

**Table S3 CpG dinucleotides tested for linkage in recombinant inbred strains**

Gene ID <sup>a</sup>	CpG chromosome, coordinate and strand	WGBS BN <sup>b</sup>	WGBS SHR <sup>b</sup>	WGBS difference <sup>b</sup>	BN (n=4) <sup>c</sup>	SHR (n=4) <sup>c</sup>	Difference <sup>c</sup>	Peak of linkage coordinate <sup>d</sup>	LOD score <sup>e</sup>	2-LOD interval	Linkage type	Sanger/Illumina <sup>f</sup>
<i>LOC100360843</i>	chr1:76260384:+	26	69	-43	50	76	-26	chr1:80926785	6.34	chr1:55981210-89159471	<i>cis</i>	S
<i>LOC100360843</i>	chr1:76260390:+	21	65	-44	36	76	-40	chr1:71780124	8.06	chr1:55981210-89159471	<i>cis</i>	S
<b><i>LOC100360843</i> average</b>	<b>chr1:76260305-76260666:+</b>				<b>43</b>	<b>76</b>	<b>-33</b>	<b>chr1:71780124</b>	<b>8.70</b>	<b>chr1:55981210-89159471</b>	<b><i>cis</i></b>	S
<i>Cast</i>	chr2:1577794:-	nd <sup>g</sup>	nd	nd	100	1	99	chr2:8864577	9.62	chr2:0-13411541	<i>cis</i>	S
<i>Cast</i>	chr2:1577799:-	nd	nd	nd	93	1	93	chr2:8864577	10.30	chr2:0-13411541	<i>cis</i>	S
<i>Cast</i>	chr2:1577803:-	nd	nd	nd	95	1	94	chr2:8864577	11.05	chr2:0-13411541	<i>cis</i>	S
<i>Cast</i>	chr2:1577819:-	nd	nd	nd	88	1	87	chr2:8864577	12.91	chr2:0-13411541	<i>cis</i>	S
<i>Cast</i>	chr2:1577857:-	nd	nd	nd	97	2	95	chr2:8864577	12.29	chr2:0-13411541	<i>cis</i>	S
<i>Cast</i>	chr2:1577875:-	nd	nd	nd	96	7	89	chr2:8864577	12.18	chr2:0-13411541	<i>cis</i>	S
<i>Cast</i>	chr2:1577880:-	nd	nd	nd	99	4	95	chr2:8864577	12.41	chr2:0-13411541	<i>cis</i>	S
<i>Cast</i>	chr2:1577899:-	nd	nd	nd	100	2	98	chr2:8864577	12.51	chr2:0-13411541	<i>cis</i>	S
<i>Cast</i>	chr2:1577909:-	90	18	72	99	2	98	chr2:8864577	12.50	chr2:0-13411541	<i>cis</i>	S
<i>Cast</i>	chr2:1577916:-	nd	nd	nd	88	2	86	chr2:8864577	12.78	chr2:0-13411541	<i>cis</i>	S
<i>Cast</i>	chr2:1577947:-	100	16	84	100	15	85	chr2:8864577	12.20	chr2:0-13411541	<i>cis</i>	S
<b><i>Cast</i> average</b>	<b>chr2:1577677-1577984:-</b>				<b>96</b>	<b>3</b>	<b>93</b>	<b>chr2:8864577</b>	<b>12.57</b>	<b>chr2:0-13411541</b>	<b><i>cis</i></b>	S
<i>Fam198b</i>	chr2:171370578:+	61	49	12	72	58	14	chr2:166553647	8.81	chr2:164055359-172685103	<i>cis</i>	S
<i>Fam198b</i>	chr2:171370584:+	75	52	23	80	65	15	chr2:166553647	11.26	chr2:164055359-172685103	<i>cis</i>	S
<i>Fam198b</i>	chr2:171370615:+	76	57	19	92	74	18	chr2:166553647	12.22	chr2:164055359-172685103	<i>cis</i>	S
<i>Fam198b</i>	chr2:171370624:+	86	58	28	90	72	17	chr2:166553647	11.34	chr2:164055359-172685103	<i>cis</i>	S
<b><i>Fam198b</i> average</b>	<b>chr2:171370462-171370757:+</b>				<b>83</b>	<b>67</b>	<b>16</b>	<b>chr2:166553647</b>	<b>13.87</b>	<b>chr2:164055359-172685103</b>	<b><i>cis</i></b>	S
<i>Odpf2</i>	chr3:8876367:+	40	60	-20	73	82	-9	chr2:82938235	7.57	chr2:82818916-83039313	<i>trans</i>	S
<i>Odpf2</i>	chr3:8876373:+	29	50	-21	64	77	-13	chr2:82938235	5.79	chr2:82282002-83709691	<i>trans</i>	S
<i>Odpf2</i>	chr3:8876382:+	27	46	-19	61	71	-10	chr2:82938235	4.47	chr2:79300696-83709691	<i>trans</i>	S
<i>Odpf2</i>	chr3:8876397:+	37	62	-25	76	85	-9	chr2:82938235	5.05	chr2:79300696-83709691	<i>trans</i>	S
<i>Odpf2</i>	chr3:8876402:+	48	73	-25	84	90	-6	chr2:82938235	5.82	chr2:79300696-83709691	<i>trans</i>	S
<i>Odpf2</i>	chr3:8876433:+	41	62	-21	74	84	-10	chr2:82938235	3.59	chr2:75338743-83709691	<i>trans</i>	S
<i>Odpf2</i>	chr3:8876480:+	9	14	-5	39	48	-9	chr2:82282002	2.51	n/a <sup>h</sup>	no signif linkage <sup>i</sup>	S
<i>Odpf2</i>	chr3:8876484:+	10	25	-15	43	55	-12	chr2:82282002	2.27	n/a	no signif linkage	S
<b><i>Odpf2</i> average</b>	<b>chr3:8876123-8876785:+</b>				<b>72</b>	<b>81</b>	<b>-10</b>	<b>chr2:82938235</b>	<b>6.10</b>	<b>chr2:79300696-83039313</b>	<b><i>trans</i></b>	S
<i>Akr1b10</i>	chr4:61757643:+	8	8	8	22	33	-12	chr17:39969064	1.95	n/a	no signif linkage	I
<i>Akr1b10</i>	chr4:61757653:+	18	18	18	16	28	-12	chr17:28025480	2.23	n/a	no signif linkage	I
<i>Akr1b10</i>	chr4:61757680:+	6	29	-23	9	19	-10	chr15:54570481	2.23	n/a	no signif linkage	I
<i>Akr1b10</i>	chr4:61757702:+	4	4	4	9	17	-8	chr17:24218005	3.09	n/a	no signif linkage	I
<i>Akr1b10</i>	chr4:61757723:+	20	20	20	32	42	-11	chr4:64105027	3.23	n/a	no signif linkage	I
<i>Akr1b10</i>	chr4:61757729:+	16	16	16	27	40	-13	chr1:237021546	3.94	chr1:236899082-240673620	<i>trans</i>	I
<b><i>Akr1b10</i> average</b>	<b>chr4:61757621-61757753:+</b>				<b>19</b>	<b>30</b>	<b>-11</b>	<b>chr4:63305380</b>	<b>2.91</b>	<b>n/a</b>	<b>no signif linkage</b>	I
<i>RGD1564053</i>	chr5:6849865:+	21	39	-18	15	34	-19	chr5:4525855	6.83	chr5:1894554-7625963	<i>cis</i>	I
<i>RGD1564053</i>	chr5:6849899:+	66	89	-23	50	81	-31	chr5:6419261	9.57	chr5:1894554-13327089	<i>cis</i>	I
<i>RGD1564053</i>	chr5:6849920:+	73	83	-10	67	73	-6	chr5:6419261	2.16	n/a	no signif linkage	I
<i>RGD1564053</i>	chr5:6849925:+	96	92	4	83	81	2	chr14:36607884	2.06	n/a	no signif linkage	I
<b><i>RGD1564053</i> average</b>	<b>chr5:6849814-6849947:+</b>				<b>54</b>	<b>67</b>	<b>-13</b>	<b>chr5:6419261</b>	<b>7.35</b>	<b>chr5:1894554-13327089</b>	<b><i>cis</i></b>	I
<i>Nsmaf</i>	chr5:19887393:+	73	70	3	77	65	12	chr5:17516274	4.87	chr5:14415906-24215534	<i>cis</i>	I
<i>Nsmaf</i>	chr5:19887422:+	64	51	13	58	53	6	chr5:17516274	4.20	chr5:4525855-24215534	<i>cis</i>	I
<i>Nsmaf</i>	chr5:19887432:+	74	61	13	74	54	20	chr5:17516274	8.05	chr5:16184249-24215534	<i>cis</i>	I
<i>Nsmaf</i>	chr5:19887480:+	60	40	20	67	51	16	chr5:17516274	11.22	chr5:16184249-20153421	<i>cis</i>	I
<b><i>Nsmaf</i> average</b>	<b>chr5:19887357-19887486:+</b>				<b>69</b>	<b>56</b>	<b>13</b>	<b>chr5:17516274</b>	<b>11.67</b>	<b>chr5:16184249-20153421</b>	<b><i>cis</i></b>	I

<i>RGD1565350</i>	chr5:62118122:+	29	14	14	24	15	9	chr5:56293047	3.93	chr5:40389315-58060089	<i>cis</i>	I
<i>RGD1565350</i>	chr5:62118163:+	61	40	21	63	39	25	chr5:62039612	10.42	chr5:61230757-64094065	<i>cis</i>	I
<i>RGD1565350</i>	chr5:62118183:+	48	34	14	44	28	16	chr5:62039612	12.43	chr5:61230757-64094065	<i>cis</i>	I
<i>RGD1565350</i>	chr5:62118194:+	50	38	12	43	30	13	chr5:62039612	7.93	chr5:61230757-64094065	<i>cis</i>	I
<b>RGD1565350 average</b>	<b>chr5:62118077-62118218:+</b>				<b>44</b>	<b>28</b>	<b>16</b>	<b>chr5:62039612</b>	<b>12.22</b>	<b>chr5:61230757-64094065</b>	<b><i>cis</i></b>	<b>I</b>
<i>Galnt12</i>	chr5:63712047:+	42	71	-29	34	63	-30	chr5:62039612	7.53	chr5:58060089-64694890	<i>cis</i>	I
<i>Galnt12</i>	chr5:63712080:+	51	67	-16	40	66	-25	chr5:64094065	4.77	chr5:58060089-74190073	<i>cis</i>	I
<i>Galnt12</i>	chr5:63712088:+	58	68	-10	44	71	-27	chr5:62039612	7.62	chr5:58501829-64094065	<i>cis</i>	I
<i>Galnt12</i>	chr5:63712117:+	16	29	-13	14	24	-10	chr5:62039612	3.04	n/a	no signif linkage	I
<i>Galnt12</i>	chr5:63712134:+	34	67	-33	35	63	-28	chr5:62039612	9.54	chr5:58060089-64094065	<i>cis</i>	I
<b>Galnt12 average</b>	<b>chr5:63712033-63712186:+</b>				<b>34</b>	<b>57</b>	<b>-24</b>	<b>chr5:62039612</b>	<b>12.09</b>	<b>chr5:61230757-64094065</b>	<b><i>cis</i></b>	<b>I</b>
<i>F1M4B7_RAT</i>	chr5:87563006:+	59	33	26	54	27	27	chr5:83313363	13.28	chr5:83167847-88056807	<i>cis</i>	I
<i>F1M4B7_RAT</i>	chr5:87563013:+	53	30	23	45	24	21	chr5:83313363	12.80	chr5:83167847-88056807	<i>cis</i>	I
<i>F1M4B7_RAT</i>	chr5:87563081:+	86	53	33	82	44	38	chr5:83313363	18.66	chr5:83167847-88056807	<i>cis</i>	I
<i>F1M4B7_RAT</i>	chr5:87563083:+	76	43	33	69	35	34	chr5:83313363	14.20	chr5:83167847-88056807	<i>cis</i>	I
<b>F1M4B7_RAT average</b>	<b>chr5:87563005-87563150:+</b>				<b>62</b>	<b>32</b>	<b>30</b>	<b>chr5:83313363</b>	<b>16.98</b>	<b>chr5:83167847-88056807</b>	<b><i>cis</i></b>	<b>I</b>
<i>Cdkn2b</i>	chr5:108937537:+	9	18	-9	17	23	-6	chr5:108704737	4.24	chr5:97254326-120148225	<i>cis</i>	I
<i>Cdkn2b</i>	chr5:108937541:+	7	16	-9	12	19	-6	chr5:108704737	3.89	chr5:103285990-120148225	<i>cis</i>	I
<i>Cdkn2b</i>	chr5:108937609:+	35	42	-7	42	51	-9	chr1:234601040	2.10	n/a	no signif linkage	I
<i>Cdkn2b</i>	chr5:108937640:+	15	41	-26	24	36	-12	chr5:108704737	5.89	chr5:106314352-119017376	<i>cis</i>	I
<b>Cdkn2b average</b>	<b>chr5:108937522-108937640:+</b>				<b>24</b>	<b>32</b>	<b>-8</b>	<b>chr5:108704737</b>	<b>4.79</b>	<b>chr5:106314352-119017376</b>	<b><i>cis</i></b>	<b>I</b>
<i>Ttc22</i>	chr5:127700274:+	23	41	-18	34	49	-15	chr5:127023735	6.54	chr5:124763813-137473830	<i>cis</i>	S
<i>Ttc22</i>	chr5:127700277:+	15	30	-15	30	47	-18	chr5:127023735	6.24	chr5:126790264-130615503	<i>cis</i>	S
<i>Ttc22</i>	chr5:127700328:+	21	39	-18	36	51	-15	chr5:127023735	5.75	chr5:124763813-135115333	<i>cis</i>	S
<i>Ttc22</i>	chr5:127700333:+	19	49	-30	46	65	-19	chr5:127023735	4.05	124763813-141408867	<i>cis</i>	S
<i>Ttc22</i>	chr5:127700335:+	31	56	-25	59	77	-18	chr5:127023735	4.77	chr5:124763813-137473830	<i>cis</i>	S
<i>Ttc22</i>	chr5:127700343:+	30	70	-40	61	74	-13	chr5:130615503	5.51	chr5:124763813-136970505	<i>cis</i>	S
<i>Ttc22</i>	chr5:127700353:+	33	58	-25	63	76	-13	chr5:135115333	3.59	n/a	no signif linkage	S
<i>Ttc22</i>	chr5:127700355:+	31	60	-29	60	74	-14	chr5:127023735	5.81	chr5:124763813-136072542	<i>cis</i>	S
<b>Ttc22 average</b>	<b>chr5:127700207-127700483:+</b>				<b>47</b>	<b>63</b>	<b>-16</b>	<b>chr5:127023735</b>	<b>7.19</b>	<b>chr5:126790264-130615503</b>	<b><i>cis</i></b>	<b>S</b>
<i>Slc2a1</i>	chr5:139703426:+	88	91	-3	88	81	7	chr4:51563781	1.73	n/a	no signif linkage	I
<i>Slc2a1</i>	chr5:139703437:+	94	93	1	96	91	5	chr5:147970080	2.29	n/a	no signif linkage	I
<i>Slc2a1</i>	chr5:139703480:+	59	62	-3	53	43	10	chr4:51563781	1.88	n/a	no signif linkage	I
<i>Slc2a1</i>	chr5:139703549:+	87	7	80	76	0	76	chr5:137825190	31.98	chr5:137473830-141408867	<i>cis</i>	I
<b>Slc2a1 average</b>	<b>chr5:139703426-139703584:+</b>				<b>78</b>	<b>54</b>	<b>24</b>	<b>chr5:137825190</b>	<b>18.10</b>	<b>chr5:137473830-141408867</b>	<b><i>cis</i></b>	<b>I</b>
<i>Rragc</i>	chr5:143257694:+	48	55	-7	34	52	-18	chr5:143426944	4.30	chr5:137473830-145136680	<i>cis</i>	I
<i>Rragc</i>	chr5:143257762:+	48	67	-19	38	54	-16	chr5:143426944	6.60	chr5:137825190-145136680	<i>cis</i>	I
<i>Rragc</i>	chr5:143257789:+	56	83	-28	49	67	-18	chr5:141408867	8.18	chr5:137825190-145136680	<i>cis</i>	I
<i>Rragc</i>	chr5:143257837:+	51	69	-18	48	72	-24	chr5:141408867	5.11	chr5:137473830-145136680	<i>cis</i>	I
<b>Rragc average</b>	<b>chr5:143257694-143257854:+</b>				<b>42</b>	<b>61</b>	<b>-19</b>	<b>chr5:141408867</b>	<b>9.20</b>	<b>chr5:137825190-145136680</b>	<b><i>cis</i></b>	<b>I</b>
<i>Rragc</i>	chr5:143573598:+	31	64	-33	25	63	-37	chr5:143426944	8.31	chr5:141408867-145136680	<i>cis</i>	I
<i>Rragc</i>	chr5:143573621:+	30	71	-41	27	60	-33	chr5:143426944	8.86	chr5:141408867-145136680	<i>cis</i>	I
<i>Rragc</i>	chr5:143573627:+	60	94	-33	51	84	-34	chr5:143426944	6.70	chr5:141408867-145136680	<i>cis</i>	I
<i>Rragc</i>	chr5:143573649:+	27	64	-37	20	53	-33	chr5:143426944	7.32	chr5:141408867-145136680	<i>cis</i>	I
<i>Rragc</i>	chr5:143573687:+	41	75	-33	38	72	-34	chr5:143426944	8.46	chr5:141408867-145136680	<i>cis</i>	I
<b>Rragc average</b>	<b>chr5:143573578-143573701:+</b>				<b>32</b>	<b>66</b>	<b>-34</b>	<b>chr5:143426944</b>	<b>11.40</b>	<b>chr5:141408867-145136680</b>	<b><i>cis</i></b>	<b>I</b>
<i>Epha2</i>	chr5:160184557:+	43	23	20	82	65	17	chr5:159699655	5.96	chr5:158655817-163883415	<i>cis</i>	S
<i>Epha2</i>	chr5:160184560:+	43	22	21	77	55	23	chr5:159699655	9.85	chr5:159338084-163883415	<i>cis</i>	S
<i>Epha2</i>	chr5:160184634:+	41	57	-16	63	81	-18	chr5:159699655	9.39	chr5:159338084-163883415	<i>cis</i>	S
<b>Epha2 average</b>	<b>chr5:160184417-160184704:+</b>				<b>74</b>	<b>67</b>	<b>7</b>	<b>chr20:2931904</b>	<b>2.38</b>	<b>n/a</b>	<b>no signif linkage</b>	<b>S</b>

<i>Tmem178</i>	chr6:3892309:+	32	85	-53	31	67	-37	chr6:3837300	17.72	chr6:270828-5001565	<i>cis</i>	
<i>Tmem178</i>	chr6:3892344:+	30	88	-59	25	60	-35	chr6:3837300	15.16	chr6:270828-5001565	<i>cis</i>	
<i>Tmem178</i>	chr6:3892374:+	29	71	-42	24	54	-30	chr6:3837300	11.70	chr6:270828-5001565	<i>cis</i>	
<i>Tmem178</i>	chr6:3892397:+	38	88	-49	23	56	-33	chr6:3837300	15.19	chr6:270828-5001565	<i>cis</i>	
<i>Tmem178</i>	chr6:3892406:+	44	79	-36	26	57	-31	chr6:3837300	17.81	chr6:270828-5001565	<i>cis</i>	
<i>Tmem178</i>	chr6:3892412:+	18	44	-26	12	29	-16	chr6:3837300	8.44	chr6:270828-5001565	<i>cis</i>	
<b>Tmem178 average</b>	<b>chr6:3892290-3892428:+</b>				<b>24</b>	<b>54</b>	<b>-30</b>	<b>chr6:3837300</b>	<b>17.98</b>	<b>chr6:270828-5001565</b>	<b><i>cis</i></b>	
<i>Asap2</i>	chr6:41745653:+	88	91	-3	78	83	-4	chr11:82046320	3.11	n/a	no signif linkage	
<i>Asap2</i>	chr6:41745660:+	94	95	-1	68	65	3	chr6:115004085	3.10	n/a	no signif linkage	
<i>Asap2</i>	chr6:41745686:+	67	90	-22	69	91	-22	chr6:40832900	6.32	chr6:38837057-44677919	<i>cis</i>	
<i>Asap2</i>	chr6:41745719:+	85	90	-5	89	82	7	chr8:43888617	2.58	n/a	no signif linkage	
<b>Asap2 average</b>	<b>chr6:41745647-41745769:+</b>				<b>76</b>	<b>80</b>	<b>-4</b>	<b>chr1:249360014</b>	<b>4.88</b>	<b>chr1:240992368-252871262</b>	<b><i>trans</i></b>	
<i>F1LUN1_RAT</i>	chr6:59772079:+	73	50	23	79	53	26	chr6:56831273	12.94	chr6:53530806-65742462	<i>cis</i>	
<i>F1LUN1_RAT</i>	chr6:59772113:+	92	65	27	94	68	27	chr6:56831273	14.72	chr6:53530806-65742462	<i>cis</i>	
<i>F1LUN1_RAT</i>	chr6:59772118:+	89	61	28	95	64	31	chr6:56831273	12.49	chr6:53530806-65742462	<i>cis</i>	
<i>F1LUN1_RAT</i>	chr6:59772129:+	87	63	24	93	69	24	chr6:56831273	11.81	chr6:53530806-65742462	<i>cis</i>	
<i>F1LUN1_RAT</i>	chr6:59772153:+	90	80	9	91	74	16	chr6:56831273	6.80	chr6:53530806-69173770	<i>cis</i>	
<b>F1LUN1_RAT average</b>	<b>chr6:59772063-59772192:+</b>				<b>90</b>	<b>66</b>	<b>25</b>	<b>chr6:56831273</b>	<b>14.46</b>	<b>chr6:53530806-65742462</b>	<b><i>cis</i></b>	
<i>Map4k5</i>	chr6:91976035:+	nd	nd	nd	35	63	-28	chr6:86088639	18.59	chr6:80603661-92298609	<i>cis</i>	S
<i>Map4k5</i>	chr6:91976050:+	nd	nd	nd	15	52	-37	chr6:86088639	22.47	chr6:80603661-92298609	<i>cis</i>	S
<i>Map4k5</i>	chr6:91976119:+	17	56	-38	22	77	-55	chr6:86088639	12.15	chr6:80603661-92298609	<i>cis</i>	S
<b>Map4k5 average</b>	<b>chr6:91975954-91976205:+</b>				<b>24</b>	<b>64</b>	<b>-40</b>	<b>chr6:86088639</b>	<b>23.28</b>	<b>chr6:80603661-92298609</b>	<b><i>cis</i></b>	S
<i>Snapc1</i>	chr6:96511559:+	10	21	-12	11	23	-12	chr6:93310927	4.54	chr6:86088639-104870403	<i>cis</i>	
<i>Snapc1</i>	chr6:96511617:+	5	12	-7	9	17	-8	chr14:13776720	2.61	n/a	no signif linkage	
<i>Snapc1</i>	chr6:96511637:+	7	29	-22	9	25	-16	chr6:93310927	4.45	chr6:80603661-104870403	<i>cis</i>	
<i>Snapc1</i>	chr6:96511668:+	25	39	-14	31	57	-26	chr6:93310927	9.39	chr6:92298609-97966119	<i>cis</i>	
<b>Snapc1 average</b>	<b>chr6:96511512-96511670:+</b>				<b>15</b>	<b>30</b>	<b>-16</b>	<b>chr6:93310927</b>	<b>9.64</b>	<b>chr6:92298609-98679608</b>	<b><i>cis</i></b>	
<i>F1M804_RAT</i>	chr6:98659102:+	55	64	-9	44	45	-1	chr2:242410458	3.25	n/a	no signif linkage	
<i>F1M804_RAT</i>	chr6:98659149:+	83	78	5	70	63	6	chr6:6778779	2.67	n/a	no signif linkage	
<i>F1M804_RAT</i>	chr6:98659194:+	85	38	46	77	23	55	chr6:98679608	18.50	chr6:97966119-98698763	<i>cis</i>	
<i>F1M804_RAT</i>	chr6:98659199:+	75	82	-7	68	64	4	chr3:103249862	2.83	n/a	no signif linkage	
<b>F1M804_RAT average</b>	<b>chr6:98659081-98659233:+</b>				<b>65</b>	<b>49</b>	<b>16</b>	<b>chr6:98679608</b>	<b>5.17</b>	<b>chr6:93310927-104870403</b>	<b><i>cis</i></b>	
<i>Bcl11b</i>	chr6:132185613:+	50	74	-24	46	61	-14	chr6:131897632	4.23	chr6:129241985-144480901	<i>cis</i>	
<i>Bcl11b</i>	chr6:132185695:+	20	52	-32	14	42	-28	chr6:131897632	10.39	chr6:129241985-132699487	<i>cis</i>	
<i>Bcl11b</i>	chr6:132185717:+	29	56	-28	32	49	-17	chr6:131897632	3.31	n/a	no signif linkage	
<b>Bcl11b average</b>	<b>chr6:132185611-132185763:+</b>				<b>31</b>	<b>51</b>	<b>-20</b>	<b>chr6:131897632</b>	<b>10.36</b>	<b>chr6:129241985-132699487</b>	<b><i>cis</i></b>	
<i>Ppp1r13b</i>	chr6:136693323:+	44	70	-26	37	69	-31	chr6:132699487	9.63	chr6:129241985-144480901	<i>cis</i>	
<i>Ppp1r13b</i>	chr6:136693329:+	83	74	9	70	62	8	chr6:132699487	5.15	chr6:129241985-144480901	<i>cis</i>	
<i>Ppp1r13b</i>	chr6:136693343:+	38	31	7	36	25	12	chr6:132699487	7.25	chr6:131897632-141539352	<i>cis</i>	
<i>Ppp1r13b</i>	chr6:136693363:+	70	61	9	69	52	17	chr6:132699487	5.13	chr6:128853105-145193067	<i>cis</i>	
<i>Ppp1r13b</i>	chr6:136693388:+	40	40	0	37	33	3	chr6:132699487	5.14	chr6:129241985-144480901	<i>cis</i>	
<i>Ppp1r13b</i>	chr6:136693396:+	85	86	-1	76	76	0	chr19:2708374	2.30	n/a	no signif linkage	
<i>Ppp1r13b</i>	chr6:136693419:+	87	91	-4	82	82	0	chr16:45349355	3.15	n/a	no signif linkage	
<i>Ppp1r13b</i>	chr6:136693436:+	80	76	4	76	76	0	chr1:90431156	2.45	n/a	no signif linkage	
<b>Ppp1r13b average</b>	<b>chr6:136693300-136693442:+</b>				<b>60</b>	<b>59</b>	<b>1</b>	<b>chr6:132699487</b>	<b>3.34</b>	<b>n/a</b>	<b>no signif linkage</b>	
<i>Fgd6</i>	chr7:31169450:+	91	84	7	91	84	7	chr7:30134941	3.89	n/a	no signif linkage	
<i>Fgd6</i>	chr7:31169505:+	88	77	11	73	64	9	chr7:30134941	4.19	chr7:22107933-32221040	<i>cis</i>	
<i>Fgd6</i>	chr7:31169556:+	70	48	21	66	57	10	chr7:30134941	5.40	chr7:22107933-32221040	<i>cis</i>	
<b>Fgd6 average</b>	<b>chr7:31169443-31169556:+</b>				<b>77</b>	<b>68</b>	<b>9</b>	<b>chr7:30134941</b>	<b>6.46</b>	<b>chr7:22107933-32221040</b>	<b><i>cis</i></b>	

<i>Tbc1d30</i>	chr7:60595192:+	31	27	4	40	33	8	chr7:60397471	5.50	chr7:60128525-72623825	<i>cis</i>	I
<i>Tbc1d30</i>	chr7:60595202:+	35	36	-1	43	39	5	chr2:153116666	3.01	n/a	no signif linkage	I
<i>Tbc1d30</i>	chr7:60595204:+	20	25	-5	27	34	-7	chr6:9974757	2.62	n/a	no signif linkage	I
<i>Tbc1d30</i>	chr7:60595224:+	24	26	-2	20	33	-13	chr2:149178695	2.06	n/a	no signif linkage	I
<i>Tbc1d30</i>	chr7:60595233:+	32	1	32	38	29	9	chr2:159881070	3.19	n/a	no signif linkage	I
<i>Tbc1d30</i>	chr7:60595253:+	40	35	5	43	62	-20	chr7:60128525	6.55	chr7:51368543-61371130	<i>cis</i>	I
<i>Tbc1d30</i>	chr7:60595274:+	40	34	6	45	60	-15	chr7:60128525	8.07	chr7:51368543-61371130	<i>cis</i>	I
<i>Tbc1d30</i>	chr7:60595314:+	32	24	8	41	48	-7	chr7:60128525	3.56	n/a	no signif linkage	I
<i>Tbc1d30</i>	chr7:60595335:+	14	10	4	22	26	-4	chr3:164374674	2.33	n/a	no signif linkage	I
<i>Tbc1d30</i>	chr7:60595351:+	4	6	-2	13	13	0	chr19:43368611	2.23	n/a	no signif linkage	I
<b><i>Tbc1d30</i> average</b>	<b>chr7:60595191-60595353:+</b>				<b>33</b>	<b>38</b>	<b>-4</b>	<b>chr7:41970847</b>	<b>2.95</b>	<b>n/a</b>	<b>no signif linkage</b>	I
<i>Nsmce2</i>	chr7:96296512:+	92	89	3	73	60	13	chr15:94925958	2.43	n/a	no signif linkage	I
<i>Nsmce2</i>	chr7:96296572:+	84	88	-4	90	78	13	chr7:94054636	3.58	n/a	no signif linkage	I
<i>Nsmce2</i>	chr7:96296599:+	58	35	23	50	31	19	chr7:94054636	10.32	chr7:92129202-98093741	<i>cis</i>	I
<i>Nsmce2</i>	chr7:96296618:+	94	78	16	92	91	1	chr20:34084707	2.29	n/a	no signif linkage	I
<b><i>Nsmce2</i> average</b>	<b>chr7:96296486-96296639:+</b>				<b>76</b>	<b>65</b>	<b>11</b>	<b>chr7:94054636</b>	<b>9.49</b>	<b>chr7:92129202-98093741</b>	<b><i>cis</i></b>	I
<i>Ly6e</i>	chr7:113120800:+	2	77	-75	11	70	-59	chr7:113865618	7.37	chr7:106541122-114437124	<i>cis</i>	S
<i>Ly6e</i>	chr7:113120876:+	19	44	-25	16	62	-45	chr7:108819248	8.08	chr7:106541122-113865618	<i>cis</i>	S
<i>Ly6e</i>	chr7:113120938:+	2	15	-13	0	49	-49	chr7:108819248	9.00	chr7:106541122-113865618	<i>cis</i>	S
<b><i>Ly6e</i> average</b>	<b>chr7:113120765-113121068:+</b>				<b>9</b>	<b>60</b>	<b>-51</b>	<b>chr7:108819248</b>	<b>9.61</b>	<b>chr7:106541122-114437124</b>	<b><i>cis</i></b>	S
<i>Naprt1</i>	chr7:113868517:-	5	29	-24	14	53	-39	chr7:113865618	4.39	chr7:106541122-114437124	<i>cis</i>	S
<i>Naprt1</i>	chr7:113868460:-	2	42	-40	10	53	-43	chr7:113865618	12.68	chr7:108819248-114437124	<i>cis</i>	S
<i>Naprt1</i>	chr7:113868451:-	11	30	-19	16	70	-55	chr7:113865618	12.98	chr7:108819248-114437124	<i>cis</i>	S
<i>Naprt1</i>	chr7:113868449:-	7	23	-16	10	54	-44	chr7:113865618	12.55	chr7:108819248-114437124	<i>cis</i>	S
<i>Naprt1</i>	chr7:113868442:-	13	34	-21	14	67	-53	chr7:113865618	10.16	chr7:108819248-114437124	<i>cis</i>	S
<i>Naprt1</i>	chr7:113868436:-	15	32	-17	36	75	-39	chr7:113865618	9.77	chr7:108819248-114437124	<i>cis</i>	S
<b><i>Naprt1</i> average</b>	<b>chr7:113868322-113868588:-</b>				<b>17</b>	<b>62</b>	<b>-46</b>	<b>chr7:113865618</b>	<b>9.77</b>	<b>chr7:108819248-114437124</b>	<b><i>cis</i></b>	S
<i>E9PSL5_RAT</i>	chr7:116060485:+	28	53	-25	29	52	-24	chr7:114437124	8.35	chr7:113865618-122635137	<i>cis</i>	I
<i>E9PSL5_RAT</i>	chr7:116060555:+	66	78	-12	58	72	-14	chr7:117007096	6.44	chr7:108819248-125417420	<i>cis</i>	I
<i>E9PSL5_RAT</i>	chr7:116060590:+	86	91	-5	86	87	-1	chr5:141408867	2.50	n/a	no signif linkage	I
<i>E9PSL5_RAT</i>	chr7:116060597:+	79	78	1	74	85	-11	chr9:4289268	3.25	n/a	no signif linkage	I
<b><i>E9PSL5_RAT</i> average</b>	<b>chr7:116060462-116060604:+</b>				<b>62</b>	<b>74</b>	<b>-12</b>	<b>chr7:114437124</b>	<b>7.76</b>	<b>chr7:108819248-121883064</b>	<b><i>cis</i></b>	I
<i>Nfam1</i>	chr7:121018647:+	86	77	9	77	64	13	chr7:114437124	4.48	chr7:100067811-128152751	<i>cis</i>	I
<i>Nfam1</i>	chr7:121018653:+	87	83	4	73	60	14	chr7:117555752	2.60	n/a	no signif linkage	I
<i>Nfam1</i>	chr7:121018720:+	60	33	27	64	37	27	chr7:117555752	10.13	chr7:117007096-121842583	<i>cis</i>	I
<i>Nfam1</i>	chr7:121018752:+	75	46	29	66	51	15	chr7:117555752	7.10	chr7:117007096-121883510	<i>cis</i>	I
<i>Nfam1</i>	chr7:121018772:+	80	55	25	84	53	31	chr7:117555752	13.11	chr7:117007096-121842583	<i>cis</i>	I
<b><i>Nfam1</i> average</b>	<b>chr7:121018632-121018780:+</b>				<b>73</b>	<b>53</b>	<b>20</b>	<b>chr7:117555752</b>	<b>13.84</b>	<b>chr7:117007096-121711167</b>	<b><i>cis</i></b>	I
<i>F1M9Y3_RAT</i>	chr7:13508204:+	2	23	-21	2	32	-30	chr7:10417532	16.97	chr7:10072378-13886210	<i>cis</i>	I
<i>F1M9Y3_RAT</i>	chr7:13508226:+	2	15	-13	1	27	-26	chr7:10417532	11.99	chr7:10072378-13886210	<i>cis</i>	I
<i>F1M9Y3_RAT</i>	chr7:13508243:+	2	21	-19	3	33	-30	chr7:10417532	13.50	chr7:10072378-13886210	<i>cis</i>	I
<i>F1M9Y3_RAT</i>	chr7:13508247:+	3	27	-24	3	39	-37	chr7:10417532	16.33	chr7:10072378-13886210	<i>cis</i>	I
<i>F1M9Y3_RAT</i>	chr7:13508251:+	2	23	-21	3	35	-31	chr7:10417532	14.45	chr7:10072378-13886210	<i>cis</i>	I
<i>F1M9Y3_RAT</i>	chr7:13508299:+	4	29	-25	2	35	-34	chr7:10417532	14.94	chr7:10072378-13886210	<i>cis</i>	I
<b><i>F1M9Y3_RAT</i> average</b>	<b>chr7:13508194-13508311:+</b>				<b>2</b>	<b>33</b>	<b>-31</b>	<b>chr7:10417532</b>	<b>15.70</b>	<b>chr7:10072378-13886210</b>	<b><i>cis</i></b>	I
<i>LOC100365068</i>	chr7:135196747:+	81	57	24	84	61	24	chr7:135435079	8.35	chr7:134894183-139323661	<i>cis</i>	I
<i>LOC100365068</i>	chr7:135196761:+	91	60	31	80	58	23	chr7:135435079	11.33	chr7:134894183-139323661	<i>cis</i>	I
<i>LOC100365068</i>	chr7:135196785:+	93	65	28	88	62	26	chr7:135435079	10.83	chr7:134894183-139323661	<i>cis</i>	I
<i>LOC100365068</i>	chr7:135196787:+	92	65	27	87	63	24	chr7:135435079	9.76	chr7:134894183-139323661	<i>cis</i>	I

<i>LOC100365068</i>	chr7:135196791:+	89	62	27	84	55	29	chr7:135435079	10.02	chr7:134894183-139323661	<i>cis</i>	I
<i>LOC100365068</i>	chr7:135196795:+	90	66	25	89	63	27	chr7:135435079	11.37	chr7:134894183-139323661	<i>cis</i>	I
<i>LOC100365068</i>	chr7:135196802:+	86	60	26	82	59	22	chr7:135435079	10.80	chr7:134894183-139323661	<i>cis</i>	I
<i>LOC100365068</i>	chr7:135196840:+	71	44	28	62	48	14	chr7:135435079	5.63	chr7:134894183-139323661	<i>cis</i>	I
<i>LOC100365068</i>	chr7:135196887:+	75	45	30	69	54	15	chr7:135435079	8.48	chr7:134894183-139323661	<i>cis</i>	I
<i>LOC100365068</i>	chr7:135196895:+	77	51	26	81	55	25	chr7:135435079	9.42	chr7:134894183-139323661	<i>cis</i>	I
<b>LOC100365068 average</b>	<b>chr7:135196738-135196895:+</b>				<b>81</b>	<b>58</b>	<b>23</b>	<b>chr7:135435079</b>	<b>10.79</b>	<b>chr7:134894183-139323661</b>	<b><i>cis</i></b>	<b>I</b>
<i>BI1_RAT</i>	chr7:138157743:+	35	76	-41	14	28	-15	chr4:115063428	3.64	n/a	no signif linkage	I
<i>BI1_RAT</i>	chr7:138157753:+	22	22	22	18	33	-15	chr1:205671704	2.15	n/a	no signif linkage	I
<i>BI1_RAT</i>	chr7:138157862:+	5	8	-3	9	19	-10	chr2:256707794	1.66	n/a	no signif linkage	I
<i>BI1_RAT</i>	chr7:138157866:+	6	11	-5	11	24	-13	chr9:67866953	3.57	n/a	no signif linkage	I
<b>BI1_RAT average</b>	<b>chr7:138157743-138157866:+</b>				<b>13</b>	<b>26</b>	<b>-13</b>	<b>chr6:37984850</b>	<b>4.08</b>	<b>n/a</b>	<b>no signif linkage</b>	<b>I</b>
<i>Krt4</i>	chr7:140634138:-	86	36	50	95	81	14	chr7:141354287	11.03	chr7:135435079-143002779	<i>cis</i>	S
<i>Krt4</i>	chr7:140634155:-	88	33	55	94	76	19	chr7:141354287	11.58	chr7:139538952-141594453	<i>cis</i>	S
<i>Krt4</i>	chr7:140634165:-	90	39	51	95	79	16	chr7:141354287	13.65	chr7:139538952-141594453	<i>cis</i>	S
<i>Krt4</i>	chr7:140634192:-	82	27	55	86	53	33	chr7:141354287	13.33	chr7:139538952-143002779	<i>cis</i>	S
<i>Krt4</i>	chr7:140634198:-	73	21	52	87	51	36	chr7:141354287	14.16	chr7:139538952-141594453	<i>cis</i>	S
<i>Krt4</i>	chr7:140634213:-	73	30	43	88	60	27	chr7:141354287	13.16	chr7:139538952-143002779	<i>cis</i>	S
<i>Krt4</i>	chr7:140634215:-	70	34	36	89	66	23	chr7:141354287	14.32	chr7:139538952-141594453	<i>cis</i>	S
<i>Krt4</i>	chr7:140634224:-	74	25	49	84	56	27	chr7:141354287	12.02	chr7:139538952-143002779	<i>cis</i>	S
<i>Krt4</i>	chr7:140634256:-	81	27	54	84	53	31	chr7:141354287	16.44	chr7:139538952-141594453	<i>cis</i>	S
<i>Krt4</i>	chr7:140634295:-	93	81	12	99	92	6	chr7:141354287	7.12	chr7:134894183-143002779	<i>cis</i>	S
<i>Krt4</i>	chr7:140634316:-	88	59	29	90	77	13	chr7:141354287	13.50	chr7:139538952-141594453	<i>cis</i>	S
<i>Krt4</i>	chr7:140634324:-	87	61	26	84	73	11	chr7:141354287	11.97	chr7:139538952-143002779	<i>cis</i>	S
<b>Krt4 average</b>	<b>chr7:140634112-140634395:-</b>				<b>89</b>	<b>68</b>	<b>21</b>	<b>chr7:141354287</b>	<b>14.62</b>	<b>chr7:139538952-141594453</b>	<b><i>cis</i></b>	<b>S</b>
<i>Ccdc96</i>	chr14:79858821:-	66	7	59	68	27	41	chr14:78866840, chr14:80263250, chr14:83340812	12.12	chr14:77232950-84045063	<i>cis</i>	S
<i>Ccdc96</i>	chr14:79858801:-	73	7	66	80	29	51	chr14:78866840, chr14:80263250, chr14:83340812	14.47	chr14:77232950-84045063	<i>cis</i>	S
<i>Ccdc96</i>	chr14:79858798:-	71	8	63	78	31	47	chr14:78866840, chr14:80263250, chr14:83340812	13.33	chr14:77232950-84045063	<i>cis</i>	S
<i>Ccdc96</i>	chr14:79858790:-	76	6	70	83	29	54	chr14:78866840, chr14:80263250, chr14:83340812	14.59	chr14:77232950-84045063	<i>cis</i>	S
<i>Ccdc96</i>	chr14:79858766:-	65	5	60	81	30	51	chr14:78866840, chr14:80263250, chr14:83340812	14.49	chr14:77232950-84045063	<i>cis</i>	S
<b>Ccdc96 average</b>	<b>chr14:79858556-79858886:-</b>				<b>78</b>	<b>29</b>	<b>49</b>	<b>chr14:78866840, chr14:80263250, chr14:83340812</b>	<b>14.21</b>	<b>chr14:77232950-84045063</b>	<b><i>cis</i></b>	<b>S</b>
<i>Ddhd1</i>	chr15:21569719:-	58	80	-22	79	87	-8	chr15:17009597	3.08	n/a	no signif linkage	S
<i>Ddhd1</i>	chr15:21569766:-	26	59	-33	47	74	-28	chr15:21493194	10.84	chr15:21046469-22822009	<i>cis</i>	S
<i>Ddhd1</i>	chr15:21569816:-	48	66	-18	53	63	-10	chr15:21493194	3.79	n/a	no signif linkage	S
<i>Ddhd1</i>	chr15:21569826:-	52	74	-22	53	68	-15	chr15:21493194	6.14	chr15:21046469-22822009	<i>cis</i>	S
<i>Ddhd1</i>	chr15:21569898:-	61	74	-13	68	74	-7	chr7:117555752	1.82	n/a	no signif linkage	S
<b>Ddhd1 average</b>	<b>chr15:21569685-21570002:-</b>				<b>50</b>	<b>71</b>	<b>-21</b>	<b>chr15:21493194</b>	<b>10.37</b>	<b>chr15:21046469-22822009</b>	<b><i>cis</i></b>	<b>S</b>
<i>Cbln1</i>	chr19:20944468:+	13	57	-44	20	63	-43	chr19:21144074	8.74	chr19:15280687-29813557	<i>cis</i>	S
<i>Cbln1</i>	chr19:20944480:+	17	33	-16	23	66	-43	chr19:16528440, chr19:21481304	9.93	chr19:15280687-26511523	<i>cis</i>	S

<i>Cbln1</i>	chr19:20944486:+	13	80	-67	29	72	-43	chr19:21144074	8.52	chr19:15280687-29813557	<i>cis</i>	S
<i>Cbln1</i>	chr19:20944494:+	26	37	-11	24	67	-44	chr19:21144074	10.29	chr19:15280687-26511523	<i>cis</i>	S
<i>Cbln1</i>	chr19:20944514:+	10	37	-27	18	64	-46	chr19:21144074	10.94	chr19:15280687-26511523	<i>cis</i>	S
<i>Cbln1</i>	chr19:20944536:+	17	64	-47	24	67	-43	chr19:21144074	10.22	chr19:15280687-26511523	<i>cis</i>	S
<i>Cbln1</i>	chr19:20944576:+	9	20	-11	3	27	-24	chr19:21144074	16.22	chr19:15280687-26511523	<i>cis</i>	S
<i>Cbln1</i>	chr19:20944624:+	0	34	-34	15	58	-43	chr19:21144074	11.15	chr19:15280687-26511523	<i>cis</i>	S
<b><i>Cbln1</i> average</b>	<b>chr19:20944355-20944663:+</b>				<b>19</b>	<b>61</b>	<b>-41</b>	<b>chr19:21144074</b>	<b>11.50</b>	<b>chr19:15280687-26511523</b>	<b><i>cis</i></b>	<b>S</b>
<i>Grm4</i>	chr20:5655482:-	62	39	23	89	73	16	chr20:2931904	14.20	chr20:0-6999342	<i>cis</i>	S
<i>Grm4</i>	chr20:5655411:-	43	19	24	73	49	24	chr20:2931904	7.37	chr20:0-6999342	<i>cis</i>	S
<i>Grm4</i>	chr20:5655375:-	32	12	20	77	40	37	chr20:2931904	12.75	chr20:0-6999342	<i>cis</i>	S
<b><i>Grm4</i> average</b>	<b>chr20:5655243-5655528:-</b>				<b>80</b>	<b>54</b>	<b>26</b>	<b>chr20:2931904</b>	<b>13.57</b>	<b>chr20:0-6999342</b>	<b><i>cis</i></b>	<b>S</b>
<i>Rtdr1</i>	chr20:14187239:+	9	9	9	11	18	-8	chr5:126790264	2.38	n/a	no signif linkage	I
<i>Rtdr1</i>	chr20:14187266:+	8	44	-36	5	7	-2	chr17:70462220	2.09	n/a	no signif linkage	I
<i>Rtdr1</i>	chr20:14187282:+	8	41	-33	9	9	0	chr6:52768463	2.58	n/a	no signif linkage	I
<i>Rtdr1</i>	chr20:14187284:+	9	42	-33	8	11	-3	chr9:53822255	2.34	n/a	no signif linkage	I
<i>Rtdr1</i>	chr20:14187310:+	11	21	-10	8	7	1	chr6:52768463	2.93	n/a	no signif linkage	I
<i>Rtdr1</i>	chr20:14187345:+	7	17	-10	11	13	-2	chr19:47704959	1.90	n/a	no signif linkage	I
<i>Rtdr1</i>	chr20:14187371:+	17	24	-7	17	18	-2	chr9:10303064	3.04	n/a	no signif linkage	I
<b><i>Rtdr1</i> average</b>	<b>chr20:14187231-14187390:+</b>				<b>10</b>	<b>12</b>	<b>-2</b>	<b>chr6:50926188</b>	<b>1.87</b>	<b>n/a</b>	<b>no signif linkage</b>	<b>I</b>

a) Name of the gene closest to the measured CpGs,

b) WGBS = whole genome bisulfite sequencing, methylation percentage in BN and SHR strains, or difference between the strains (BN-SHR),

c) BN, SHR and difference indicate percentages and difference in BN and SHR methylation (BN-SHR) determined by Illumina or Sanger sequencing,

d) multiple peak of linkage coordinates are listed when they all have the same LOD score,

e) LOD score indicates the LOD score at the peak of linkage, for individual CpG dinucleotides and for average CpG methylation across the entire amplicon,

f) linkage data was generated by conventional PCR and Sanger sequencing (S) or by amplification using the Fluidigm platform followed by Illumina sequencing (I),

g) nd = no data in the WGBS data set of 10,614,445 sampled CpG dinucleotides,

h) n/a = not applicable,

i) no significant linkage, defined as  $P > 0.05$  after a minimum of 1000 permutations of the linkage data

**Bold type indicates the average methylation data for each amplicon**