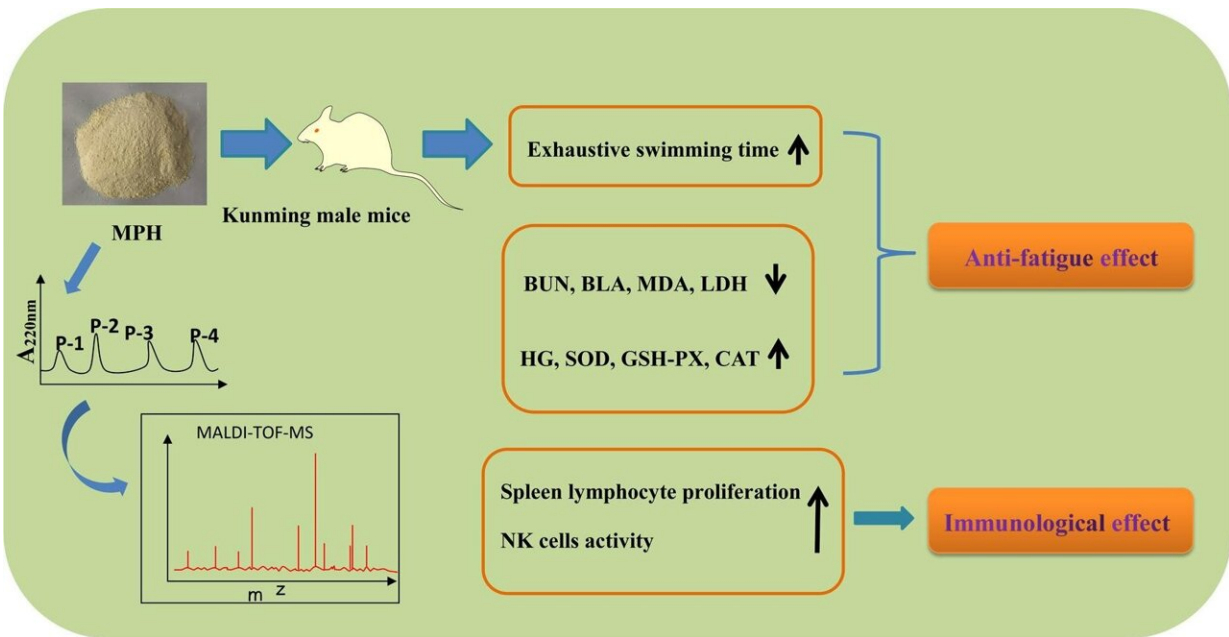


Exploring novel monkfish peptides that have anti-fatigue and immunological effects

May 9 2023, by Li Yuan



Graphical abstract. Credit: *Journal of Functional Foods* (2023). DOI: 10.1016/j.jff.2023.105546

Fatigue, accompanied by a modern life style and high-intensity exercise, has become a common human condition. Human health is closely related to the function of immune system, and the impairment of this system will also lead to fatigue. Researchers therefore are working to develop natural anti-fatigue and immune-enhancing compounds without side-effects.

Recently, a team led by Prof. Li Pengcheng from the Institute of Oceanology of the Chinese Academy of Sciences (IOCAS) obtained the special sequence of peptides from a monkfish (*Lophius litulon*) protein, and proved that monkfish peptides had anti-[fatigue](#) and immunity-enhancing effects. They also found that monkfish peptides could regulate immune function by regulating receptors involved in [inflammatory responses](#). The study was published in the *Journal of Functional Foods*.

The researchers used a series of separation and purification techniques, including ultrafiltration, gel filtration chromatography and reverse high-performance liquid chromatography, to obtain specific sequences of peptides. They found the peptides could significantly increase antioxidant enzyme activities, hepatic glycogen and lactate dehydrogenase contents, and decrease blood urea nitrogen and blood lactic acid contents in exercise-induced fatigue mice.

In addition, they found the monkfish peptides could enhance spleen lymphocyte proliferation and the activity of natural killer cells in mice. Transcriptomics analysis showed that there were 205 genes up-regulated and 1,040 genes down-regulated after the mice were fed monkfish peptides. The peptides could inhibit inflammatory cytokines activation by down-regulating the chemokine and Nucleotide Oligomerization Domain (NOD)-like receptor signaling pathways, thereby modulating the mouse [immune response](#).

"The monkfish peptides could be applied in health care products associated with anti-fatigue and immunity enhancing," said Wang Xueqin, first author of the study.

More information: Xueqin Wang et al, Structural properties, anti-fatigue and immunological effect of low molecular weight peptide from Monkfish, *Journal of Functional Foods* (2023). [DOI:](#)

[10.1016/j.jff.2023.105546](https://doi.org/10.1016/j.jff.2023.105546)

Provided by Chinese Academy of Sciences

Citation: Exploring novel monkfish peptides that have anti-fatigue and immunological effects (2023, May 9) retrieved 27 April 2024 from <https://phys.org/news/2023-05-exploring-monkfish-peptides-anti-fatigue-immunological.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.