

Table S1. Proximate composition (% of wet tissue) of New Zealand Hoki and Gemfish roe.

Items	Moisture	Lipid	Protein	Ash	Carbohydrate
Hoki roe	68.8 ± 0.38 ^A	10.1 ± 0.65 ^A	17.9 ± 0.72 ^B	1.3 ± 0.12	1.9 ± 0.83 ^B
Gemfish roe	63.2 ± 0.70 ^B	7.6 ± 0.03 ^B	23.8 ± 0.74 ^A	1.3 ± 0.06	4.2 ± 0.64 ^A

Different superscript letters (^A, ^B) in the same column indicate a significant difference ($P < 0.05$). Carbohydrate content was determined by subtracting the sum of moisture, protein, lipid, and ash from 100%. Results are presented as mean ± standard deviation.

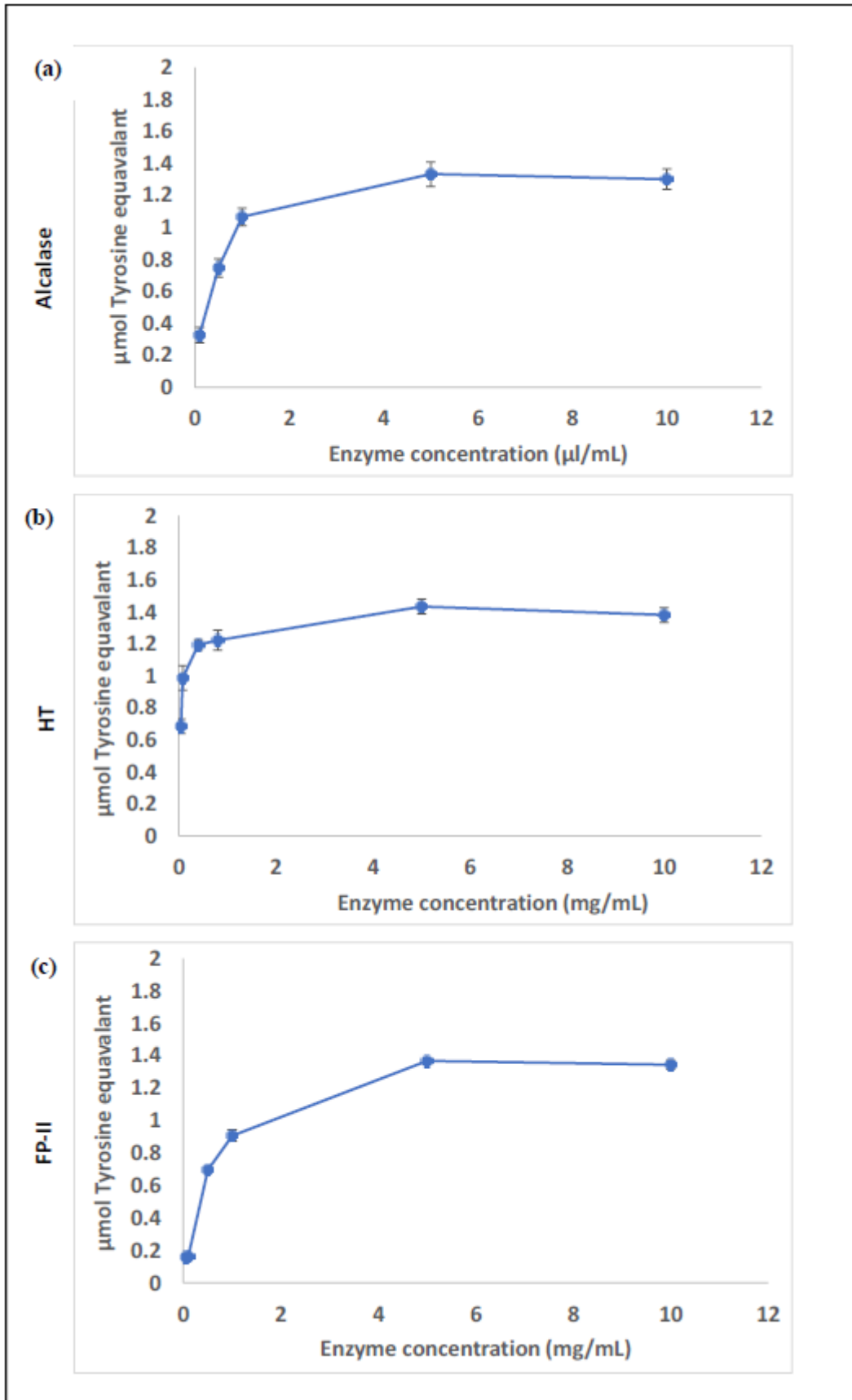


Figure S1. Casein hydrolysis as a function of enzyme hydrolysis using Alcalase (a), HT (b), and FP-II (c).

Protease (Alcalase, HT, and FP-II) hydrolysis at pH (7.0) and temperature (45 °C). The result of μmol tyrosine equivalent was applied to indicate the activity of different protease concentration with 30 min hydrolysis. Alcalase was commercially provided as a solution concentration of the prepared stock solution; the enzyme solution was prepared alcalase ($\mu\text{l/mL}$), HT (mg/mL), and FP-II (mg/mL), as mentioned on the X-axis.

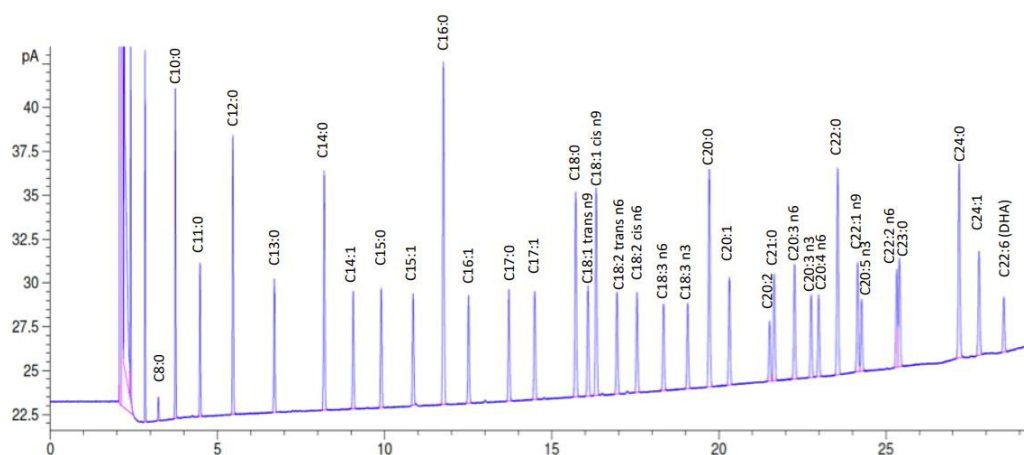


Figure S2. Analysis of commercial FAME standard by GC-FID

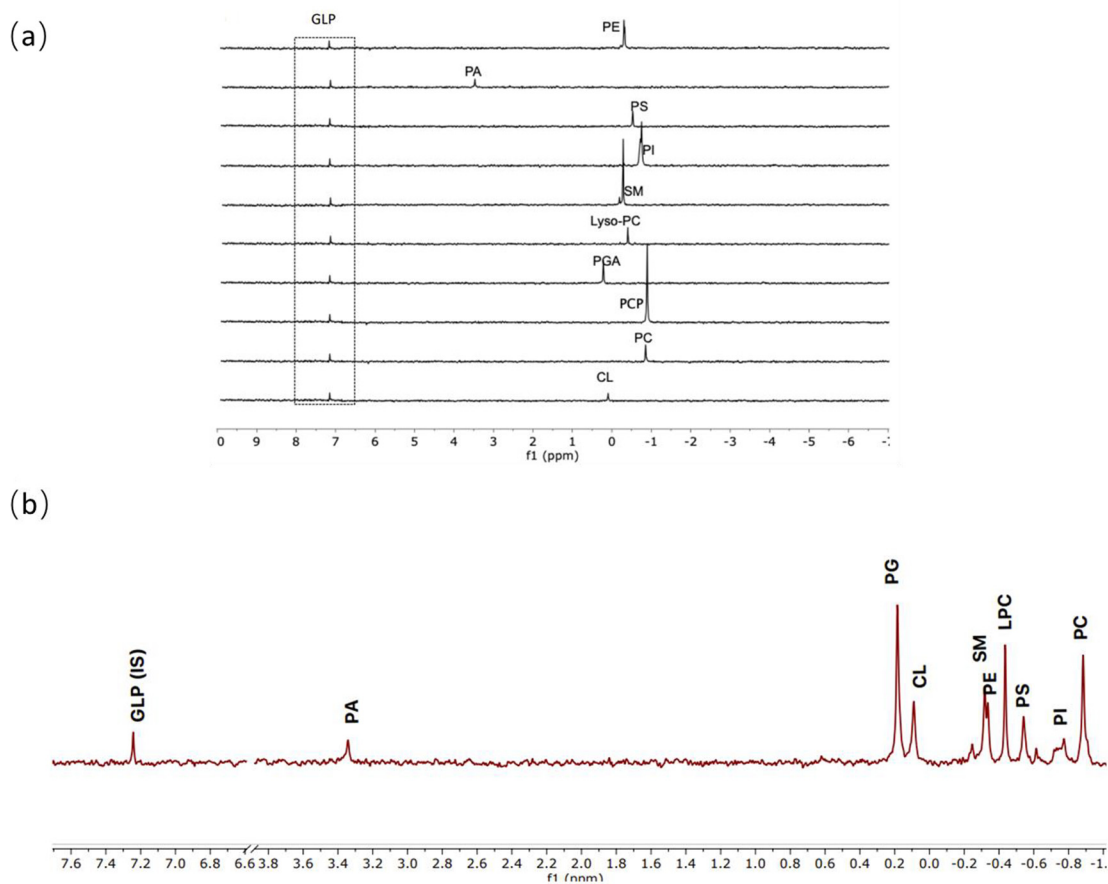


Figure S3. NMR analysis of individual phospholipid standards in D₂O (a). Standard mix in D₂O (b).

Abbreviations: PA= phosphatidic acid; PG= phosphatidylglycerol; CL= cardiolipin; PE= phosphatidylethanolamine; LPC= lyso-phosphatidylcholine; SM= sphingomyelin; PI=

Table S2. Summary of roe homogenate sample and enzyme formulation for time course hydrolysis

	Gemfish roe (<i>w/w</i> or <i>v/w</i>)	Hoki roe (<i>w/w</i> or <i>v/w</i>)
Frozen thaw-Alc	2%, 6% and 10%	2%, 6% and 10%
Frozen thaw-HT	2%, 6% and 10%	2%, 6% and 10%
Frozen thaw-FP-II	2%, 6% and 10%	2%, 6% and 10%
Delipidation-Alc	2%, 6% and 10%	2%, 6% and 10%
Delipidation-HT	2%, 6% and 10%	2%, 6% and 10%
Delipidation-FP-II	2%, 6% and 10%	2%, 6% and 10%
Freeze-dried-Alc	2%, 6% and 10%	2%, 6% and 10%
Freeze-dried-HT	2%, 6% and 10%	2%, 6% and 10%
Freeze-dried-FP-II	2%, 6% and 10%	2%, 6% and 10%
Delipidation and Freeze-dried-Alc	2%, 6% and 10%	2%, 6% and 10%
Delipidation and Freeze-dried-HT	2%, 6% and 10%	2%, 6% and 10%
Delipidation and Freeze-dried-FP-II	2%, 6% and 10%	2%, 6% and 10%

-Alc, -HT, -FP-II: sample hydrolysis by protease alcalase, HT, and FP-II.

w/w and *v/w*: weight of protease/ weight of roe homogenate and volume of protease/ weight of roe homogenate.