

Supporting information

Influence of lipid oxidation on the digestive efficiency of Antarctic krill oil: insights from a simulated gastrointestinal digestion model

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Table S1. Solutions of digestion fluids diluted with water (1.25× concentrations).

Solution added	Final concentration in SGF (mM)	Final concentration in SIF (mM)
KCl	6.9	6.8
KH ₂ PO ₄	0.9	0.8
NaHCO ₃	25	85
NaCl	47.2	38.4
MgCl ₂ (H ₂ O) ₆	0.12	0.33
(NH ₄) ₂ CO ₃	0.5	-
HCl	15.6	8.4
CaCl ₂ (H ₂ O) ₂	0.15	0.6
Pepsin	2000 U/mL	-
Gastric lipase	60 U/mL	-
Pancreatin	-	2000 U/mL
Bile salts	-	10
Phospholipase A ₂	-	5 U/mL

Table S2 Free fatty acid content (g/100 g) of lipids extracted from the digestive fluids

	Fresh	Oxidized	F-SI	O-SI	F-SI-TPP	O-SI-TPP
C14:0	0.13±0.01f	0.16±0.01e	2.66±0.01a	2.11±0.01c	2.21±0.01b	1.37±0.01d
C16:0	0.44±0.03e	0.52±0.04d	5.26±0.05a	4.24±0.03b	4.29±0.02b	2.68±0.01c
C16:1	0.08±0.00e	0.10±0.00e	2.14±0.01a	1.74±0.01c	1.82±0.02b	1.31±0.01d
C17:0	0.01±0.00e	0.02±0.00e	0.33±0.00a	0.28±0.00c	0.28±0.00b	0.19±0.01d
C18:0	0.01±0.00f	0.02±0.00e	0.38±0.00a	0.31±0.00c	0.35±0.00b	0.21±0.00d
C18:1 n-9c	0.14±0.00f	0.17±0.02e	3.21±0.02a	2.61±0.01c	2.66±0.01b	1.90±0.01d
C18:2 n-6t	0.13±0.01f	0.15±0.01e	1.71±0.01a	1.35±0.01c	1.44±0.00b	1.01±0.01d
C18:2 n-6c	0.07±0.00e	0.07±0.00e	0.62±0.00a	0.48±0.00c	0.50±0.00b	0.36±0.00d
C18:3 n-3	0.18±0.01e	0.25±0.02c	0.33±0.02a	0.28±0.00b	0.29±0.00b	0.23±0.04d
C20:0	0.06±0.00f	0.07±0.00e	0.92±0.01a	0.77±0.00c	0.81±0.00b	0.52±0.00d
C20:1	0.02±0.00e	0.02±0.00e	0.45±0.00a	0.33±0.01c	0.37±0.00b	0.22±0.00d
C20:5 n-3	0.58±0.04e	0.66±0.06e	6.45±0.10a	5.32±0.03c	5.44±0.02b	3.60±0.01d
C22:6 n-3	0.56±0.04e	0.62±0.05e	4.96±0.08a	3.96±0.02c	4.15±0.01b	2.74±0.00d
SUM	2.40±0.16f	2.82±0.23e	29.42±0.57a	23.78±0.11c	24.61±0.10b	16.35±0.07d

a–f Differences in the experimental data of free fatty acids in the same row ($p < 0.5$). F and O mean fresh and oxidized AKO, respectively. SI means simulated intestinal digestion. TPP means tea polyphenol palmitate. SUM means total free fatty acid content.

Table S3 Fatty acid content (g/100 g) of lipids before the SGID

	Fatty acid content (g/100g)
Fresh	89.83±0.48
Oxidized	83.42±0.17