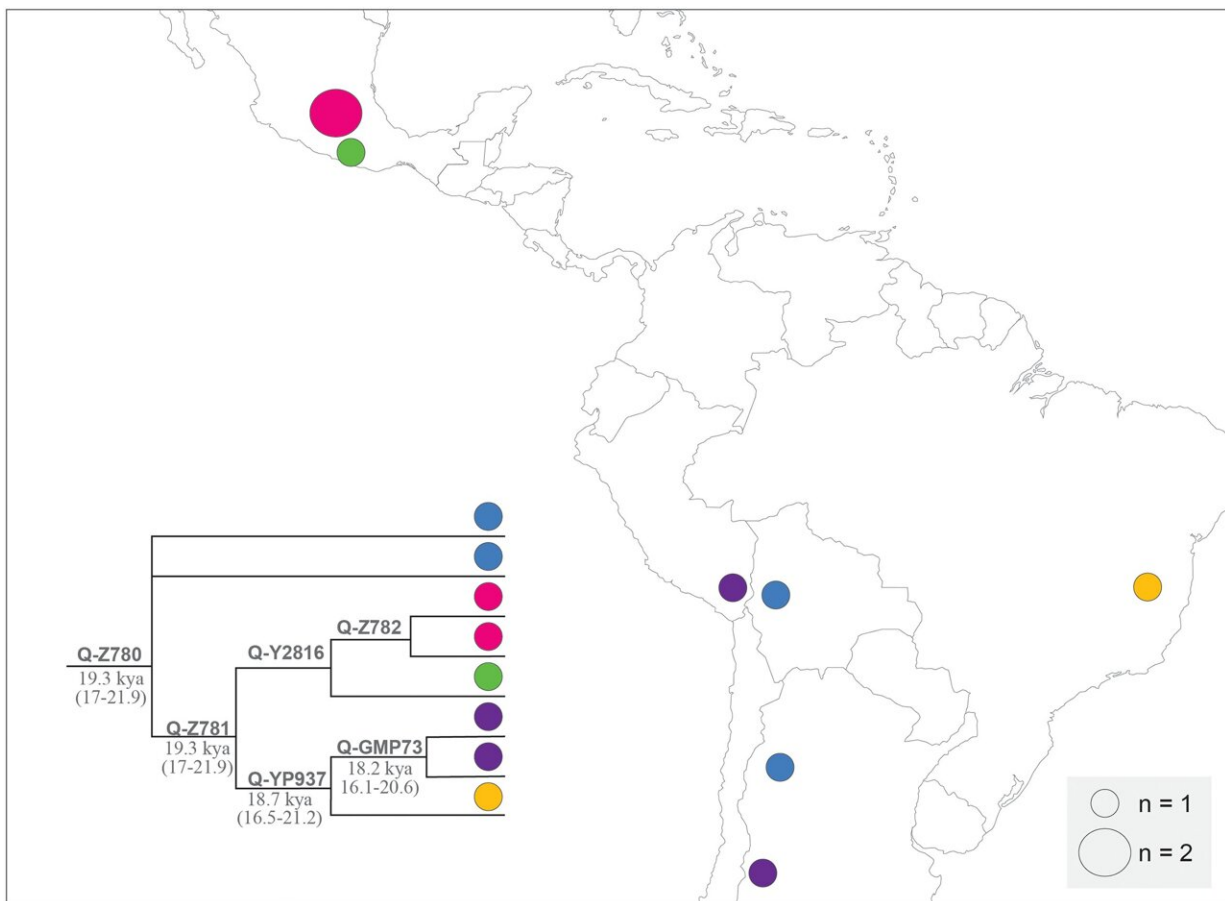


Chromosomal study suggests people were living in South America as far back as 18,000 years ago

August 19 2022, by Bob Yirka



Schematic representation of the geographic distribution of Q-Z780 and sub-lineages. Colored circles represent geographic distribution and sub-lineage membership as shown in the inset tree. Divergence times estimated in this study are represented in italics, in kya, and with a 95% confidence interval between parentheses (for more details see Methods). The size of the circles is related to

the number of subjects and is specified with the "n" in the box to the right. Individuals with Mexican ancestry from Los Angeles have been arbitrarily represented in City of Mexico (for more information about samples, see S1 Table). Layer map downloaded from [100]. Credit: *PLOS ONE* (2022). DOI: 10.1371/journal.pone.0271971

A team of researchers affiliated with several institutions in Argentina has found chromosomal evidence of people living in South America as far back as 18,000 years ago. The group has published a paper describing their work and findings on the open access site *PLOS ONE*.

Over the past several years, scientists have found evidence of people first traveling to North America from Siberia approximately 14,000 to 17,000 years ago, using what was then a land bridge to Alaska. In this new effort, the researchers have found evidence suggesting that the timeline may have to be pushed back a bit.

Rather than looking for tools or bones left behind by the first people to travel to South America—which presumably was populated by people moving south down through North America and then through Central America—the researchers used a chromosomal approach.

The researchers collected [tissue samples](#) from 13 people living in Argentina who were believed to be descended from ancient migrants to the region (members of the Q Haplogroup), rather than the New World. The researchers then studied their Y chromosomes as a means of establishing a timeline. The Y chromosome has the longest stretch of non-recombinant DNA and is passed down to [male offspring](#) and because of that it provides a history of the paternal lineage.

The researchers used the data from the volunteers to help create de novo

phylogenetic trees where the lengths of the branches were proportionate to the number of single-nucleotide polymorphisms, which they note correspond to time. They then compared the data with samples collected from 80 other people belonging to the Q Haplogroup, who lived in other places, such as Eurasia and that allowed them to make estimates regarding how long people in South America must have been living there for their Y chromosomes to have the characteristics that they have today—approximately 18,000 years.

The researchers also found that their work showed the impact on the lineage of the people living in the region during the Younger Dryas (the period after the last ice retreat). They conclude by suggesting future work involved in tracing the lineage of people in South America should focus on the impact of the changing environment during that period.

More information: Paula B. Paz Sepúlveda et al, Human Y chromosome sequences from Q Haplogroup reveal a South American settlement pre-18,000 years ago and a profound genomic impact during the Younger Dryas, *PLOS ONE* (2022). [DOI: 10.1371/journal.pone.0271971](https://doi.org/10.1371/journal.pone.0271971)

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