Genome-wide Ancestry Patterns in Rapanui Suggest Pre-European Admixture with Native Americans

Background: Rapa Nui (Easter Island), located in the easternmost corner of the Polynesian Triangle, is one of the most isolated locations on the planet inhabited by humans. Archaeological and genetic evidence suggests that the island was first colonized by Polynesians around AD 1200, during their eastward expansion. Although it remains contentious whether Polynesians reached South America, suggestive evidence has been brought forward supporting the possibility of Native American contact prior to the European “discovery” of the island in AD 1722. Results: We generated genome-wide data for 27 Rapanui. We found a mostly Polynesian ancestry among Rapanui and detected genome-wide patterns consistent with Native American and European admixture. By considering the distribution of local ancestry tracts of eight unrelated Rapanui, we found statistical support for Native American admixture dating to AD 1280–1495 and European admixture dating to AD 1850–1895. Conclusions: These genetic results can be explained by one or more pre-European trans-Pacific contacts.