Supporting Information

Monnier et al. 10.1073/pnas.1310201110

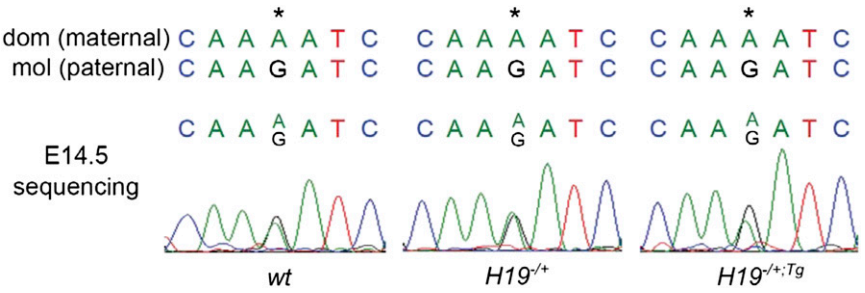

Fig. S1. *Dcn* is not imprinted in E14.5 limb muscles. Allele-specific expression analysis of *Dcn* detected by RT-PCR and sequencing in WT, $H19^{-/+}$, and $H19^{-/+;Tg}$ E14.5 limb muscle samples. Maternal (*dom*, *domesticus*) and paternal (*mol*, *molossinus*) sequences are indicated. Stars indicate polymorphisms between the *domesticus* and *molossinus* alleles.

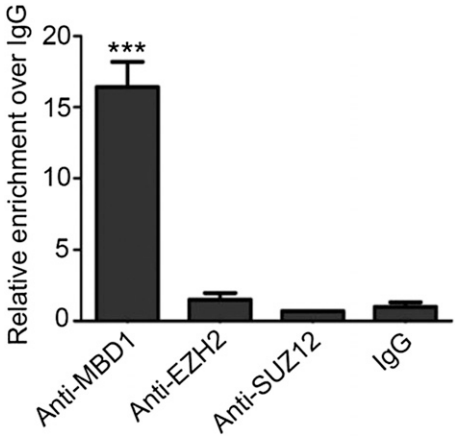

Fig. S2. RNA immunoprecipitation (RIP) analysis. RNA immunoprecipitation with an antibody to MBD1, EZH2, and SUZ12 indicate binding to *H19* in WT mouse embryo fibroblasts. The enrichment of RNA over a random IgG, measured by RT–qualitative PCR (qPCR), is shown.

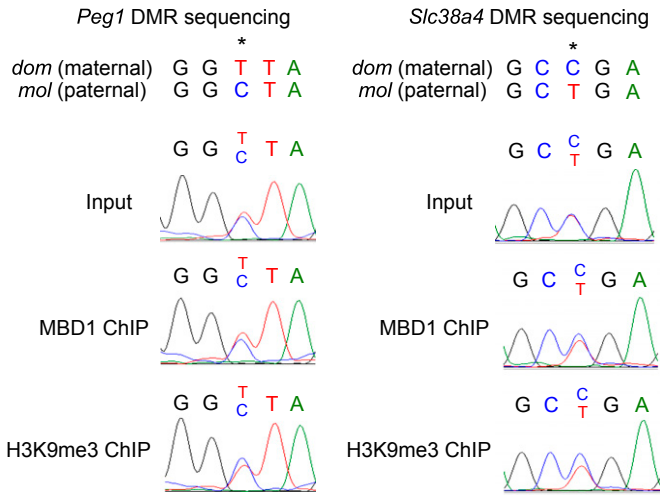

Fig. S3. Sequencing of *Peg1* and *Slc38a4* differentially methylated regions (DMRs). Input and chromatin immunoprecipitated with MBD1 or H3K9me3 antibody in WT MEFs was sequenced for both the *Peg1* DMR (using primers forward 5′-CGGGTCAATACCCCTGGAG-3′ and reverse 5′-CCGACTTTTAAAGCCCACTG-3′) (left side) and the *Slc38a4* DMR (using primers forward 5′-GCATGCTCCCGTTGTTAAAT-3′ and reverse 5′-ACCATGTGGGAAGCAGTCTC-3′) (right side). Maternal (*dom*, *domesticus*) and paternal (*mol*, *molossinus*) sequences are indicated. Stars show polymorphisms between the two alleles.

Table S1. Cp values of Imprinted Gene Network

Genes	WT	$H19^{-/+}$	$H19^{-/+}$;Tg
H19	24.43	>35	19.73
Igf2	21.39	19.47	23.06
Slc38a4	29.10	25.80	28.32
Dcn	22.00	21.55	22.79
Dlk1	24.31	22.78	25.04
Peg1	28.44	23.97	28.83
Gtl2	17.91	17.35	19.11
Cdkn1c	25.27	22.93	25.40
Igf2r	18.85	19.35	20.29
Gnas	22.6	23.27	23.22
Sdha	19.67	20.08	20.97
Tfrc	21.91	23.91	23.76
ActB	12.09	12.93	13.72

Table S2. Primer sequences

	Forward	Reverse
ChIP and RIP		
Igf2 DMR	TGGATTTTGCAATTGGTGTC	TGGCCAAGTCCTTTTTCTTT
Cdkn1c DMR	AGGGAGTCTAAAGGGCTGGT	TTGAACACGGTCTGTGGAAA
Slc38a4 DMR	GGGAAACTGACCGTGGAGTA	GCCTTTTCAGCTGTCTGTCC
Peg1 DMR	AGGATGGGCGGGTTAGAG	AGAAGAAGCACCGGGATGT
H19 RNA	GGAGACTAGGCCAGGTCTC	GCCCATGGTGTTCAAGAAGGC
Igf2 mRNA	GGTGCTTCTCATCTCTTTGG	CGACGGTTGGCACGGCTTGA
RT-qPCR		
H19	GGAGACTAGGCCAGGTCTC	GCCCATGGTGTTCAAGAAGGC
Igf2	GGTGCTTCTCATCTCTTTGG	CGACGGTTGGCACGGCTTGA
Cdkn1c	AACTTCCAGCAGGATGTGCC	CATCCACTGCAGACGACCAG
Slc38a4	ACTGTGGCAATACTCTCGCTCTA	ATCCAAATGCTTTCTCGCCCAAT
Dcn	CATCTTCGAGTGGTGCAGTGTT	GCAGGTCTAGCAAGGTTGTGTC
Gtl2	CGAGGACTTCACGCACAACAC	CCACGCAGGATTCCAGATGATG
Dlk1	ACTTGCGTGGACCTGGAGAA	CTGTTGGTTGCGGCTACGAT
Mbd1	AACTGAGCTCTCCCTTAAAGG	TGACTGCTGTCCACTCCTCTG
Peg1	CAACAATGACGGCAACCTGGT	TCTGAATTTCTTCCTTTGATTAAT
Igf2r	GCACAGAATCCAGACTAGCATT	CCTCCTTATCAGCTTTAAATAT
Gnas	AGCGCGAGGCCAACAAAA	GTGCGTGGCCCGGTAGA
Sdha	TTCCGTGTGGGGAGTGTATTGC	AGGTCTGTGTTCCAAACCATTCC
Tfrc	GCAGATGAAGAAGAAAATGCCG	TTACAATAGCCCAGGTAGCCACTC
Actb	TATTGGCAACGAGCGGTTCC	GGCATAGAGGTCTTTACGGATGTC
Igf2 intron 1	CCACTTTGTGTGCACTCTGC	TCTACACTCGCTTCCCCAAG
Peg1 intron 1	GACGTGGGTCGTGTAGGTTT	CAAATGGGGCTGCAATTACT
Slc38a4 intron 1	GGTCTCGGAACTGTGTAGGG	CCTGCCCTGGTTTACTTCAC
Allele-specific expression		
Igf2	GGAGATGTCCAGCAACCATC	CTGAAGCAATGACATGCCAC
Peg1	GATTCGCAACAATGACGGC	ATCCAGAATCGACACTGTGG
Dcn	GATTTTCCACCCGACACAAC	TCTCCAGGAACTTCGTGTCC
Slc38a4	ACACGGGATGGAGTTCAGAC	ATCGGTGCTGTGTGAATGAA
Dlk1	CGTCTTTCTCAACAAGTGCG	AGATCTCCTCATCACCAGCC
Gtl2	TTGCACATTTCCTGTGGGAC	AAGCACCATGAGCCACTAGG
Cdkn1c	GACGATGGAAGAACTCTGGG	AGCGTACTCCTTGCACATGG