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Krill oil: new nutraceuticals

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ABSTRACT

Krill oil is a new available health product which is produced from deep marine species. Its property is to promote good health. The good lipid composition and antioxidant enrichment make krill oil a new nutraceutical for reducing health problems.

1. Introduction

Krill oil is a new available health product which is produced from deep marine species, namely, krill. Krill lives in deep sea in the area of new global polar. It is a marine crustacean species enriching in both eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA). Due to the good environment, krill exposes to very few pollutants. As a deep sea animal, krill contains good omega-3 lipid, similar to deep sea fishes. Recently, nutritional scientists successfully produced oil from krill and called krill oil. Its property is to promote good health. The good lipid composition and antioxidant enrichment make krill oil a new nutraceutical for reducing health problems. Ulven *et al.* noted that metabolic effects of krill oil are essentially similar to

those of fish oil but at lower dose of EPA and DHA, in healthy volunteers[1]. Also, it is proved for no toxicity to intestinal lumen[2]. Maki *et al.* concluded that krill oil supplementation increased plasma EPA and DHA and was well tolerated, with no indication of adverse effects on safety parameters[3]. Here, several advantages of krill oil for human beings are reviewed and presented.

2. Roles of krill oil in health problems

2.1. Roles of krill oil in dyslipidemia

As noted, krill oil has several advantages against problem of dyslipidemia. Bunea *et al.* found that krill oil is effective for the management of hyperlipidemia by significantly reducing total cholesterol, low density lipoprotein and triglycerides, and increasing high density lipoprotein levels and at lower and equal doses, krill oil was significantly more effective than fish

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oil for the reduction of glucose, triglycerides, and low density lipoprotein levels[3,4]. Berge *et al.* also reported that chronic treatment with krill powder reduces plasma triglyceride and anandamide levels in mildly obese men[5]. Berge *et al.* concluded that krill oil was effective for management of dyslipidemia[5,6].

2.2. Roles of krill oil in management of joint problems

Due to the good effect of krill oil on the biological process of inflammation, it is no doubt that krill oil can be useful for management of joint disease. Deutsch found that krill oil significantly inhibits inflammation and reduces arthritic symptoms within a short treatment period[7].

2.3. Roles of krill oil in management of gynecological problems

Krill oil is mentioned for its usefulness in management of dysmenorrhea. Sampalis *et al.* noted that krill oil can significantly reduce dysmenorrhea and the emotional symptoms of premenstrual syndrome and is shown to be significantly more effective for the complete management of premenstrual symptoms compared to omega-3 fish oil[8].

3. Conclusion

Krill oil seems to be a useful marine-derived nutraceuticals. There are many evidences of krill oil as food supplementation for the patients with problem of dyslipidemia.

Krill oil is a natural product derived from a sea animal. This product has just been available for a few years. Krill oil seems to be a useful marine-derived nutraceuticals[9-12]. There are many evidences of krill oil as food supplementation for the patients with problem of dyslipidemia. There are some evidences support the usefulness of krill oil in the patients with underlying dyslipidemia. However, some reports mentioned for the opposite effect[13]. It is still not conclusive and further studies to support the clinical effectiveness of krill oil are necessary. In addition to dyslipidemia, the other problems as joint disease and gynecological problem are also studied. Similar to the cases with dyslipidemia, the effectiveness of krill oil is sometimes mentioned. Nevertheless, the exact advantage has to be further verified by standard clinical trials. Conclusively, krill oil seems to be good marine food supplementation but there is still no concrete conclusive on clinical efficacy in management of disease.

Conflict of interest statement

We declare that we have no conflict of interest.

References

- [1] Ulven SM, Kirkhus B, Lamglait A, Basu S, Elind E, Haider T, et al. Metabolic effects of krill oil are essentially similar to those of fish oil but at lower dose of EPA and DHA, in healthy volunteers. *Lipids* 2011; **46**(1): 37-46.
- [2] Ruggiero-Lopez D, Servetto C, Lopez E, Lenoir D, Alallon W, Biol MC, et al. Comparative effects of dietary corn, fish and krill oils on intestinal glycosylation. *Biochem Mol Biol Int* 1994; **33**(5): 1001-10.
- [3] Maki KC, Reeves MS, Farmer M, Griinari M, Berge K, Vik H, et al. Krill oil supplementation increases plasma concentrations of eicosapentaenoic and docosahexaenoic acids in overweight and obese men and women. *Nutr Res* 2009; **29**(9): 609-15.
- [4] Bunea R, El Farrah K, Deutsch L. Evaluation of the effects of Neptune Krill Oil on the clinical course of hyperlipidemia. *Altern Med Rev* 2004; **9**(4): 420-8.
- [5] Berge K, Piscitelli F, Hoem N, Silvestri C, Meyer I, Banni S, et al. Chronic treatment with krill powder reduces plasma triglyceride and anandamide levels in mildly obese men. *Lipids Health Dis* 2013; **12**: 78.
- [6] Berge K, Musa-Veloso K, Harwood M, Hoem N, Burri L. Krill oil supplementation lowers serum triglycerides without increasing low-density lipoprotein cholesterol in adults with borderline high or high triglyceride levels. *Nutr Res* 2014; **34**(2): 126-33.
- [7] Deutsch L. Evaluation of the effect of Neptune Krill Oil on chronic inflammation and arthritic symptoms. *J Am Coll Nutr* 2007; **26**(1): 39-48.
- [8] Sampalis F, Bunea R, Pelland MF, Kowalski O, Duguet N, Dupuis S. Evaluation of the effects of Neptune Krill Oil on the management of premenstrual syndrome and dysmenorrhea. *Altern Med Rev* 2003; **8**(2): 171-9.
- [9] Burri L, Johnsen L. Krill products: an overview of animal studies. *Nutrients* 2015; **7**(5): 3300-21.
- [10] Backes JM, Howard PA. Krill oil for cardiovascular risk prevention: is it for real? *Hosp Pharm* 2014; **49**(10): 907-12.
- [11] Salem N Jr, Kuratko CN. A reexamination of krill oil bioavailability studies. *Lipids Health Dis* 2014; **13**: 137.
- [12] Kwantes JM, Grundmann O. A brief review of krill oil history, research, and the commercial market. *J Diet Suppl* 2015; **12**(1): 23-35.
- [13] Albert BB, Derraik JG, Brennan CM, Biggs JB, Garg ML, Cameron-Smith D, et al. Supplementation with a blend of krill and salmon oil is associated with increased metabolic risk in overweight men. *Am J Clin Nutr* 2015; **102**(1): 49-57.