

Elucidation of expression and regulation mechanism of cell adhesion factor Gicerin/CD146 in cardiac hypertrophy model

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Gicerin/CD146 is a cell adhesion molecule which belongs to the immunoglobulin (Ig) superfamily. We have reported the existence of Gicerin/CD146 in the heart, lung and smooth muscles of blood vessels. It is expected that Gicerin/CD146 expressed in these tissues may have a function different from those in the nervous system or tumors. WE have reported that Gicerin/CD146 is involved in the hypertrophy of vessel smooth muscles. We speculate that in the heart, Gicerin/CD146 may also have some role in the hypertrophy of the cardiac muscle cells. In this study, we make a cardiac hypertrophy model rat by constricting the rat aorta (TAC, transverse aortic constriction) and examined the effect on the expression of Gicerin/CD146. We confirmed the status of hypertrophy by an expression of the β -MHC gene (β myosin heavy chain), which has been reported to be elevated during cardiac hypertrophy. Next, stretch stimulation was applied to myocardial cell line H9c2 cells. We confirmed the gene expression level of Gicerin/CD146 was influenced by TAC treatment. In cultured myocardial cells, the expression level of Gicerin/CD146 was also influenced by the stretch stimulation. Based on the above, it was suggested that the expression of Gicerin/CD146 is involved in cardiac hypertrophy as well as the stretch stimulation.