

MUTANT MOUSE REGIONAL RESOURCE CENTER

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Genotyping protocol for consomic (chromosome substitution) strains: MMRRC:036684-036690-JAX

The consomic strains were generated by serial backcrossing onto the 129P3/J (JAX Stock # 000690) or C57BL/6ByJ (JAX Stock # 001139) inbred strains and genotyping markers polymorphic between the inbred progenitors.

To facilitate elimination of the donor genome unlinked to the target chromosome in the first two backcross generations (N2 and N3), the 19 autosomes and the X chromosome were genotyped with 955 (N2) or 855 (N3) single nucleotide polymorphism (SNP), simple sequence length polymorphism (SSLP) and coat color markers. Genotyping services were provided by the Center for Inherited Disease Research (CIDR). CIDR is fully funded through a federal contract from the National Institutes of Health to The Johns Hopkins University; contract number N01-HG-65403.

In N₄ and subsequent backcross and intercross generations, only donor chromosomes (1, 2, 7 or 9) were genotyped with chromosome-specific sets of SNP markers selected to prevent the loss of the donor chromosome fragments due to double-crossovers and to minimize the loss of the centromeric and telomeric regions (Tables 1-4; marker positions are from the mouse genome sequence assembly build 37.1). Genotyping was conducted by KBioscience (<http://www.kbioscience.co.uk>) using the proprietary KBioscience Competitive Allele-Specific PCR genotyping system (KASP) combined with the SNPLine instrumentation (Fig. 1). Some markers were genotyped at the Monell Center using the Applied Biosystems (ABI, www.appliedbiosystems.com) TaqMan® SNP genotyping assays and real-time PCR instruments.

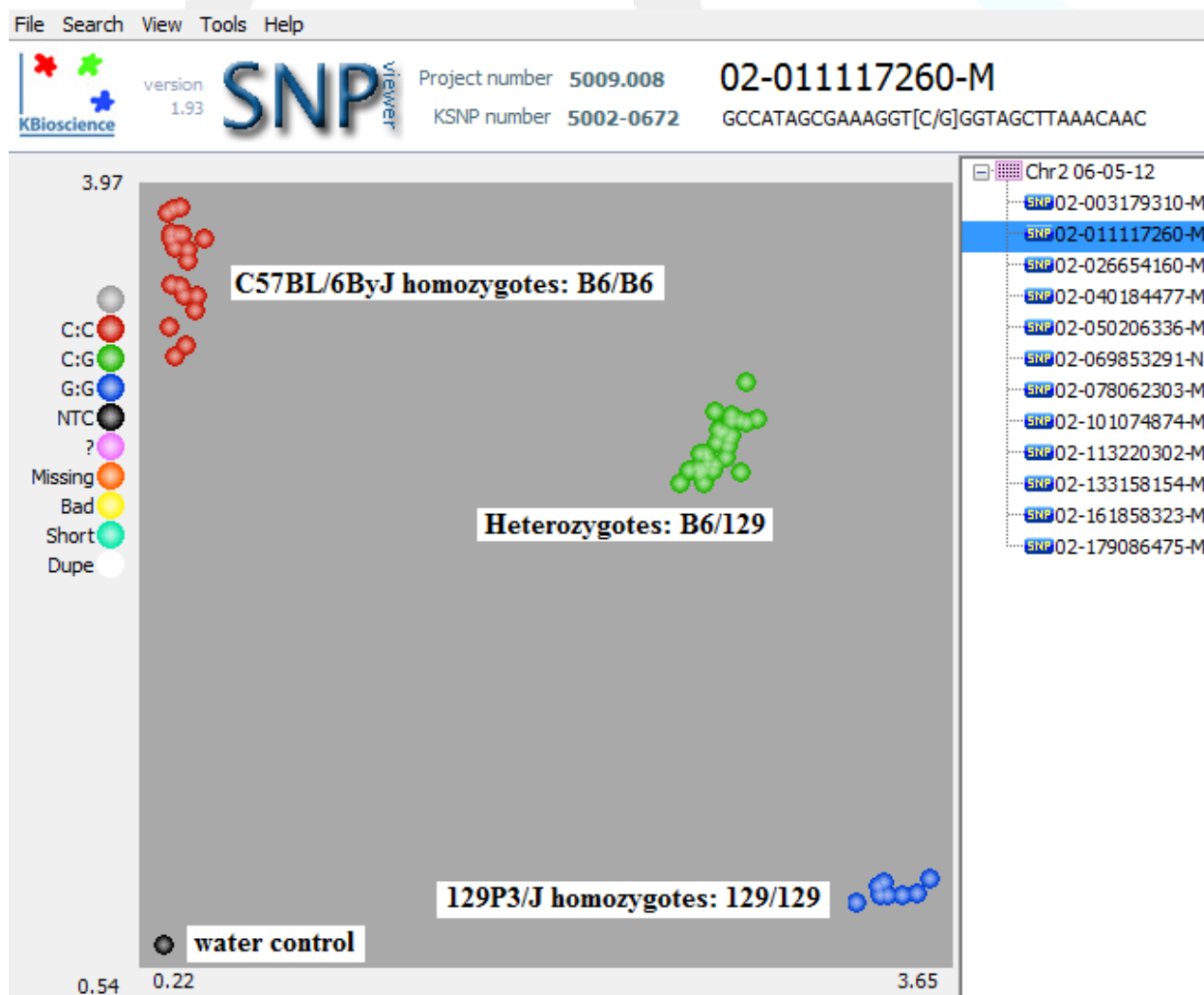


Figure 1. An example of an SNP marker genotyped using the KASP allelic discrimination assay. Three genotypes (homozygote B6/B6, heterozygote B6/129 and homozygote 129/129) and no-template (water) control are shown in different colors.

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Table 1. SNP markers used to genotype the 129P3/J-Chr 1^{C57BL/6ByJ}/MonMmjax ([MMRRC:036684](#)) strain.

KBioscience ID	NCBI ID	Chromosome	Position (bp)
01-005230167-M	rs3708040	1	5215199
01-026072256-M	rs3666554	1	25731275
01-038984204-M	rs3663884	1	38535164
01-043973192-M	rs4136282	1	43506447
01-069924080-M	rs3705281	1	69324554
01-079289860-N	rs4222476	1	78421877
01-102073421-M	rs3720366	1	103425685
01-134214449-N	rs3022833	1	135256759
01-162237105-M	rs4135672	1	162990416
01-172244784-N	rs3022854	1	172891015
01-185013929-M	rs3678548	1	185740443
01-191804699-M	rs3699344	1	192267912

Table 2. SNP markers used to genotype the 129P3/J-Chr 2^{C57BL/6ByJ}/MonMmjax ([MMRRC:036685](#)) and C57BL/6ByJ-Chr 2^{129P3/J}/MonMmjax ([MMRRC:036688](#)) strains.

KBioscience ID	NCBI ID	Chromosome	Position (bp)
02-003179310-M	rs3713997	2	3,151,175
02-011117260-M	rs3698941	2	10,964,969
02-026654160-M	rs3681655	2	26,223,875
02-040184477-M	rs3710255	2	39,589,200
02-050206336-M	rs3684870	2	49,566,443
02-069853291-N	rs3022887	2	68,921,191
02-078062303-M	rs3670874	2	77,028,245
02-101074874-M	rs3686727	2	99,962,752
02-113220302-M	rs3681694	2	112,125,008
02-133158154-M	rs3724080	2	131,981,147
02-161858323-M	rs3693259	2	160,792,944
02-179086475-M	rs3680965	2	180,489,599

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Table 3. SNP markers used to genotype the 129P3/J-Chr 7^{C57BL/6ByJ}/MonMmjax ([MMRRC:036686](#)) and C57BL/6ByJ-Chr 7^{129P3/J}/MonMmjax ([MMRRC:036689](#)) strains.

KBioscience ID	NCBI ID	Chromosome	Position (bp)
07-009057918-M	rs3687759	7	13,527,768
07-018939701-M	rs3666902	7	27,469,269
07-022997618-M	rs3662246	7	31,508,107
07-039020313-M	rs3680765	7	56,652,493
07-057959143-M	rs3710266	7	75,671,284
07-070027360-M	rs3718876	7	87,675,735
07-091160556-M	rs3705245	7	108,491,014
07-096980068-M	rs3726275	7	114,552,091
07-108090524-M	rs3655334	7	125,592,474
07-122982432-M	rs3716088	7	140,189,839
07-135024189-M	rs3664224	7	151,765,715
07-135345950-N	rs4226997	7	152,082,670

Table 4. SNP markers used to genotype the 129P3/J-Chr 9^{C57BL/6ByJ}/MonMmjax ([MMRRC:036687](#)) and C57BL/6ByJ-Chr 9^{129P3/J}/MonMmjax ([MMRRC:036690](#)) strains.

KBioscience ID	NCBI ID	Chromosome	Position (bp)
09-003938578-M	rs3694533	9	4,020,321
09-008107689-M	rs3661373	9	8,127,763
09-016198772-M	rs3719348	9	16,021,041
09-034961903-M	rs3659084	9	34,646,174
09-053790242-M	rs3685939	9	53,269,034
09-062943829-N	rs4227706	9	62,226,500
09-079909549-M	rs3668451	9	78,993,967
09-088834868-M	rs3669564	9	87,780,386
09-098865563-M	rs3692530	9	98,249,448
09-110057634-M	rs3685576	9	108,961,893
09-115037423-M	rs3721068	9	113,824,128
Not available	rs8254399	9	123,944,013