Cite this as: Hui ZHOU, Yan CHEN, Shu-wei HUANG, Peng-fei HU, Li-jiang TANG, 2018. Regulation of autophagy by tea polyphenols in diabetic cardiomyopathy.*Journal of Zhejiang University-Science B (Biomedicine & Biotechnology)*, 19(5):333-341. https://doi.org/10.1631/jzus.B1700415

Regulation of autophagy by tea polyphenols in diabetic cardiomyopathy

Key words: Tea polyphenol, Autophagy, Diabetic cardiomyopathy, Obesity, Lipid metabolism disorder

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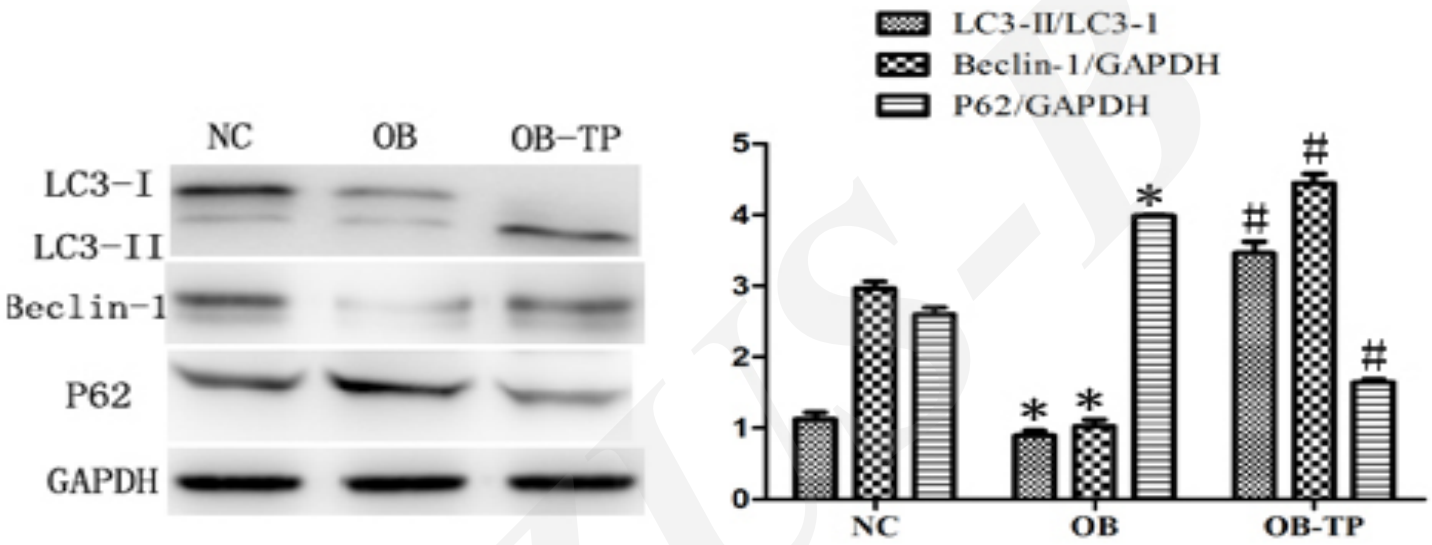
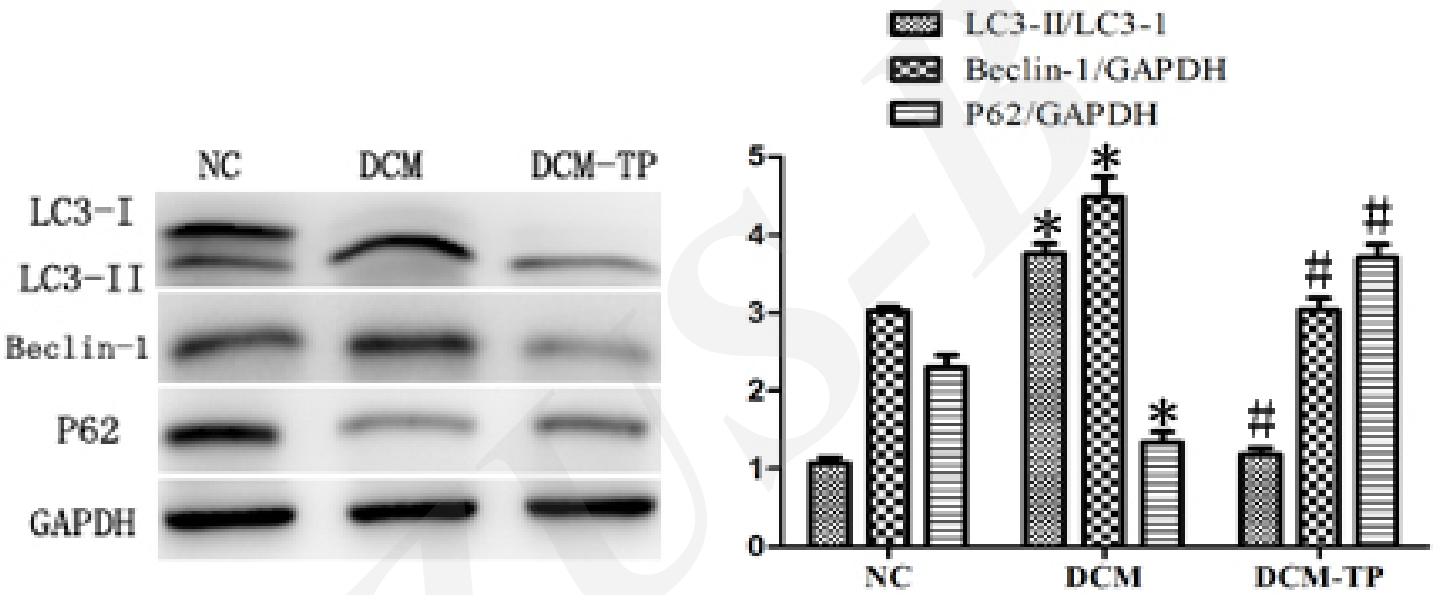
Research Summary



Tea polyphenols induced autophagy in rats in a high-fat state

Western blotting showed that compared to the NC group, the expression of autophagy-related proteins, LC3-II to LC3-I and beclin-1, was notably decreased, whereas the expression of SQSTM1/p62 was increased in the OB group. Compared to the OB group, we found that the level of beclin-1 and the ratio of LC3-II to LC3-I in the OB-TP group were increased, and the level of SQSTM1/p62 was decreased. These results show that tea polyphenols can induce autophagy in rats in a high-fat state

Research Summary



Tea polyphenols inhibit autophagy in diabetic cardiomyopathy

Western blotting showed that, compared to the NC group, the expression of beclin-1 and the ratio of LC3-II to LC3-I were notably increased, whereas the expression of SQSTM1/p62 was decreased in the DCM group. This demonstrated that autophagy could be induced in diabetic cardiomyopathy. Compared to the DCM group, we found that the level of beclin-1 and the ratio of LC3-II to LC3-I in the DCM-TP treatment group decreased, and the level of SQSTM1/p62 was increased accordingly. These results show that tea polyphenols can inhibit the level of high blood glucose-induced autophagy

Research Summary

Tea polyphenols have an effect on diabetic cardiomyopathy in rat cardiac function and may be able to adjust the level of cardiomyocyte autophagy, thereby improving glucose and lipid metabolic disorders under diabetes.



Innovation points

1）Autophagy can be inhibited under a high-fat state. However, tea polyphenols can induce autophagy in rats in a high-fat state.

2）In contrast, autophagy could be induced in diabetic cardiomyopathy, but inhibit the level of high blood glucose-induced autophagy

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