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THE ANTI-HYPOXIA EFFECT OF GINSENOSIDES-RBL ON HYPOXIA CARDIOMYOCYTES MEDIATED BY THE APELIN-APJ SYSTEM EX VIVO

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Objective On the basis of hypoxia induced by $CoCl_2$, to elucidate whether Ginsenosides-Rbl (Gs-Rb1) inhibited the apoptosis of hypoxia cardiomyocytes by up-regulating Apelin-APJ system and whether the system was adjusted by Hif-1α.

Materials and Methods Neonatal rat cardiomyocytes were randomly divided into control group, simple $CoCl_2$ group, simple Gs-Rb1 group, $CoCl_2$ and Gs-Rb1 hypoxia group, $CoCl_2$ and YC-1 group, $CoCl_2$ and YC-1 and Gs-Rbl group; The concentration of $CoCl_2$, Gs-Rb1 and YC-1 is 500 uM, 500 uM and 5 umol/l, respectively; Apoptosis ratio (AR) was analysed by flow cytometer (FCM, Annexin V FITC/PI), and Hif-1α, Apelin and APJ were assayed by immunocytochemistry, Rt-PCR and Western blot.

Results (1) Gs-Rb1 significantly down-graded AR of hypoxia cardiomyocytes, which was significantly inhibited by YC-1; (2) Gs-Rb1 significantly increased the expression of hypoxia-induced factor 1α (Hif-1α), which was completely suppressed by YC-1; 3. Hypoxia significantly up-graded the expression of both mRNA and protein of Apelin, which were further reinforced by Gs-Rb1 and significantly inhibited by YC-1; 4. Gs-Rb1 further strengthen the expression of both mRNA and protein of APJ once hypoxia, which was significantly inhibited by YC-1; 5. There was a significant positive correlation between the AR and Apelin (including mRNA and protein), between the AR and APJ (including mRNA and protein).

Conclusion Apelin-APJ system, which was adjusted by Hif-1α, plays an important role in Gs-Rb1 anti-hypoxia apoptosis of cardiomyocytes.