							
No. of labs	33	39	36	49	50	54	49
Total results	534	537	561	702	678	726	693
Non-consensus	4	1	5	1	2	1	3
SP							
No. of labs	8	14	12	22	20	17	21
Total results	102	114	105	171	141	165	186
Non-consensus	1	1	1	4	4	2	1
RCE							
No. of labs	11	20	18	32	36	29	34
Total results	108	216	171	321	303	339	369
Non-consensus	0	0	2	11	4	8	9

Results in the following systems were reported by more than 10 participants: ABO, Rh, MNSS, Kell, Duffy, Kidd, Gc, Hp, AK, ADA, PGM1, ACP, ESD and GLO. In the Gc and PGM1 systems, results were reported with both electrophoresis and isoelectric focusing techniques. The number of laboratories reporting by each technique is listed in Table 2.

	1993	1994	1995 PI-A
Gc	5	9	11
Gci	6	11	10
PGM1	6	13	14
PGM1i	11	20	20

In one mailing, PI-A 1994, the alleged father was unrelated to the mother and child. Among the RCA/SP/RCE genetic systems testing, only PLG, PGM1i and ACP demonstrated an exclusion.

When considering only the genetic systems where a consensus can be established and assuming that three concurring laboratories establish a consensus, the following overall rate of error can be calculated: RCA 0.004; SP 0.02; RCA 0.02. This demonstrates good consistency between laboratories performing genetic testing with conventional systems.