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Abstract

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Conservation of imprinting of Neuronatin (Nnat) in rabbits.

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Abstract

Although the expression and epigenetic status of imprinted genes have been extensively studied in a number of species, less is known about the genomic imprinting in rabbits. **Neuronatin** (Nnat) plays significant roles in the brain development and metabolic regulation and has been identified to be imprinted and paternally expressed in humans, mice and pigs; however, it has not yet been investigated in rabbits. In this study, we confirmed the expression of two isoforms of the rabbit Nnat (Nnat-a and Nnat-β) identified in Genbank and Ensembl by quantitative real-time PCR. In addition, we also determined the methylation profile of the CpG island in the promoter region of the rabbit Nnat using bisulfite sequencing PCR and combined bisulfite restriction analysis. Here, we provide the first evidence that Nnat has two transcripts in rabbit. Additionally, the CpG island located in the promoter region shows oocyte-specific methylation and may be the differentially methylated region of Nnat in rabbits.

KEYWORDS: DMR; Imprinted gene; Nnat; Paternally expressed; Promoter; Rabbit

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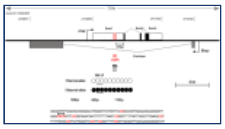

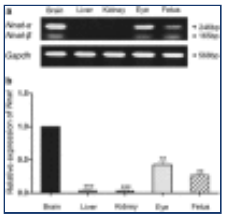

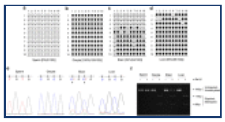

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