

Lipid Indexes and Quality Evaluation of Omega-3 Rich Oil from the Waste of Japanese Spanish Mackerel Extracted by Supercritical CO₂

Supplementary File

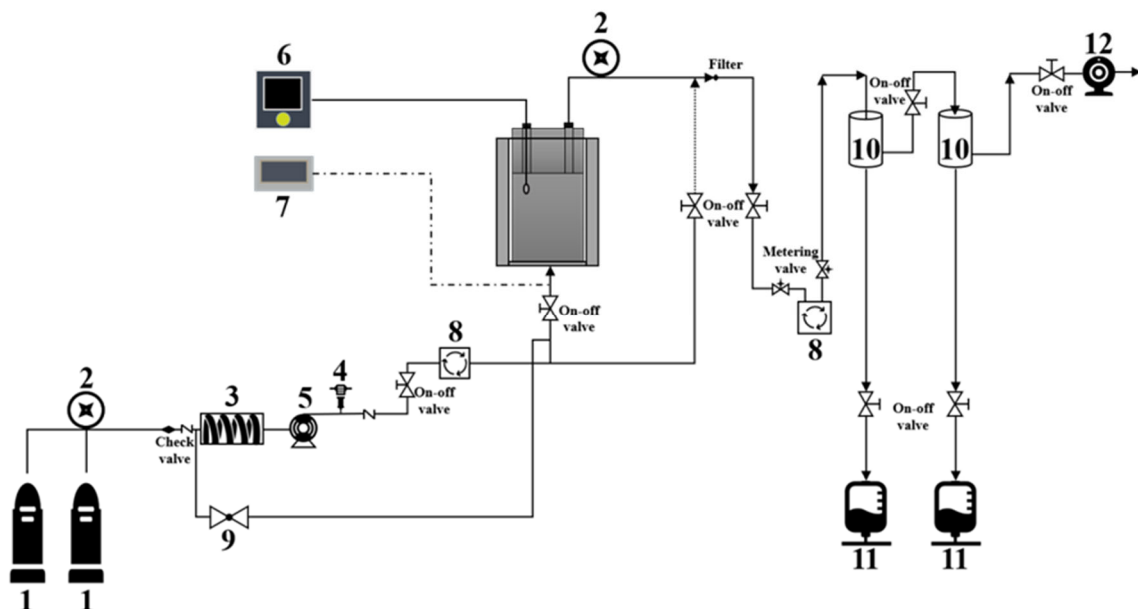


Figure S1. A schematic diagram of SC-CO₂ extraction process.

(1: CO₂ tank, 2: Pressure gauge, 3: Cooling bath, 4: Safety valve, 5: Main pump, 6: Electric indicator, 7: Pressure indicator, 8: Heat exchanger, 9: BPR valve, 10: Separator, 11: Sample collector, 12: Gas flow meter)

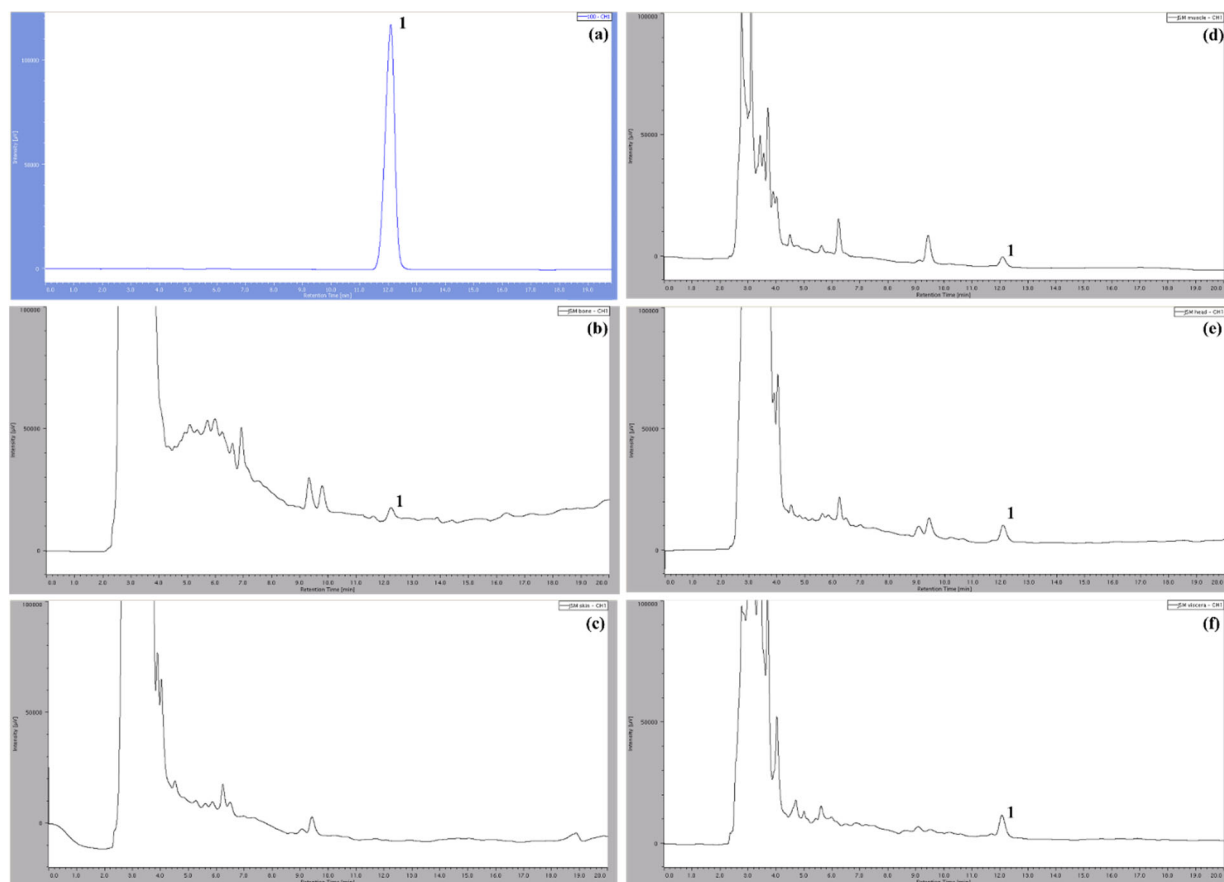


Figure S2. HPLC chromatograms of vitamin D (1) of standards and samples (vitamin D standard (a), bone oil (b), skin oil (c), muscle oil (d), head oil (e), and viscera oil (f))

Table S1. Proximate compositions of JSM raw materials

	Skin	Muscle	Bone	Head	Belly	Others
Body percentage	8.61 ± 0.34 ^d	50.89 ± 0.30 ^a	7.91 ± 0.14 ^e	16.03 ± 0.17 ^b	6.22 ± 0.22 ^f	9.96 ± 0.13 ^c
Moisture	2.28 ± 0.17 ^d	11.96 ± 0.51 ^a	2.42 ± 0.41 ^d	3.87 ± 0.25 ^c	11.09 ± 0.73 ^b	-
Lipid	51.08 ± 0.01 ^a	30.24 ± 0.47 ^c	42.50 ± 1.03 ^b	42.27 ± 0.96 ^b	30.27 ± 1.08 ^c	-
Ash	4.78 ± 0.06 ^d	6.87 ± 0.37 ^c	9.19 ± 0.59 ^a	9.09 ± 0.49 ^b	4.43 ± 0.74 ^d	-
Protein	40.12 ± 0.27 ^e	49.14 ± 0.44 ^b	45.52 ± 0.34 ^c	44.39 ± 0.40 ^d	52.17 ± 0.36 ^a	-

±, indicates the standard deviation from the mean; different superscripts indicate the significant differences ($P < 0.05$)

Table S2. Gas chromatography operating conditions for fatty acid analysis of anchovy oils and commercial oils

Parameters	Conditions
Instrument	Agilent 6890N GC System
Split	Splitless
Inject Temperature	250 °C
Carrier Gas & Flow Rate	He, 0.5 mL/min
Oven Condition	140 °C (5 min) → 4 °C/min for 25 min → 240°C (17 min)
Detect Temperature	260 °C
Column	Supelco sp. 2560, capillary column Fused silica Capillary 100.0 m × 250 µm × 0.2 µm film thickness