

**Supplementary Table S12.** Results of selective neutrality tests for the three *NAT* gene paralogs in human populations.

ID	Population	Ewens-Watterson test <sup>1</sup>			Tajima's <i>D</i> test <sup>2</sup>		Fu's <i>F<sub>S</sub></i> test <sup>3</sup>	
		<i>F<sub>o</sub></i>	<i>F<sub>e</sub></i>	<i>P</i> -value	<i>D</i>	<i>P</i> -value	<i>F<sub>S</sub></i>	<i>P</i> -value
<b><i>NAT1</i></b>								
<i>Sub-Saharan Africa</i>								
2	Yoruba in Ibadan, Nigeria <sup>4</sup>	0.966	0.701	0.968	-1.457	<u>0.022 (0.210)</u>	-3.173	<u>0.005 (0.080)</u>
4	Luhya in Webuye, Kenya <sup>4</sup>	0.939	0.606	0.970	-1.627	<u>0.010 (0.140)</u>	-3.241	<u>0.018 (0.216)</u>
5	Maasai of Tanzania <sup>5</sup>	0.881	0.597	<b>&gt;0.999 (&gt;0.999)</b>	-1.889	<u>0.007 (0.112)</u>	-1.192	0.141
6	Turu of Tanzania <sup>5</sup>	0.881	0.597	<b>&gt;0.999 (&gt;0.999)</b>	-1.730	<u>0.016 (0.180)</u>	-1.708	0.021
7	Burunge of Tanzania <sup>5</sup>	0.943	0.763	<b>&gt;0.999 (&gt;0.999)</b>	-1.138	0.034	-1.315	0.055
8	Hadza of Tanzania <sup>5</sup>	0.729	0.598	0.782	0.006	0.611	0.096	0.420
9	Sandawe of Tanzania <sup>5</sup>	0.716	0.416	0.972	-1.731	<u>0.015 (0.180)</u>	-2.189	0.045
10	Biaka Pygmy of C.A.R. (CEPH) <sup>5</sup>	0.873	0.595	<b>&gt;0.999 (&gt;0.999)</b>	-1.507	0.038	-2.355	<u>0.007 (0.098)</u>
<i>East Asia</i>								
11	Han Chinese in Beijing, China <sup>4</sup>	0.949	0.472	<b>&gt;0.999 (&gt;0.999)</b>	-1.896	<b>0.001 (0.019)</b>	-9.910	<b>&lt;0.001 (&lt;0.001)</b>
12	Southern Han Chinese <sup>4</sup>	0.990	0.831	<b>&gt;0.999 (&gt;0.999)</b>	-0.952	0.051	-2.807	<u>0.008 (0.104)</u>
13	Japanese in Tokyo, Japan <sup>4</sup>	0.978	0.830	0.817	-1.421	0.027	-0.764	0.135
14	Cambodian (CEPH) <sup>5</sup>	n.a. <sup>7</sup>	n.a. <sup>7</sup>	n.a. <sup>7</sup>	n.a. <sup>7</sup>	n.a. <sup>7</sup>	n.a. <sup>7</sup>	n.a. <sup>7</sup>
<i>Europe</i>								
15	Toscani in Italia <sup>4</sup>	0.874	0.530	0.959	-1.466	0.035	-2.614	0.131
16	Utah Residents (CEPH) with N&W European Ancestry <sup>4</sup>	0.876	0.524	0.965	-1.554	<u>0.021 (0.210)</u>	-2.953	0.052
17	British in England and Scotland <sup>4</sup>	0.862	0.524	0.959	-1.440	0.043	-2.400	0.142
18	Finnish in Finland <sup>4</sup>	0.897	0.529	<u>0.977 (0.747)</u>	-1.799	<u>0.003 (0.054)</u>	-5.262	<b>0.001 (0.017)</b>
<i>America</i>								
19	Mexican Ancestry from Los Angeles USA <sup>4</sup>	0.955	0.684	0.966	-1.621	<u>0.012 (0.156)</u>	-2.132	0.078
20	Puerto Ricans from Puerto Rico <sup>4</sup>	0.964	0.680	<b>&gt;0.999 (&gt;0.999)</b>	-1.764	<u>0.003 (0.054)</u>	-2.878	<u>0.006 (0.090)</u>
21	Colombians from Medellin, Colombia <sup>4</sup>	0.919	0.677	0.874	-1.458	0.034	-1.187	0.196
22	Americans of African Ancestry in SW USA <sup>4</sup>	0.952	0.583	<b>&gt;0.999 (&gt;0.999)</b>	-1.580	<u>0.009 (0.135)</u>	-6.153	<b>&lt;0.001 (&lt;0.001)</b>

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**NAT2***Sub-Saharan Africa*

2	Yoruba in Ibadan, Nigeria <sup>4</sup>	0.115	0.150	0.233	-0.312	0.441	-5.777	0.045
3	Mandenka of Senegal <sup>6</sup>	0.167	0.197	0.403	0.628	0.780	-2.178	0.265
4	Luhya in Webuye, Kenya <sup>4</sup>	0.175	0.164	0.688	0.165	0.635	-3.752	0.134
6	Turu of Tanzania <sup>5</sup>	0.149	0.132	0.809	-0.071	0.522	-4.848	<u>0.012 (0.204)</u>
7	Burunge of Tanzania <sup>5</sup>	0.194	0.196	0.596	0.546	0.745	-1.303	0.290
9	Sandawe of Tanzania <sup>5</sup>	0.199	0.200	0.597	0.554	0.749	-1.609	0.237
10	Biaka Pygmy of C.A.R. (CEPH) <sup>5</sup>	0.207	0.165	0.873	-0.981	0.175	-5.033	<u>0.003 (0.054)</u>

*East Asia*

11	Han Chinese in Beijing, China <sup>4</sup>	0.427	0.469	0.480	0.024	0.573	0.822	0.689
12	Southern Han Chinese <sup>4</sup>	0.351	0.421	0.392	0.410	0.706	0.677	0.668
13	Japanese in Tokyo, Japan <sup>4</sup>	0.465	0.525	0.444	-0.121	0.512	1.415	0.773

*Europe*

15	Toscana in Italia <sup>4</sup>	0.297	0.342	0.441	1.705	0.951	1.557	0.759
16	Utah Residents (CEPH) with N&W European Ancestry <sup>4</sup>	0.282	0.369	0.293	1.612	0.943	2.043	0.809
17	British in England and Scotland <sup>4</sup>	0.276	0.414	0.162	2.229	<u>0.982 (0.760)</u>	3.108	0.875
18	Finnish in Finland <sup>4</sup>	0.279	0.417	0.165	2.179	<u>0.979 (0.760)</u>	3.083	0.872

*America*

19	Mexican Ancestry from Los Angeles USA <sup>4</sup>	0.244	0.289	0.405	0.688	0.791	0.244	0.597
20	Puerto Ricans from Puerto Rico <sup>4</sup>	0.222	0.278	0.329	1.131	0.884	0.243	0.594
21	Colombians from Medellin, Colombia <sup>4</sup>	0.281	0.347	0.351	1.279	0.907	1.343	0.744
22	Americans of African Ancestry in SW USA <sup>4</sup>	0.146	0.162	0.463	-0.156	0.504	-3.804	0.107

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**NATP***Sub-Saharan Africa*

1	Dinka of Soudan <sup>5</sup>	0.209	0.165	0.877	-0.394	0.394	-5.805	<u>0.001 (0.018)</u>
2	Yoruba in Ibadan, Nigeria <sup>4</sup>	0.159	0.159	0.605	-0.027	0.556	-4.590	0.083
4	Luhya in Webuye, Kenya <sup>4</sup>	0.183	0.164	0.730	-0.163	0.503	-4.741	0.077
6	Turu of Tanzania <sup>5</sup>	0.211	0.283	0.171	0.017	0.556	-0.820	0.344
7	Burunge of Tanzania <sup>5</sup>	0.241	0.298	0.296	-0.298	0.432	-1.573	0.171

9	Sandawe of Tanzania <sup>5</sup>	0.343	0.200	<u>0.975 (0.880)</u>	-0.595	0.313	-4.665	<u>0.005 (0.085)</u>
10	Biaka Pygmy of C.A.R. (CEPH) <sup>5</sup>	0.187	0.186	0.608	-0.333	0.415	-4.349	<u>0.006 (0.096)</u>
<i>East Asia</i>								
11	Han Chinese in Beijing, China <sup>4</sup>	0.351	0.378	0.516	0.480	0.728	1.036	0.712
12	Southern Han Chinese <sup>4</sup>	0.338	0.344	0.581	0.237	0.651	0.526	0.642
13	Japanese in Tokyo, Japan <sup>4</sup>	0.319	0.306	0.646	0.724	0.797	0.002	0.559
<i>Europe</i>								
15	Toscani in Italia <sup>4</sup>	0.265	0.312	0.420	0.417	0.707	-0.866	0.413
16	Utah Residents (CEPH) with N&W European Ancestry <sup>4</sup>	0.270	0.304	0.464	-0.314	0.437	-0.686	0.442
17	British in England and Scotland <sup>4</sup>	0.297	0.336	0.463	0.416	0.703	-0.357	0.496
18	Finnish in Finland <sup>4</sup>	0.252	0.309	0.365	0.347	0.690	-0.344	0.504
<i>America</i>								
19	Mexican Ancestry from Los Angeles USA <sup>4</sup>	0.258	0.264	0.582	-0.190	0.490	-1.671	0.279
20	Puerto Ricans from Puerto Rico <sup>4</sup>	0.261	0.277	0.534	-0.311	0.436	-1.470	0.294
21	Colombians from Medellin, Colombia <sup>4</sup>	0.238	0.313	0.278	0.431	0.712	-0.189	0.523
22	Americans of African Ancestry in SW USA <sup>4</sup>	0.206	0.237	0.436	-0.125	0.514	-1.323	0.342

<sup>1</sup> Ewens-Watterson test for departure from selective neutrality and demographic equilibrium;  $F_o$  : observed homozygosity,  $F_e$  : expected homozygosity; the  $P$ -value is given as the proportion of random  $F_e$  values generated under the neutral equilibrium model that are smaller than, or equal to the observed  $F_o$  value. Significant departures ( $P$ -value < 0.025 or > 0.975) are underlined. Significant departures after Holm's correction for multiple testing ( $P$ -values in brackets) are shown in bold.

<sup>2</sup> Tajima's  $D$  test for departure from selective neutrality and demographic equilibrium; the  $P$ -value is given as the proportion of random  $D$  values generated under the neutral equilibrium model that are smaller than, or equal to the observed  $D$  value. Significant departures ( $P$ -value < 0.025 or > 0.975) are underlined. Significant departures after Holm's correction for multiple testing ( $P$ -values in brackets) are shown in bold.

<sup>3</sup> Fu's  $F_s$  test for departure from selective neutrality and demographic equilibrium; the  $P$ -value is given as the proportion of random  $F_s$  values generated under the neutral equilibrium model that are smaller than, or equal to the observed  $F_s$  value. Significant departures ( $P$ -value < 0.02) are underlined. Significant departures after Holm's correction for multiple testing ( $P$ -values in brackets) are shown in bold.

<sup>4</sup> The Genomes Project Consortium (2012). <sup>5</sup> Mortensen et al. (2011). <sup>6</sup> Sabbagh et al. (2008). <sup>7</sup> Not applicable (n.a.).

## References

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