

## Egg oil

Cat. No.:	HY-N12670												
CAS No.:	8001-17-0												
Target:	PI3K; Akt; Toll-like Receptor (TLR)												
Pathway:	PI3K/Akt/mTOR; Immunology/Inflammation												
Storage:	<table> <tr> <td>Pure form</td> <td>-20°C</td> <td>3 years</td> </tr> <tr> <td></td> <td>4°C</td> <td>2 years</td> </tr> <tr> <td>In solvent</td> <td>-80°C</td> <td>6 months</td> </tr> <tr> <td></td> <td>-20°C</td> <td>1 month</td> </tr> </table>	Pure form	-20°C	3 years		4°C	2 years	In solvent	-80°C	6 months		-20°C	1 month
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### BIOLOGICAL ACTIVITY

<b>Description</b>	Egg oil is a natural oil, which consists primarily of cholesterol, lecithin and glycerides of the fatty acids. Egg oil exhibits activity in regulating the gut microbial dysbiosis, alleviating obesity, insulin resistance and inflammation <sup>[1][2][3][4]</sup> .								
<b>In Vitro</b>	<p>Egg oil (0.1-0.8 mg/ml) reduces IL-8 secretion and exerts anti-inflammatory efficacy through Nrf2/NF-κB signaling pathway<sup>[2]</sup>.</p> <p>Egg oil (10-600 μg/ml) extracted from sea urchin attenuates 7β-OHC induced cytotoxicity, modulates activity of antioxidant enzyme and reduces production of MDA and CD, exhibits thus protective efficacy against neurodegenerative diseases<sup>[4]</sup>. MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p> <p>Cell Viability Assay<sup>[2]</sup></p> <table> <tr> <td>Cell Line:</td> <td>Caco2</td> </tr> <tr> <td>Concentration:</td> <td>0.1-0.8 mg/ml</td> </tr> <tr> <td>Incubation Time:</td> <td>2 h</td> </tr> <tr> <td>Result:</td> <td>Maintained cell viability.</td> </tr> </table>	Cell Line:	Caco2	Concentration:	0.1-0.8 mg/ml	Incubation Time:	2 h	Result:	Maintained cell viability.
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<b>In Vivo</b>	<p>Egg oil (150-600 mg/kg, i.g. for 16 weeks) extracted from Portunus trituberculatus improves insulin sensibility and hepatic glycogen synthesis, alleviates insulin resistance through activation of PI3K/Akt/Glu4 signaling in skeletal muscle and PI3K/Akt/GSK3β/GS pathway in the liver<sup>[1]</sup>.</p> <p>Egg oil (150-600 mg/kg, i.g. for 16 weeks) extracted from Portunus trituberculatus ameliorates HFD-induced obesity in mice, restores the gut microbial dysbiosis and down-regulates the LPS/TLR4 pathway in liver and epididymal adipose<sup>[3]</sup>. MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p> <table> <tr> <td>Animal Model:</td> <td>High-fat-diet feeding C57BL/6J mice<sup>[1][3]</sup></td> </tr> <tr> <td>Dosage:</td> <td>150-600 mg/kg</td> </tr> <tr> <td>Administration:</td> <td>i.g. for 16 weeks</td> </tr> <tr> <td>Result:</td> <td>Reduced body weight, adipose weight gain, blood glucose and lipids. Increased mRNA levels of PI3K, Akt, IPS1/2, Glu4, GSK3β and GS i muscle and liver.</td> </tr> </table>	Animal Model:	High-fat-diet feeding C57BL/6J mice <sup>[1][3]</sup>	Dosage:	150-600 mg/kg	Administration:	i.g. for 16 weeks	Result:	Reduced body weight, adipose weight gain, blood glucose and lipids. Increased mRNA levels of PI3K, Akt, IPS1/2, Glu4, GSK3β and GS i muscle and liver.
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## REFERENCES

- [1]. Hu S, et al., Egg oil from *Portunus trituberculatus* alleviates insulin resistance through activation of insulin signaling in mice. *Appl Physiol Nutr Metab*. 2019 Oct;44(10):1081-1088.
- [2]. Xiao N, et al., Egg yolk oils exert anti-inflammatory effect via regulating Nrf2/NF- $\kappa$ B pathway. *J Ethnopharmacol*. 2021 Jun 28;274:114070.
- [3]. Hu S, et al., Egg oil from *Portunus trituberculatus* alleviated obesity and regulated gut microbiota in mice. *Sci Rep*. 2020 May 21;10(1):8454.
- [4]. Zarrouk A, et al., 7 $\beta$ -hydroxycholesterol-induced cell death, oxidative stress, and fatty acid metabolism dysfunctions attenuated with sea urchin egg oil. *Biochimie*. 2018 Oct;153:210-219.
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**Caution: Product has not been fully validated for medical applications. For research use only.**

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