

代谢组和转录组整合分析揭示不同年龄中华鳖 (*Pelodiscus sinensis*) 肌肉代谢特征及基因调控机制

Integrated metabolome and transcriptome revealed the metabolite characteristics and genes regulation mechanism in muscle of different ages Chinese soft-shelled turtle (*Pelodiscus sinensis*)

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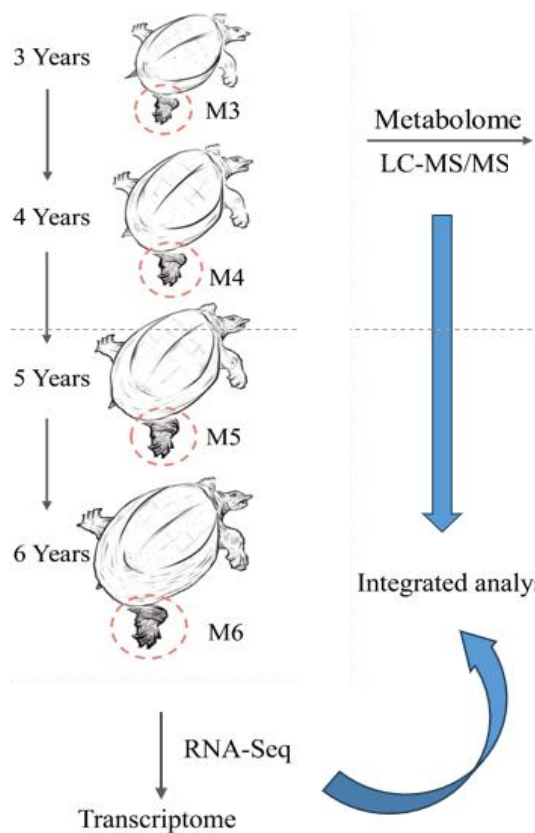


Introduction

- 中华鳖 (*Pelodiscus sinensis*) 作为中国传统的食疗佳品, 肌肉中潜在的生物活性化合物的组成值得关注;
- 消费者对中华鳖老鳖具有明显的消费偏好;
- 不同年龄中华鳖肌肉化合物组成差异尚未被报道。

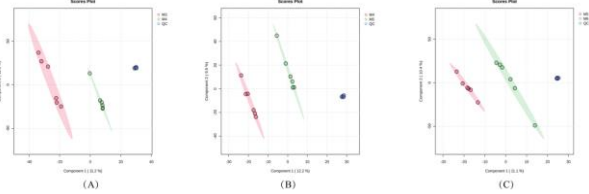
Material and Methods

Pelodiscus sinensis

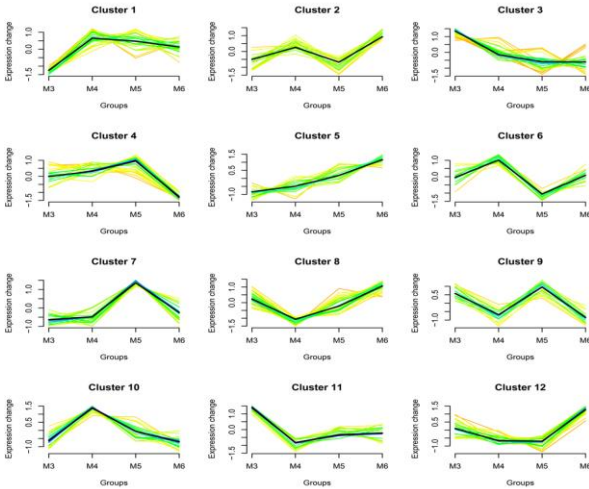


Results

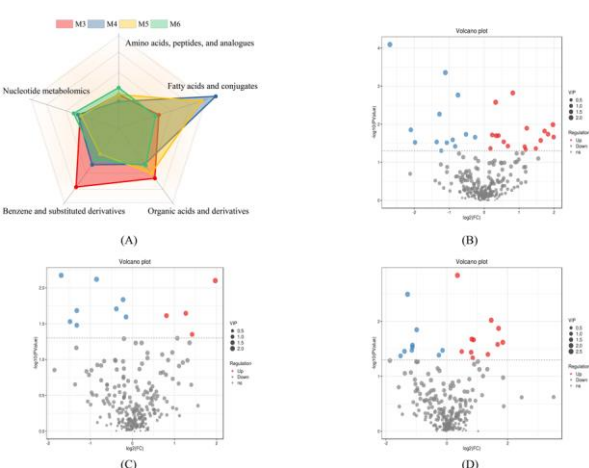
Differential metabolites



PLS-DA

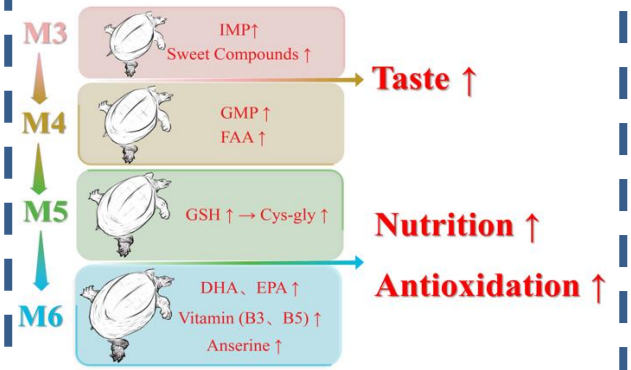
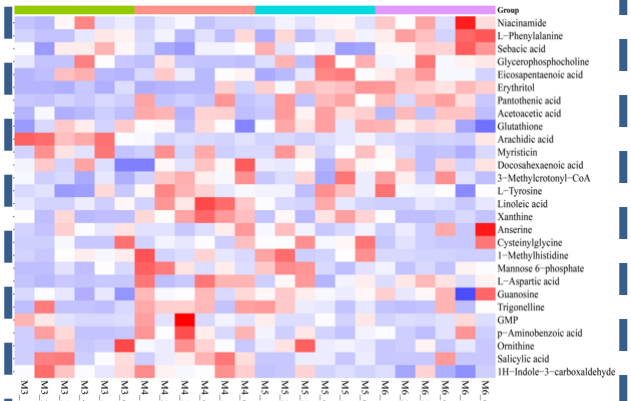


Trend-Cluster



Difference analysis

Key metabolites



Main References

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Conclusion

- 在中华鳖肌肉中鉴定出261种代谢物;
- 谷胱甘肽和鹅肌肽被认为是中华鳖肌肉潜在的活性成分, 分别在M5和M6中含量最多;
- γ -亚麻酸、DHA、EPA、烟酰胺和泛酸在M6中含量最高。这些信息为消费者对老鳖的选择提供依据;
- 呈味核苷酸IMP、GMP在M3中含量最多。与M3相比, M4的胶原合成基因 (*coll1a1*, *coll1a2*和*col3a1*) 被抑制, 游离氨基酸增加;
- 糖原合成基因 (*hk*和*ugp2*) 下调和糖原分解基因 (*pgm2*, *pyg*和*pfk*) 上调导致M5中单糖增加;
- 脂肪酸碳链延伸和去饱和增强 (*hacd1*和*scd1*) 使M6中富含高不饱和脂肪酸。

Integrated analysis

