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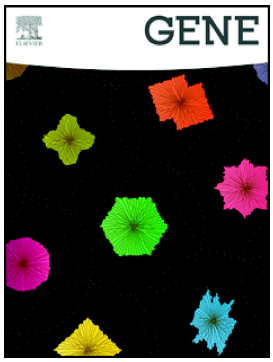

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TRIM28 regulates *Igf2-H19* and *Dlk1-Gtl2* imprinting by distinct mechanisms during sheep fibroblast proliferation

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Abstract

DNA methylation is an essential epigenetic modification involved in regulating gene expression and maintaining epigenetic information across generations. However, how these marks are recognized and interpreted to activate or repress imprinted genes is not fully understood. Preliminary evidence describes the transcriptional repressor TRIM28 as a key regulator of imprinted gene expression during and after early genome-wide reprogramming. Aberrant expression of imprinted genes maybe one possible cause of incomplete epigenetic reprogramming and low efficiency in somatic cell nuclear transfer. Here, we perform a series of experiments to determine whether knockdown of *Trim28* alters imprinted gene expression and DMR methylation in sheep embryonic fibroblast (SEF) cells. siRNA-mediated *Trim28* silencing in SEF cells resulted in significantly decreased expression of *Gtl2* to 30% and