

Evolutionary responses to a constructed niche: Ancient mesoamericans as a model of gene-culture coevolution

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Culture and genetics rely on two distinct but not isolated transmission systems. Cultural processes may change the human selective environment and thereby affect which individuals survive and reproduce. Here, we evaluated whether the modes of subsistence in Native American populations and the frequencies of the ABCA1*Arg230Cys polymorphism were correlated. Further, we examined whether the evolutionary consequences of the agriculturally constructed niche in Mesoamerica could be considered as a gene-culture coevolution model. For this purpose, we genotyped 229 individuals affiliated with 19 Native American populations and added data for 41 other Native American groups (n = 1905) to the analysis. In combination with the SNP cluster of a neutral region, this dataset was then used to unravel the scenario involved in 230Cys evolutionary history. The estimated age of 230Cys is compatible with its origin occurring in the American continent. The correlation of its frequencies with the archeolog