

R1b Mutation Rates and Allele Distributions

	Marker	FTDNA	Wikipedia	RogersDNA	Hawgood DNA	R1b Allele Frequency	Cheshire Clan Experience	Lancashire Clan	Other R1b Experience	
Source		1	2	3	4	5				
	23 of 30 test results to date are haplogroup R1b (mostly R1b1a2).							7 x DNAH, 2 x FTDNA = 9	2 x DNAH, 2 x FTDNA = 4	8 x DNAH, 2 x FTDNA = 10
							= most common allele unless noted	= most common allele unless noted	= most common allele unless noted	
Panel 1 (1-12)		0.250%	0.204%		0.240%					
	DYS393		0.076%	as Wikipedia	0.150%	13 = 91%, 12 = 4%, 14 = 5%	One mutation at 14	2 x 13, 2 x 14	1 x 12, 1 x 14	
	DYS390		0.311%	do	0.340%	24 = 60%. 25 = 16%, 23 = 22%, 22 = 1%		4 x 23	2 x 25, 1 x 22, 1 x 23	
	DYS19		0.151%	do	0.230%	14 = 89%, 15 = 9%			2 x 15	
	DYS391		0.265%	do	0.270%	11 = 67%, 10 = 29%, 12 = 4%	One mutation at 10	One mutation at 10	2 x 10, 1 x 12	
	DYS385a		0.226%	do	0.320%	11 = 87%, 12 = 8%			1 x 12	
	DYS385b		0.226%	do	0.340%	14 = 66%, 15 = 16%, 13 = 11%			3 x 15, 1 x 13	
	DYS426		0.009%	do	0.030%	12 = 98%				
	DYS388		0.222%	do	0.050%	12 = 98%				
	DYS439		0.477%	do		12 = 61%, 11 = 22%, 13 = 15%	One mutation at 13	3 x 11, 1 x 12	5 x 11, 1 x 13	
	DYS389i		0.186%	do	0.250%	13 = 80%, 14 = 14%, 12 = 5%			2 x 12, 1 x 14	
	DYS392		0.052%	do	0.140%	13 = 86%, 14 = 11%		3 x 14, 1 x 13		
	DYS389ii		0.242%	do	0.280%	29 = 63%, 30 = 23%, 28 = 9%			3 x 30., 2 x 28	
Panel 2 (13-25)		0.300%	0.362%		0.379%					
	DYS458		0.814%	do	0.730%	17 = 50%, 16 = 18%, 18 = 22%, 19 = 6%	One mutation at 16, one at 18		2 x 16, 2 x 18, 1 x 19	
	DYS459a		0.132%	do	0.210%	9 = 95%				
	DYS459b		0.132%	do	0.210%	10 = 81%, 9 = 17%			4 x 9	
	DYS455		0.016%	do	0.070%	11 = 97%				
	DYS454		0.016%	do	0.070%	11 = 98%				

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	DYS447		0.264%	do	0.300%	25 = 69%, 24 = 17%		all 24	2 x 24
	DYS437		0.099%	do	0.170%	15 = 85%, 14 = 12%	All = 14		2 x 14
	DYS448		0.135%	do	0.170%	19 = 78%, 20 = 5%			1 x 20
	DYS449		0.838%	do	0.880%	29 = 41%, 30 = 32%, 28 = 11%	All = 30	2 x 29, 2 x 30	7 x 29, 1 x 30, 2 x 28
	DYS464a		0.566%	do		15 = 80%, 14 = 15%, 16 = 2%			1 x 14, 1 x 16
	DYS464b		0.566%	do	0.500%	15 = 71%, 16 = 24%		1 x 15, 3 x 16	4 x 16
	DYS464c		0.566%	do	0.500%	17 = 48%, 16 = 39%, 15 = 11%	7 x 16, 2 x 15	3 x 17, 1 x 16	3 x 15, 3 x 16, 3 x 17
	DYS464d		0.566%	do	0.550%	17 = 69%, 18 = 20%, 16 = 8%, 15 = 1%, 19 = 2%	All = 16	all 19	1 x 15, 2 x 16, 4 x 17, 2 x 18, 1 x 19
Panel 3 (26-37)		0.710%	0.936%		0.930%				
	DNAH present		0.279%		0.300%				
	FTDNA Specific		1.857%		1.812%				
	DYS460		0.402%	do	0.340%	11 = 64%, 10 = 19%			2 x 10,
	Y-GATA-H4		0.208%	do	0.320%	11 = 71%, 12 = 9%			1 x 12
	YCAIIa		0.123%	do	0.160%	19 = 95%, 20 = 1%			2 x 20
	YCAIIb		0.123%	do	0.160%	23 = 81%, 22 = 9%, 24 = 6%			1 x 22, 1 x 24
	DYS456		0.735%	do	0.540%	16 = 40%, 15 = 36%	6 x 16, 3 x 15		4 x 15
	DYS607*		0.411%	do	0.390%	15 = 70%, 16 = 14%	2 x 15	2 x 15	1 x 15, 1 x 16
	DYS576*		1.022%	do	0.860%	18 = 42%, 17 = 28%, 19 = 17%, 20 = 5%	1 x 17, 1 x 18	1 x 18, 1 x 19	1 x 17, 1 x 20
	DYS570*		0.790%	do	0.750%	17 = 57%, 18 = 20%		1 x 17, 1 x 18	

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	CDYa*		3.531%	do		36 = 30%, 35 = 14%, 34 = 4%, 37 = 29%, 38 = 16%	1 x 34, 1 x 35	1 x 37, 1 x 38	1 x 34, 1 x 38
	CDYb*		3.531%	do		38 = 31%, 39 = 32%, 36 = 7%	2 x 38	2 x 39	1 x 36, 1 x 38
	DYS442		0.324%	do	0.500%	12 = 74%, 13 = 12 %, 11 = 12%	One mutation at 11	all 13	3 x 11, 2 x 13
	DYS438		0.035%	do	0.080%	12 = 94%, 10 = <1%	1 x 10		
		* = FTDNA st							
DNAH Specific				0.237%	0.222%				
	DYS441			0.132%			all 13	2 x 13	all 13
	DYS444			0.321%	0.290%	12 = 73%, 11 = 11%, 13 = 14%	3 x 11, 3 x 12, 2 x 13	2 x 12	8 x 12, 1 x 11, 1 x 13
	DYS445			0.296%	0.260%		all 12	2 x 12	all 12
	DYS446			0.095%	0.310%	13 = 76%, 12 = 6%, 14 = 15%	12, 1 mutation at 13	2 x 14	7 x 13, 1 x 14
	DYS452			0.314%	0.330%		all 30	2 x 30	7 x 30, 1 x 31
	DYS461			0.233%	0.230%		all 12	2 x 12	7 x 12 1 x 13
	DYS462			0.053%	0.150%		all 11	2 x 11	7 x 11, 1 x 12
	DYS463			0.162%	0.190%		all 24	2 x 24	all 24
	DYS635			0.492%	0.340%		all 22	2 x 23	6 x 23, 1 x 24, 1 x 25
	GATA A10			0.379%	0.340%		all 13	2 x 13	6 x 13, 1 x 14, 1 x 12
	GATA 1B			0.130%			all 10	2 x 10	7 x 10, 1 x 11
Overall									
		FTDNA +		RogersDNA	Hawgood DNA				
	FTDNA - 37 Markers	0.420%		0.497%	0.513%				
	DNAH - 43 Markers	0.228%		0.232%	0.244%				
	Common - 32 Markers	0.277%		0.284%	0.309%				
		FTDNA + is FTDNA panels 1 and 2 plus RogersDNA values							
		Hawwod DNA uses values from RogersDNA where missing from Hawgood DNA							
Sources	1	http://www.kerchner.com/cgi-bin/ystrmutationrate.cgi							
	2	http://en.wikipedia.org/wiki/List_of_Y-STR_markers							
	3	http://www.rogersdna.com/geddna/mutate.php							
	4	http://www.hawgoodfamily.co.uk/str%20data.html							
	5	http://freepages.genealogy.rootsweb.ancestry.com/~geneticgenealogy/yfreq.htm							

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Probabilities	Probability of number of generations to MRCA	10.0%	25.00%	50.0%	75.00%	90.0%				
	No of Mismatches	DNAH (43 markers) mutation rate 0.23%								
	0	1	2	4	7	12				
	1	3	5	9	14	20				
	2	6	9	14	20	28				
	3	10	13	19	27	35				
	4	13	18	25	34	43				
	5	17	23	31	40	50				
		FTDNA (37 markers) mutation rate 0.42%								
	0	1	1	2	5	8				
	1	2	3	6	9	13				
	2	4	6	9	13	18				
	3	6	9	13	17	23				
	4	9	12	16	22	27				
	5	11	15	20	26	32				
		Common (32 markers) mutation rate 0.28%								
	0	1	2	4	8	13				
	1	3	6	10	15	22				
	2	7	10	16	23	31				
	3	11	15	22	30	39				
	4	15	20	28	38	48				
	5	20	26	35	45	57				
	The above table is based on the MRCA calculator at http://www.moseswalker.com/mrca/calculator.asp?q=1									