Molecular mechanism by which tea extracts inhibits myocardial hypertrophy induced by renal hypertension in rat

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Cardiac hypertrophy is risk factor of leading to dilated cardiomyopathy, congestive heart failure and sudden death. In this study, we observed the preventive effects of tea consumption on cardiac hypertrophy in rat induced by two kidney one clip and elucidated the inhibitory mechanisms.

The results showed that 2% green tea, 0.1% green tea polyphenols, and 0.05% EGCG as a sole drinking water for 8 weeks significantly decreased the ratio LVM/BM and HW/BW and the expression of ANP protein and α-actin protein, increased the activities of GSH-Px, SOD and CAT, and decreased the level of MDA and ROS in heart. Histopathological analysis also showed that the pathological changes of cardiac hypertrophy in tea-treated groups were relatively slighter, and the numbers of the struck animals were smaller. It is concluded that green tea, tea polyphenols and EGCG could attenuate the development of left ventricular hypertrophy induced by renal hypertension in rats. The mechanisms of the actions may be related to the increase of antioxidant enzymes activities and the decrease of lipid peroxidation.