

**Additional file 1.** Review of heterozygote deficiency in microsatellite studies of marine and freshwater gastropods

Species	Common name	Reproductive method	Evidence of selfing?	No. of loci identified	Presence of heterozygote deficient loci (number, if stated)	Suggested cause of heterozygote deficit	Reference	Notes
<i>Biomphalaria pfeifferi</i>	Freshwater snail	Hermaphroditic	Yes	9	Yes	Self-fertilisation	Charbonnel <i>et al.</i> (2000)	-
<i>Buccinum undatum</i>	Common whelk	Separate sexes	No	5	Yes (2/5)	Null alleles	Weetman <i>et al.</i> (2005)	Poor primer success (only five loci successful from 38 designed)
<i>Bulinus forskalii</i>	African freshwater snail	Hermaphroditic	Yes	11	Yes (11/11)	High degree of selfing	Gow <i>et al.</i> (2001)	-
<i>Bulinus globosus</i>	Freshwater snail	Hermaphroditic	Yes	6	Yes (4/6)	Null alleles (described as unlikely as no there were no consistently failing amplifications at any single loci), population bottleneck effect, and self-fertilisation	Emery <i>et al.</i> (2003)	-
<i>Cerithium lividulum</i>	Needle whelk	Separate sexes	No	6	Yes (1/6)	Null alleles (described as unlikely as no there were no consistently failing amplifications at any single loci), population bottleneck effect, and self-fertilisation	Emery <i>et al.</i> (2003)	-
<i>Cerithium vulgatum</i>	Needle whelk	Separate sexes	No	6	Yes (4/6)	Population-level processes and small sample sizes	Samadi <i>et al.</i> (2001)	-
<i>Crepidula fornicata</i>	Slipper limpet	Protandrous, hermaphrodite	Yes	7	Yes	Null alleles (described as unlikely as observed in multiple populations with variable intensities across the loci), large number of rare alleles and the Wahlund effect	Dupont & Viard (2003)	-
<i>Cyclope neritea</i>	Gastropod mollusc	Separate sexes	No	8	Yes	Null alleles due to phylogeographical break in the species' native range	Simon-Bouhet <i>et al.</i> (2005)	-
<i>Haliotis kamschatkana</i>	Northern abalone	Separate sexes	No	12	Yes (6/12)	Null alleles (described as unlikely due to presence over majority of loci), non-random mating, inbreeding, temporal variation in the genetic composition of recruits, or population admixture	Miller <i>et al.</i> (2001)	-
<i>Haliotis midae</i>	Perlemoen abalone	Separate sexes	No	11	Yes (4/11)	Null alleles	Bester <i>et al.</i> (2004)	Suffered from allele dropout effect that could not be resolved through optimisation
<i>Haliotis rubra</i>	Black-lip abalone	Separate sexes	No	9	Yes	No explanation offered	Evans <i>et al.</i> (2000)	
<i>Littorina saxatilis</i>	Rough periwinkle	Separate sexes	No	7	Yes	Null alleles (described as unlikely as did not demonstrate presence of null homozygotes i.e. complete failures), pooling of individuals from several sub-populations (Wahlund effect)	Sokolov <i>et al.</i> (2002)	Described large anomalous alleles (500-700 bp)
<i>Littorina striata</i>	Periwinkle	Separate sexes	No	5	Yes (3/5)	Null alleles (described as unlikely due to presence over majority of loci), limited sample size and population sub structuring	Winnepeninckx & Backeljau (1998)	-
<i>Littorina subrotundata</i>	Periwinkle	Separate sexes	No	12	Yes	No explanation offered	Tie <i>et al.</i> (2000)	-
<i>Lymnaea stagnalis</i>	Great pond snail	Hermaphroditic	Yes	9	Yes	Null alleles	Knott <i>et al.</i> (2003)	-
<i>Lymnaea truncatula</i>	Dwarf pond snail	Hermaphroditic	Yes	9	Yes (9/9)	Bottleneck effect and inbreeding	Trouve <i>et al.</i> (2000)	-
<i>Melongena corona</i>	Crown conch	Separate sexes	No	8	Yes	Null alleles (described as unlikely as did not demonstrate presence of null homozygotes i.e. complete failures) and template DNA	Hayes & Karl (2004)	-
<i>Nucella lapillus</i>	Dog whelk	Separate sexes	No	14	Yes	Population subdivision or inbreeding	Kawai <i>et al.</i> (2001)	-
<i>Physa acuta</i>	Freshwater snail	Hermaphroditic	Yes	7	Yes	Null alleles (described as unlikely due to nature of target species and consistent heterozygote deficit over multiple localities and loci)	Monsutti & Perrin (1999)	-