

Table S1. Dog breeds included in the present study.

Breed name	Breed symbol	Group	Initial dataset (n.)	Quality check (n.)*	Size reduction (n.)**
Pastore Apuano	APUA	Herding dogs (HD)	19	18	18
Bergamasco shepherd dog	BERG	Herding dogs (HD)	15	11	11
Pastore d'Oropa	DORO	Herding dogs (HD)	15	15	15
Lupino del Gigante	LUGI	Herding dogs (HD)	23	18	18
Pastore della Lessinia e del Lagorai	PALA	Herding dogs (HD)	10	10	10
Fonni's dog	FONN	Livestock guardians (LGD)	30	30	24
Mannara dog	MANN	Livestock guardians (LGD)	12	12	12
Maremma and the Abruzzi sheepdog	MARM	Livestock guardians (LGD)	20	16	16
Pastore della Sila	SILA	Livestock guardians (LGD)	14	14	14

*This dataset was used for population structure analyses (multidimensional scaling, genetic distances, and Admixture).

**This dataset was used for selection signature analyses (XP-EHH, F_{ST} , and ROH).