

	Histone differential enrichment profile	Gene(s)	References
Imprinting repression	H3K27me3 at inactive allele	<i>Ascl2, Cd81, Cdkn1c, Grb10 major-type, H19, Igf2, Kcnq1, Kcnq1ot1, Osbp15, Peg10, Phlda2, Snrpn, Tssc4</i>	[1-11]
	H3K9me3 at inactive allele	<i>Air, Ascl2, Cd81, Cdkn1c, Gnas Exon1A, Gnasxl, Grb10 brain-type, H19, Igf2r, Kcnq1ot1, Nesp, Nespa, Peg10, Snrpn, Zrsr1</i>	[6, 9-20]
	H4K20me3 at inactive allele	<i>Air, Grb10 brain-type, Kcnq1ot1, Peg10, Snrpn</i>	[6, 11, 15, 17-20]
Developmental repression	H3K27me3 without H3K4me3 at developmentally repressed allele	<i>Grb10 major-type, Slc22a2, Slc22a3</i>	[10, 15]
	H3K4me2/3 at developmentally repressed allele	<i>Air, Grb10 brain-type, NDN, Snrpn, Zrsr1</i>	[10, 14, 21, 22]
	H3K4me2 and H3K27me3 at developmentally repressed allele	<i>Grb10 brain-type</i>	[19, 20]

- Lewis A, Mitsuya K, Umlauf D, Smith P, Dean W, Walter J, Higgins M, Feil R, Reik W: **Imprinting on distal chromosome 7 in the placenta involves repressive histone methylation independent of DNA methylation.** *Nat Genet* 2004, **36** (12): 1291-1295.
- Lewis A, Green K, Dawson C, Redrup L, Huynh KD, Lee JT, Hemberger M, Reik W: **Epigenetic dynamics of the Kcnq1 imprinted domain in the early embryo.** *Development* 2006, **133** (21): 4203-4210.
- Han L, Lee DH, Szabo PE: **CTCF is the master organizer of domain-wide allele-specific chromatin at the H19/Igf2 imprinted region.** *Mol Cell Biol* 2008, **28** (3): 1124-1135.
- Umlauf D, Goto Y, Cao R, Cerqueira F, Wagschal A, Zhang Y, Feil R: **Imprinting along the Kcnq1 domain on mouse chromosome 7 involves repressive histone methylation and recruitment of Polycomb group complexes.** *Nat Genet* 2004, **36** (12): 1296-1300.
- Monk D, Arnaud P, Apostolidou S, Hills FA, Kelsey G, Stanier P, Feil R, Moore GE: **Limited evolutionary conservation of imprinting in the human placenta.** *Proc Natl Acad Sci U S A* 2006, **103** (17): 6623-6628.
- Monk D, Wagschal A, Arnaud P, Muller PS, Parker-Katiraei L, Bourc'his D, Scherer SW, Feil R, Stanier P, Moore GE: **Comparative analysis of human chromosome 7q21 and mouse proximal chromosome 6 reveals a placental-specific imprinted gene, TFPI2/Tfpi2, which requires EHMT2 and EED for allelic-silencing.** *Genome Res* 2008, **18** (8): 1270-1281.
- Terranova R, Yokobayashi S, Stadler MB, Otte AP, van Lohuizen M, Orkin SH, Peters AH: **Polycomb group proteins Ezh2 and Rnf2 direct genomic contraction and imprinted repression in early mouse embryos.** *Dev Cell* 2008, **15** (5): 668-679.
- Kim JM, Ogura A: **Changes in allele-specific association of histone modifications at the imprinting control regions during mouse preimplantation development.** *Genesis* 2009, **47** (9): 611-616.
- Verona RI, Thorvaldsen JL, Reese KJ, Bartolomei MS: **The transcriptional status but not the imprinting control region determines allele-specific histone modifications at the imprinted H19 locus.** *Mol Cell Biol* 2008, **28** (1): 71-82.

10. Yamasaki-Ishizaki Y, Kayashima T, Mapendano CK, Soejima H, Ohta T, Masuzaki H, Kinoshita A, Urano T, Yoshiura K, Matsumoto N, Ishimaru T, Mukai T, Niikawa N, Kishino T: **Role of DNA methylation and histone H3 lysine 27 methylation in tissue-specific imprinting of mouse Grb10.** *Mol Cell Biol* 2007, **27** (2): 732-742.
11. Delaval K, Govin J, Cerqueira F, Rousseaux S, Khochbin S, Feil R: **Differential histone modifications mark mouse imprinting control regions during spermatogenesis.** *Embo J* 2007, **26** (3): 720-729.
12. Vu TH, Li T, Hoffman AR: **Promoter-restricted histone code, not the differentially methylated DNA regions or antisense transcripts, marks the imprinting status of IGF2R in human and mouse.** *Hum Mol Genet* 2004, **13** (19): 2233-2245.
13. Li T, Vu TH, Ulaner GA, Yang Y, Hu JF, Hoffman AR: **Activating and silencing histone modifications form independent allelic switch regions in the imprinted Gnas gene.** *Hum Mol Genet* 2004, **13** (7): 741-750.
14. Fournier C, Goto Y, Ballestar E, Delaval K, Hever AM, Esteller M, Feil R: **Allele-specific histone lysine methylation marks regulatory regions at imprinted mouse genes.** *Embo J* 2002, **21** (23): 6560-6570.
15. Regha K, Sloane MA, Huang R, Pauler FM, Warczok KE, Melikant B, Radolf M, Martens JH, Schotta G, Jenuwein T, Barlow DP: **Active and repressive chromatin are interspersed without spreading in an imprinted gene cluster in the mammalian genome.** *Mol Cell* 2007, **27** (3): 353-366.
16. Wagschal A, Sutherland HG, Woodfine K, Henckel A, Chebli K, Schulz R, Oakey RJ, Bickmore WA, Feil R: **G9a histone methyltransferase contributes to imprinting in the mouse placenta.** *Mol Cell Biol* 2008, **28** (3): 1104-1113.
17. Wu MY, Tsai TF, Beaudet AL: **Deficiency of Rbbp1/Arid4a and Rbbp111/Arid4b alters epigenetic modifications and suppresses an imprinting defect in the PWS/AS domain.** *Genes Dev* 2006, **20** (20): 2859-2870.
18. Pannetier M, Julien E, Schotta G, Tardat M, Sardet C, Jenuwein T, Feil R: **PR-SET7 and SUV4-20H regulate H4 lysine-20 methylation at imprinting control regions in the mouse.** *EMBO Rep* 2008, **9** (10): 998-1005.
19. Sanz LA, Chamberlain S, Sabourin JC, Henckel A, Magnuson T, Hugnot JP, Feil R, Arnaud P: **A mono-allelic bivalent chromatin domain controls tissue-specific imprinting at Grb10.** *EMBO J* 2008, **27** (19): 2523-2532.
20. Monk D, Arnaud P, Frost J, Hills FA, Stanier P, Feil R, Moore GE: **Reciprocal imprinting of human GRB10 in placental trophoblast and brain: evolutionary conservation of reversed allelic expression.** *Hum. Mol. Genet.* 2009, **18** (16): 3066-3074.
21. Yamasaki Y, Kayashima T, Soejima H, Kinoshita A, Yoshiura K, Matsumoto N, Ohta T, Urano T, Masuzaki H, Ishimaru T, Mukai T, Niikawa N, Kishino T: **Neuron-specific relaxation of Igf2r imprinting is associated with neuron-specific histone modifications and lack of its antisense transcript Air.** *Hum Mol Genet* 2005, **14** (17): 2511-2520.
22. Lau JC, Hanel ML, Wevrick R: **Tissue-specific and imprinted epigenetic modifications of the human NDN gene.** *Nucleic Acids Res* 2004, **32** (11): 3376-3382.