

Omega-3 polyunsaturated fatty acid content in different edible portions of commercial scallop

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Background - Seafood is a rich source of long chain n-3 polyunsaturated fatty acids (PUFA). Previous studies showed that there was a variation of n-3 PUFA concentration and total lipid content between different edible portions of seafood. However, there are no data available on the variation of fatty acid concentration between different edible portions of Australian scallop.

Objective - To compare the fatty acid and total lipid contents in muscle and gonad of commercial scallop, *Pecten fumatus*.

Design - Seven samples of scallop were analysed. The total lipid was extracted with methanol-chloroform containing butylated hydroxytoluene. The fatty acid methyl esters were prepared by saponification of about 20 mg lipid plus 2 mg of methyl tricosanoate using KOH followed by transesterification in BF₃ in methanol. The fatty acid methyl esters were separated by gas liquid chromatography.

Outcomes - Gonad contained significantly higher levels of total n-3 PUFA, 20:5n-3, 22:6n-3 and 22:5n-3 than muscle (P<0.05). 22:6n-3 and 20:5n-3 were the main n-3 PUFA in both gonad and muscle. Higher levels of total n-6 PUFA, total lipid, saturated fatty acids and monounsaturated fatty acids were also recorded in gonad than in muscle (P<0.05).

Conclusion - Gonad of commercial scallop is a better source of long chain n-3 PUFA than muscle. Consumption of scallop with well-developed gonad will provide a good source of long chain n-3 PUFA and help to achieve the correct dietary recommendations.