

Title: Out of South Asia: the distinctive genetic profile of wild boar and domestic pigs in South Asia

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Abstract: Population origin is a fundamental question in biology. Traditionally, Eurasian wild boar was thought to originate from Island Southeast Asia. However, the Indomalayan populations were underexplored despite their morphotypic diversity. Using whole-genome data from wild boar and domestic pig populations worldwide, we discovered South Asia as a sister group to all other groups based on phylogenetic analyses. South Asia shows the highest genetic diversity, heterozygosity, variant abundance, and the earliest divergence from non-South Asian groups (~658 thousand years ago). We also uncovered a supergene-like ancient introgression on the X chromosome associated with body size and bioclimatic variations. This study illuminates the distinctive genomic profile of South Asian wild boar and domestic pigs, revealing an “Out-of-South Asia” migration of global wild boar following the middle Pleistocene.

