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Heme oxygenase-1/carbon monoxide signaling participates in the accumulation of triterpenoids of *Ganoderma lucidum*

Key words: *Ganoderma lucidum*, Triterpenoid, HO-1/CO signaling, Transcriptome sequencing

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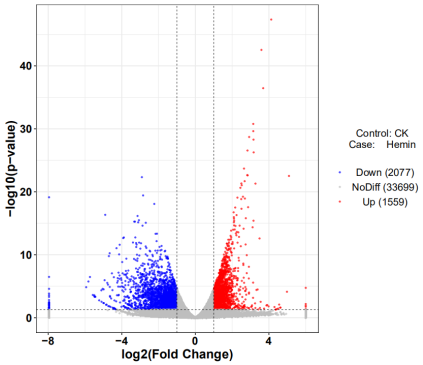
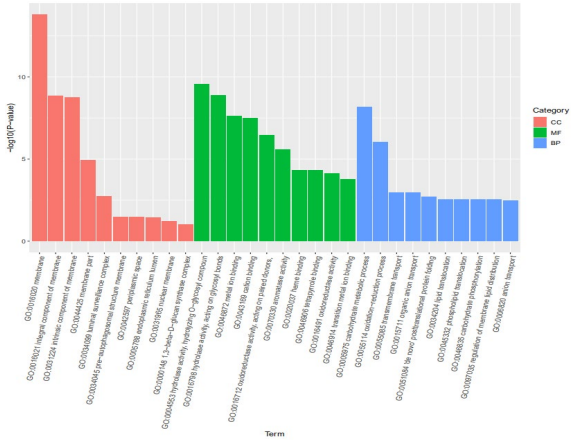
Research Summary

This paper mainly focused on the effects of HO-1/CO signaling on accumulation of triterpenoids of *G. lucidum*, and summarized the key roles they played in the following aspects:

- **Effects of HO-1/CO signaling on GT content and HO-1 activity**
- **Effect of HO-1/CO signaling on gene expression of key enzymes in GT synthesis**
- **Analysis of differentially expressed genes mediated by HO-1/CO signaling via transcriptome sequencing**





Innovation points

- **GT content and HO-1 activity changed in parallel in *G. lucidum* mycelia under different treatments (HO-1 inducer, HO-1inhibitor, CO donor).**
- **HO-1 induced GT accumulation, primarily in association with its catalytic product, CO.**
- **HO-1/CO signaling affected GT synthesis by regulating gene expression of key enzymes (*hmgr, sqs, ls*) in the GT synthesis pathway.**
- **The transcriptome experiments revealed that HO-1/CO signaling also affected the transduction of ROS and Ca^{2+} signalings in *G. lucidum*.**

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