

The South-American Network

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ISGC Meeting - Lund - 2013



Consortio Internacional de Genética del ACV

(International Stroke Genetics Consortium)

ISGC Outreach Committee

Jennifer Majersik, Utah, Estados Unidos
Agnieszka Slowik, Krakow, Polonia
Juan José Martín, Córdoba, Argentina

ISGC Chairman
Arne Lindgren, Lünd, Suecia



Our impact on ISGC

- Actually participating in ISGC:
 - ARGENTINE
 - BRAZIL
- Interested in participate:
 - CHILE
 - PERU
 - URUGUAY



Challenges

- Organizational: ethics committee, projects.
- Infrastructure, resources and logistics.
- Ethnic groups.

Organizational: ethics committee, projects.

Biobank = Project

2

- Biobank Legislation
- Genetic Studies Ethics

1

- Defining a Project.

Infrastructure, resources and logistics.

Private Institutions.

- Not profitable.

Public Institutions.

- "ad honorem"

Ethnic Groups

Incidence and Distribution of Native American mtDNA Haplogroups in Central Argentina.

Angelina García and Darío A. Demarchi

Anthropology Museum , School of Philosophy and
Humanity, National University of Cordoba, Argentina

Human Biology, February 2009, v. 81, no. 1, pp. 59–69.

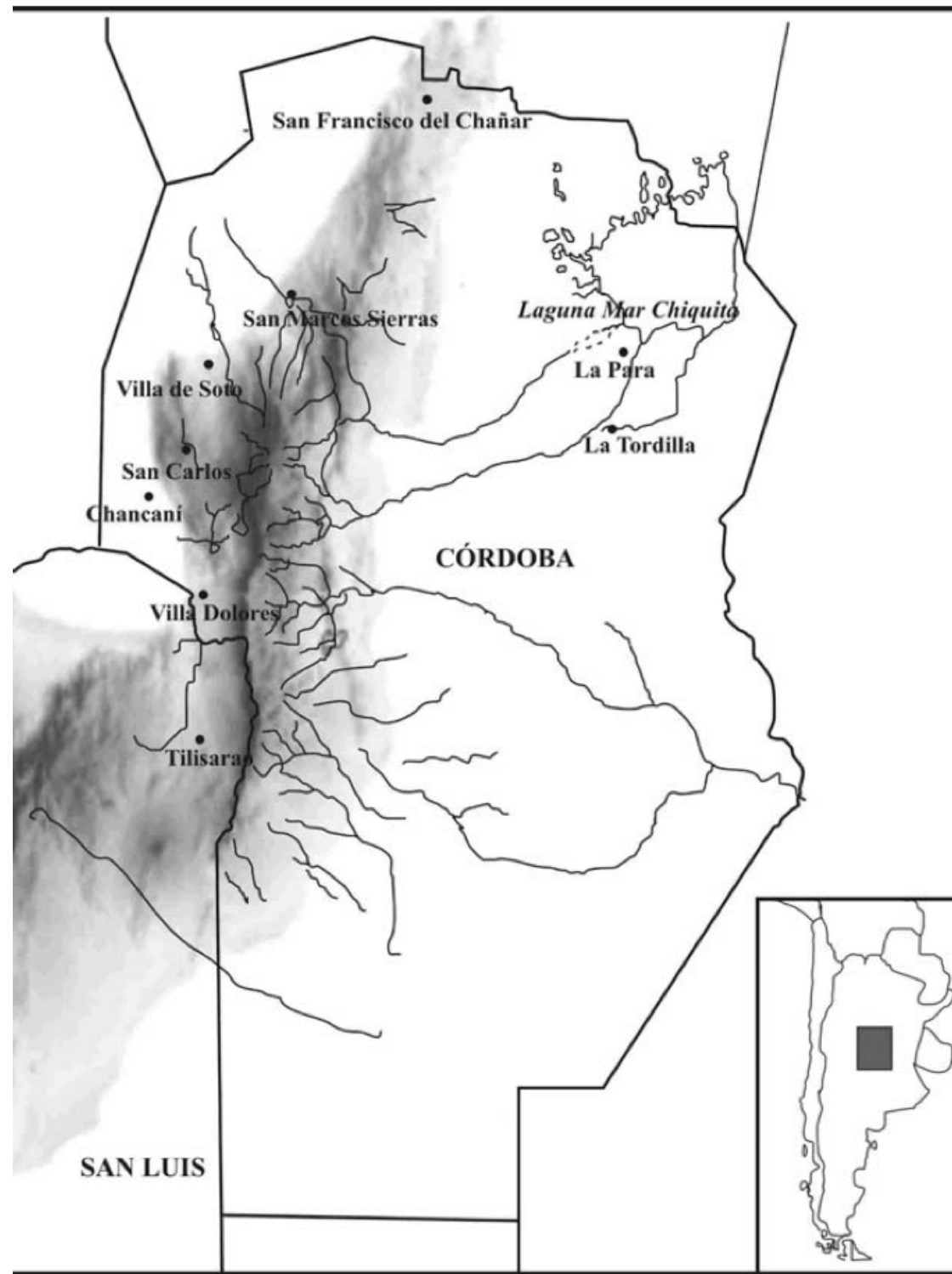


Figure 1. Approximate area of the Sierras Centrales region and sampling locations.

Table 1. Sample Size, Percentage of Native American Maternal Lineages, Relative Frequency of Each Native American mtDNA Haplogroup, Diversity Estimate (H), and Latitude and Longitude of Each Population Sample Included in the Analysis

Village	N	Native American Lineage		mtDNA Haplogroup				H	Latitude (Degrees South)	Longitude (Degrees West)
		N	%	A	B	C	D			
San Francisco del Chañar	52	42	81	0.119	0.190	0.476	0.214	0.693	29.47	63.56
Villa de Soto	54	44	82	0.100	0.075	0.500	0.325	0.644	30.51	64.59
San Carlos Minas	10	8	80	0.250	0.000	0.500	0.250	0.714	31.10	65.06
San Marcos Sierras	32	22	70	0.261	0.087	0.478	0.174	0.696	30.47	64.39
Villa Dolores	21	18	88	0.263	0.105	0.368	0.263	0.754	31.56	65.11
Chancaní	23	16	68	0.063	0.125	0.500	0.313	0.675	31.25	65.26
La Para	66	53	80	0.160	0.060	0.460	0.320	0.670	30.53	62.60
La Tordilla	21	18	84	0.313	0.063	0.250	0.375	0.742	31.15	63.03
Tilisarao	31	28	89	0.320	0.320	0.200	0.160	0.760	32.44	65.18

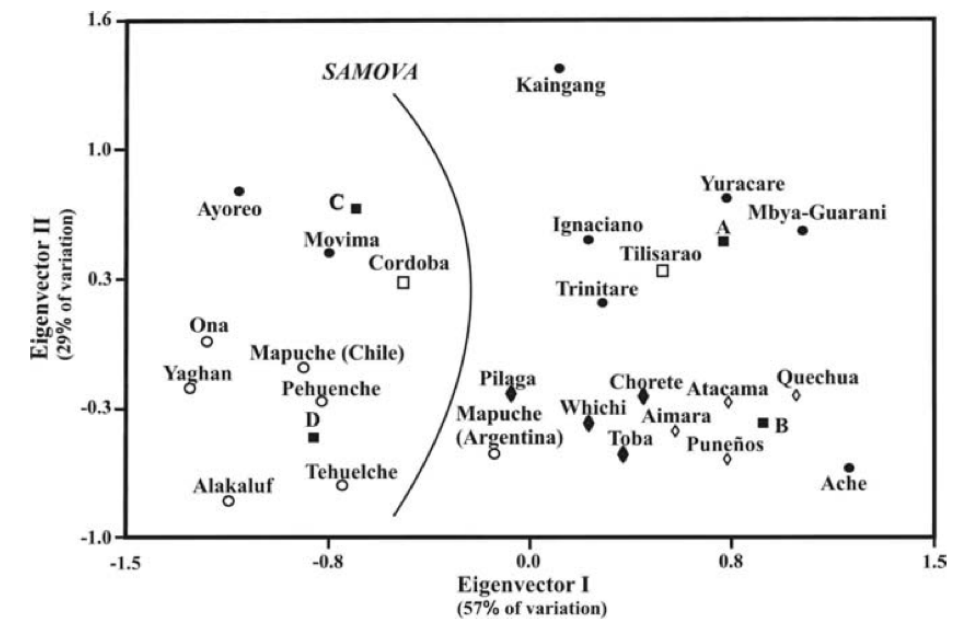


Figure 3. Principal components analysis showing relative affinities between population samples across the Southern Cone of South America. Filled diamonds, Gran Chaco groups; open diamonds, Andes groups; filled circles, tropical or subtropical forests; open circles, Tierra del Fuego and Patagonia groups; open squares, Sierras Centrales; filled squares, haplogroups. The curved line indicates the grouping separation found with SAMOVA.

Table 2. Frequencies of the Four Primary mtDNA Haplogroups in Natives Americans from the Southern Cone of South America

<i>Population</i>	<i>N</i>	<i>Haplogroup</i>				<i>Region</i>	<i>Latitude (Degrees South)</i>	<i>Longitude (Degrees West)</i>	<i>Reference</i>
		<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>				
Córdoba	215	0.172	0.098	0.451	0.279	Sierras Centrales	31.23	64.11	Present study
Tilisarao	25	0.320	0.320	0.200	0.160	Sierras Centrales	34.43	65.17	Present study
Tehuenche	29	0.000	0.210	0.240	0.550	Patagonia	52.00	70.00	C. M. Bravi (personal communication, 2005)
Pehuenche	205	0.024	0.093	0.395	0.488	Patagonia	37.43	71.16	Merriwether et al. (1995), Rocco et al. (2002)
Mapuche	111	0.000	0.072	0.441	0.487	Patagonia, Chile	40.15	72.25	Moraga et al. (2000)
Mapuche	50	0.060	0.360	0.240	0.340	Patagonia, Argentina	39.10	68.40	Bailliet et al. (1994)
Ona	12	0.000	0.000	0.500	0.500	Tierra del Fuego	54.50	74.50	Fox (1996)
Alakaluf	19	0.000	0.000	0.158	0.842	Tierra del Fuego	49.00	74.50	Fox (1996)
Yaghan	21	0.000	0.000	0.480	0.520	Tierra del Fuego	55.00	67.40	Moraga et al. (2000)
Puneños	65	0.122	0.647	0.077	0.154	Andes	24.14	65.15	Dipierri et al. (1998)
Atacama	73	0.110	0.685	0.150	0.055	Andes	53.50	68.00	Merriwether et al. (1995), Rocco et al. (2002)
Aymara	290	0.072	0.638	0.148	0.141	Andes	17.22	68.90	Merriwether et al. (1995), Rocco et al. (2002)
Quechua	32	0.156	0.750	0.094	0.000	Andes	20.21	66.45	Bert et al. (2001)
Ignaciano	21	0.190	0.381	0.429	0.000	Tropical forests	14.50	65.46	Bert et al. (2001)
Trinitare	33	0.152	0.424	0.394	0.030	Tropical forests	14.50	65.47	Bert et al. (2001)
Movima	22	0.091	0.091	0.636	0.182	Tropical forests	14.58	65.24	Bert et al. (2001)
Yuracaré	27	0.408	0.333	0.222	0.037	Tropical forests	16.90	65.47	Bert et al. (2001)
Wichí	44	0.091	0.545	0.205	0.159	Gran Chaco	24.00	62.20	Demarchi et al. (2001)
Toba	28	0.143	0.500	0.071	0.287	Gran Chaco	26.00	60.60	Demarchi et al. (2001)
Pilagá	40	0.050	0.375	0.275	0.300	Gran Chaco	24.40	59.60	Demarchi et al. (2001)
Chorote	14	0.143	0.500	0.143	0.214	Gran Chaco	22.30	62.60	Bianchi et al. (1995)
Ayoreo	89	0.000	0.000	0.831	0.169	Gran Chaco	16.00	58.00	Marrero et al. (2003)
Aché	63	0.100	0.900	0.000	0.000	Subtropical forests	24.00	56.00	Marrero et al. (2003)
Mbyá-Guaraní	46	0.478	0.326	0.087	0.022	Subtropical forests	25.18	55.50	Altuna and Demarchi (2003)
Kaingang	57	0.415	0.057	0.528	0.000	Subtropical forests	27.00	52.00	Marrero et al. (2007)

Ethnic Groups

Heterogeneity in Genetic Admixture across Different Regions of Argentina

Avena S, Via M, Ziv E, Perez-Stable EJ, Gignoux CR, et al. (2012)
PLoS ONE 7(4): e34695. doi:10.1371

Ethnic Groups

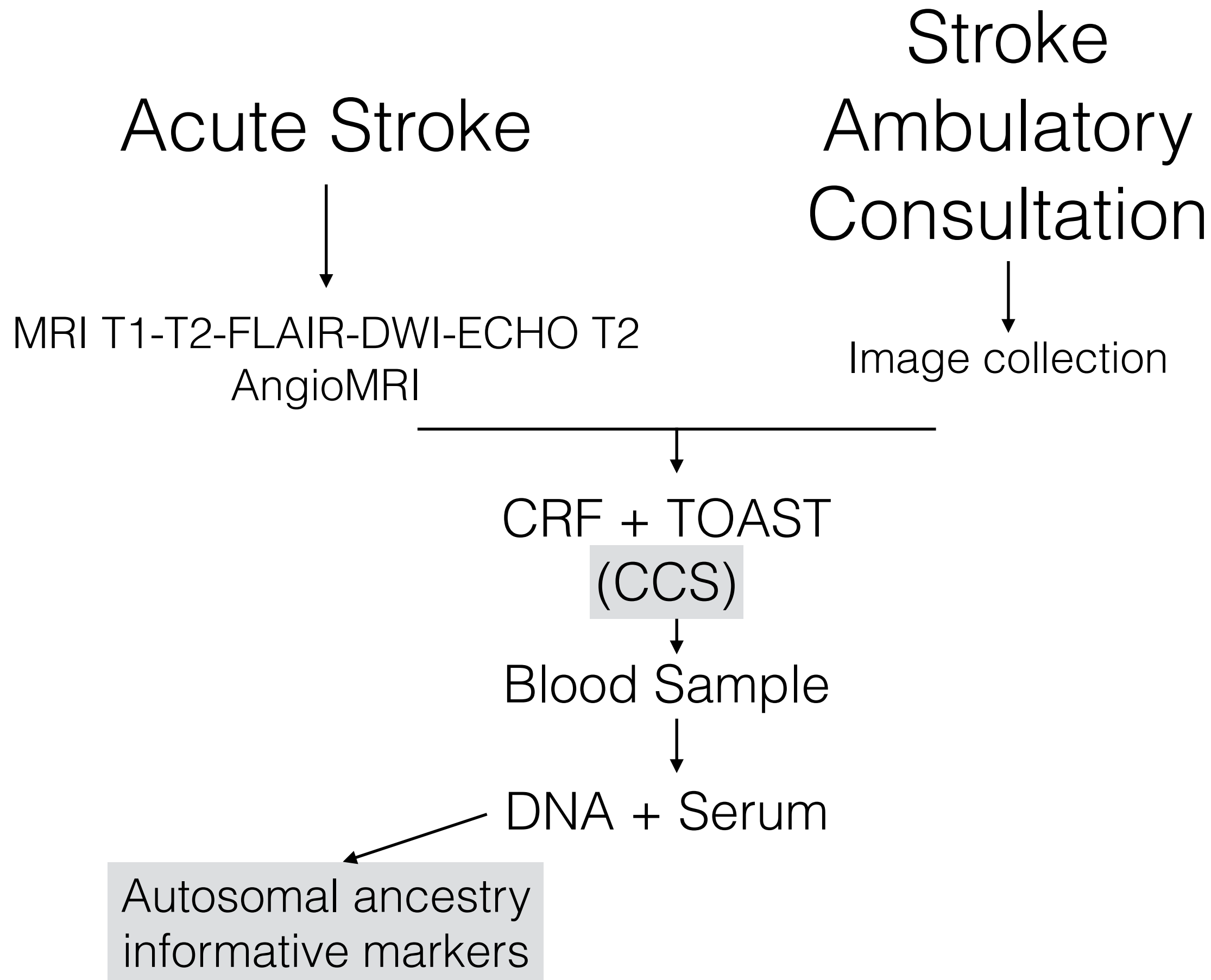
- The population of Argentina is the result of the intermixing between several groups, including Indigenous American, European and African populations.
- Despite the commonly held idea that the population of Argentina is of mostly European origin, multiple studies have shown that this process of admixture had an impact in the entire Argentine population.

Ethnic Groups

- A set of 99 autosomal ancestry informative markers was genotyped in a sample of 441 Argentine individuals to estimate genetic ancestry.
- The average ancestry for the Argentine sample overall was:
 - 65% European (95%CI: 63–68%),
 - 31% Indigenous American (28–33%),
 - 4% African (3–4%).

Ethnic Groups

- European ancestry among individuals that declared:
 - all grandparents born in Europe was 91% (95%CI: 88–94%)
 - no European grandparents 54% (95%CI: 51–57%) (p,0.001).





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