

Eco-Geographical Diversification of Bitter Taste Receptor Genes among Subspecies of Chimpanzees

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Chimpanzees (*Pan troglodytes*) have region-specific difference in dietary repertoires from east to west across tropical Africa. Such differences may result from different genetic backgrounds in addition to cultural variations. In the present study (Hayakawa et al. 2012, *PLoS ONE* 7: e43277), nucleotide diversity and divergence of all bitter taste receptor genes (*TAS2Rs*) were investigated within and among 4 subspecies of chimpanzees: western chimpanzees (*P. t. verus*), Nigerian-Cameroonian chimpanzees (*P. t. ellioti*), central chimpanzees (*P. t. troglodytes*), and eastern chimpanzees (*P. t. schweinfurthii*). As a result, approximately two-thirds of all *TAS2R* haplotypes in the amino acid sequence were unique to each subspecies. I analyzed the evolutionary backgrounds of natural selection behind such diversification. Although it was already known that diversification of *TAS2Rs* in western chimpanzees may have resulted from balancing selection, I found that purifying selection dominates as the evolutionary form of diversification of *TAS2Rs* in eastern chimpanzees. Such marked diversification of *TAS2Rs* with different evolutionary backgrounds among subspecies of chimpanzees probably reflects their subspecies-specific dietary repertoires.