

Supplemental Table 1. Monomorphic microsatellite loci and the species in which they were originally identified. All loci are dinucleotides, except BG ( $\beta$ -globin) which is pentanucleotide.

Locus	Species in which locus was identified	Reference
Aa4	<i>Arctocephalus australis</i>	Gemmell <i>et al.</i> (1997)
BG	<i>Mirounga angustirostris</i>	" "
HG1.3	<i>Halichoerus grypus</i>	" "
HG3.7	<i>Halichoerus grypus</i>	" "
HG6.3	<i>Halichoerus grypus</i>	Allen <i>et al.</i> (1995)
HGD.2	<i>Halichoerus grypus</i>	" "
Hi-14	<i>Hydrurga leptonynx</i>	Davis <i>et al.</i> (2002)
Hi-15	<i>Hydrurga leptonynx</i>	" "
Hi-16	<i>Hydrurga leptonynx</i>	" "
Hi-2	<i>Hydrurga leptonynx</i>	" "
Hi-20	<i>Hydrurga leptonynx</i>	" "
Hi-4	<i>Hydrurga leptonynx</i>	" "
Lc-13	<i>Lobodon carcinophagus</i>	" "
Lc-26	<i>Lobodon carcinophagus</i>	" "
Lc-28	<i>Lobodon carcinophagus</i>	" "
Lc-5	<i>Lobodon carcinophagus</i>	" "
Lc-6	<i>Lobodon carcinophagus</i>	" "
Lw-11	<i>Leptonychotes weddellii</i>	" "
Lw-15	<i>Leptonychotes weddellii</i>	" "
Lw-4	<i>Leptonychotes weddellii</i>	" "
Lw-5	<i>Leptonychotes weddellii</i>	" "
Lw-7	<i>Leptonychotes weddellii</i>	" "
Lw-9	<i>Leptonychotes weddellii</i>	" "
MACA1	<i>Mirounga angustirostris</i>	Garza (1998)
MACA2	<i>Mirounga angustirostris</i>	" "
CORT	<i>Mirounga leonina</i>	Pastor <i>et al.</i> (2004)
PV2	<i>Phoca vitulina</i>	Goodman (1997)
PV10	<i>Phoca vitulina</i>	" "
PV11	<i>Phoca vitulina</i>	" "
PV16	<i>Phoca vitulina</i>	" "
PVC19	<i>Phoca vitulina</i>	Coltman <i>et al.</i> (1996)
PVC29	<i>Phoca vitulina</i>	" "
PVC30	<i>Phoca vitulina</i>	" "
PVC63	<i>Phoca vitulina</i>	" "
PVC78	<i>Phoca vitulina</i>	" "
SGPv3	<i>Phoca vitulina</i>	Goodman (1997)
SGPv10	<i>Phoca vitulina</i>	" "
SGPv11	<i>Phoca vitulina</i>	" "