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# *Lycium barbarum* polysaccharides ameliorate canine acute liver injury by reducing oxidative stress, protecting mitochondrial function, and regulating metabolic pathways

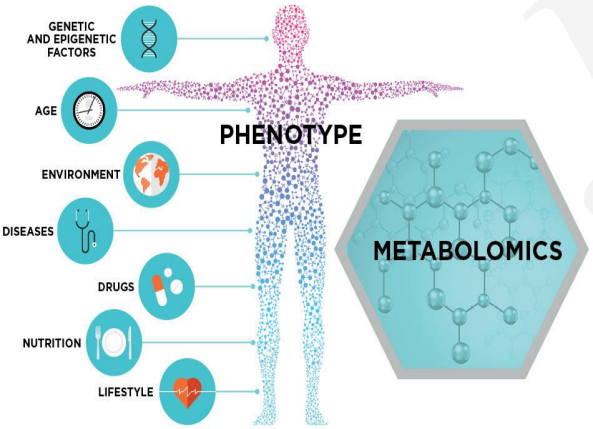
**Key words: Acute liver injury, Oxidative stress, Mitochondrial dysfunction, Metabolomics, *Lycium barbarum* polysaccharides**

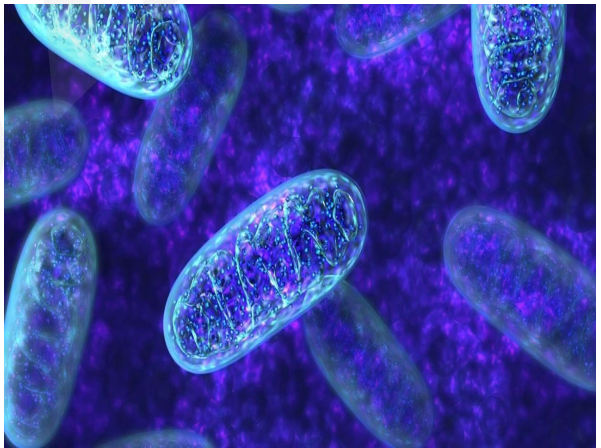
# *Research Summary*

**This study mainly found a new "liver protective agent"- *Lycium barbarum* polysaccharides, which can treat the liver injury in the following ways to protect the liver:**



- **Reduce oxidative stress**
- **Improve mitochondrial dysfunction**
- **Regulate metabolic pathways of the body**



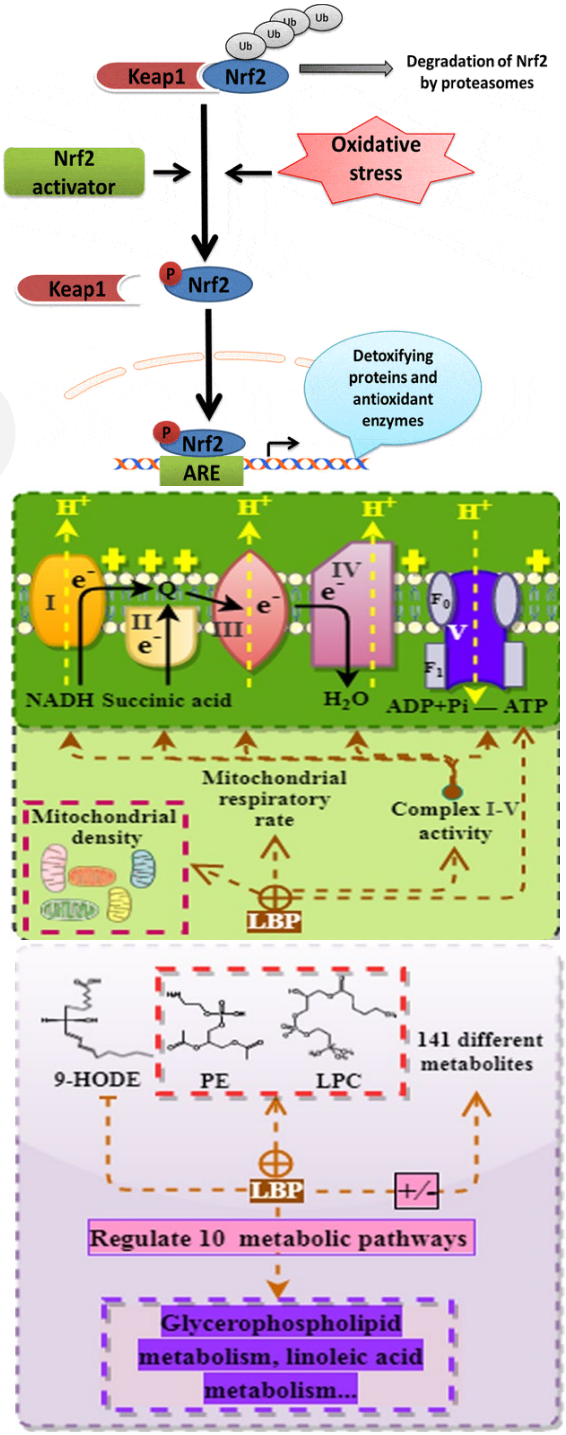


# Innovation points

- The hepatoprotective effects of LBPs were described at various levels, including histopathological changes and molecular biology

- Three factors—oxidative stress, mitochondrial function, and metabolic pathway—were used to summarize the mechanism of action of LBPs in treating acute liver injury.

- Three biomarkers that can be used to evaluate acute liver injury were screened by serum metabolomics.



# *Innovation points*

**A series of comprehensive figures and table were generated to summarize the latest knowledge about *Lycium barbarum* polysaccharides.**

**Figure 1 | Protective effect of LBPs on acute liver injury induced by CCl4.**

**Figure 2 | Effect of LBPs on p62-Keap1-Nrf2 pathway.**

**Figure 3 | Effects of LBPs on downstream antioxidant genes and proteins of Nrf2.**

**Figure 4 | Effects of LBPs on antioxidant oxidase activity, reductive equivalent and oxidative damage identification indexes.**

**Figure 5 | Effect of LBPs on function of mitochondrial respiration.**

**Figure 6 | The main metabolic pathways and metabolites regulated by LBPs in the treatment of acute liver injury.**

**Table 1 | Compared with the CG, the first 12 metabolites with the most different expression in the MG and TG.**

# Thank you for your viewing !

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