



REPORT

Genetic Structure of the Purebred Domestic Dog

Heidi G. Parker^{1,2,3}, Lisa V. Kim^{1,2,4}, Nathan B. Sutter^{1,2}, Scott Carlson¹, Travis D. Lorentze...

+ See all authors and affiliations

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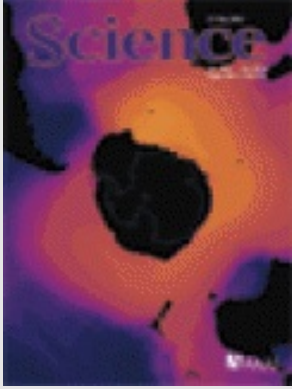
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Abstract

We used molecular markers to study genetic relationships in a diverse collection of 85 domestic dog breeds. Differences among breeds accounted for ~30% of genetic variation. Microsatellite genotypes were used to correctly assign 99% of individual dogs to breeds. Phylogenetic analysis separated several breeds with ancient origins from the remaining breeds with modern European origins. We identified four genetic clusters, which predominantly contained breeds with similar geographic origin, morphology, or role in human activities. These results provide a genetic classification of dog breeds and will aid studies of the genetics of phenotypic breed differences.

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