

### Extraction and Purification of Phospholipid-rich Krill Oil

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Antarctic krill is a shrimp-like pelagic marine animal which contains a lot of phospholipids. Phospholipids in krill oil can be easily combined with  $\omega$ -3 poly unsaturated fatty acids, then they are called PL-PUFAs in short. Absorbed into human body very fast, PL-PUFAs can perform many beneficial physiological functions. Thus it was tried to isolate PL-PUFAs in high purity by extraction and purification processes.

Several types of extraction processes, such as two-step supercritical fluid extraction, soxhlet extraction and combined process, were tried using supercritical carbon dioxide and ethanol. In addition, Supercritical Anti-solvent System (SAS) and Supercritical Fluid Extraction (SFE) using carbon dioxide were adopted to increase the content of PL-PUFAs in the extracted oil by removing only neutral lipids and residual ethanol.

The results of each experiment were compared. And it was tried to figure out the best way of extraction and the optimum conditions for the extraction process.