

鱼肝线粒体代谢热与品种生长及杂交优势关系的微量热研究

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摘要 采用LKB-2277生物活性检测系统测定了六个不同品种鱼的肝线粒体的代谢热功率曲线,目的在于建立微量热法评价鱼类品种优势以及应用微量热法预测杂交优势的方法。实验得到了不同品种鱼肝线粒体代谢的活性恢复期速率数(k)和总产热量(Q)。我们认为活性恢复期速率常数的大小表征物种对环境的适应能力,而总产热量则表征物种的生物活性的大小。同时具有较大活性恢复期速率常数的总产热量 的品种是优势品种,采用活性恢复期速率常数较大的父本和总产热量较大的母本所 获得的后代具有杂交优势的可能性较大。

关键词 [线粒体](#) [杂交](#) [代谢](#) [生物活性](#)

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Microcalorimetry Study of Metabolism of Fish Liver Mitochondria and Its Relation with Growth Performance and Heterosis

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Abstract Metabolic power-time curves of mitochondria isolated from fish liver tissue of six species (Cyprinus carpio Val, Scattered-scaled mirror carpio, Cyprinus carpio red variety, Carassius auratus gibelio, Carassius auratus transparent colored variety, Carassius auratus red variety) where determined by the LKB-2277 bioactivity monitor. From them the rate constants of the activity recovery phase (k) and the total heat (Q) released during the experiment time were obtained. The results indicate that a fish with both larger k and Q values has a higher growth rate. Heterosis can be achieved when a male parent line with large k value and a female parent line with large Q value were used. We believe that the amount of total heat released indicates the metabolic activity of a species while the rate constant of activity recovery phase represents its adaptive capacity to environment.

Key words [MITOCHONDRIA](#) [HYBRIDIZATION](#) [METABOLISM](#) [BIOLOGICAL ACTIVITY](#)

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