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RNA INTERFERENCE TARGETING GEMININ GENE AFFECTS THE PROLIFERATION OF VASCULAR SMOOTH MUSCLE CELLS IN RATSZhang Yuanyuan *Southwest Hospital*

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The proliferation of vascular smooth muscle cells (VSMCs) plays an important role in the pathogenesis of vascular diseases. The Geminin is one kind of Nucleoprotein, which plays a critical role during the initiation of DNA replication. There are two phenotypes of VSMCs. However, VSMCs can switch between an alternative proliferative phenotype

and a contractile, whereas, the functions and Mechanism of Geminin in VSMCs has not been well defined yet. So we use siRNA approach to analyse the effects of geminin gene on the proliferation and apoptosis of rat VSMCs. We transfected rat VSMCs with siRNA by Slow virus package; geminin protein expression and mRNA level were respectively determined by Western blotting and RT-PCR. siRNA mediated geminin suppression affected the Landmark gene of the two phenotypes of VSMCs such as osteopontin and α -action. Furthermore, cells were synchronised to remain in the G1/S phase. There were interactions between cdt1 and geminin, and DNA synthesis was analysed by ³H thymidine (³H-TdR) and EDU incorporation. Down-regulation of geminin mRNA and protein expression was observed in rat VSMCs at 24 h after transfection. A significant increase in the proliferation index was observed. Thus, geminin gene may be an essential regulator of rat VSMCs proliferation and transformation of phenotype