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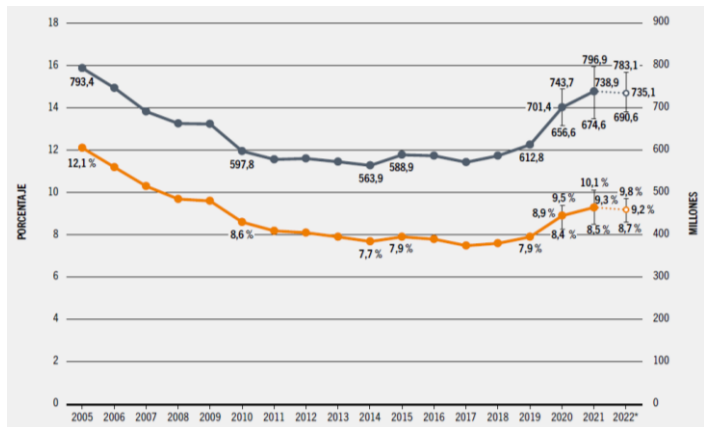
Valorización de algas pardas como fuente de alimentos saludables.

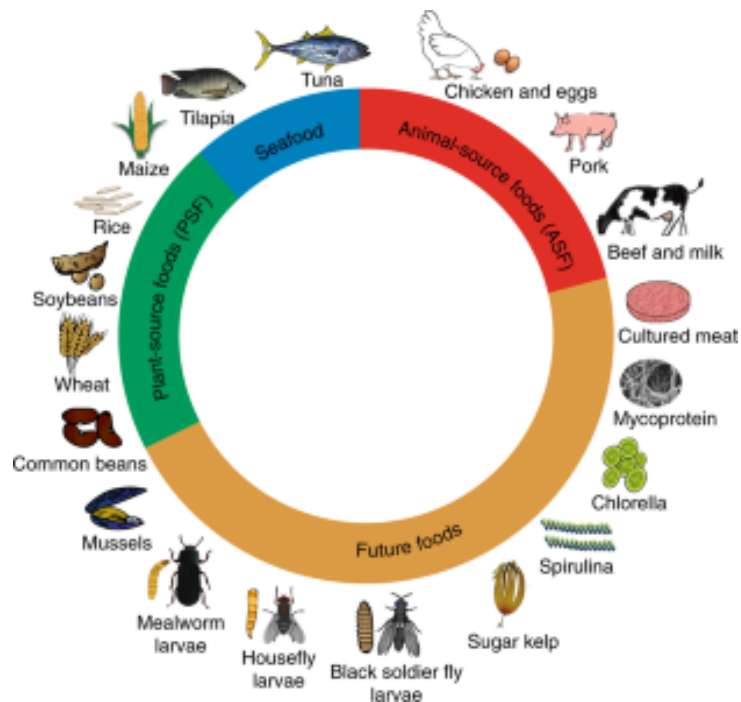
Dr. Javier Parada
Universidad Austral de Chile



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[nature](#) > [nature sustainability](#) > [articles](#) > [article](#)

Article | [Published: 14 December 2018](#)

The potential of future foods for sustainable and healthy diets

[A. Parodi](#), [A. Leip](#), [I. J. M. De Boer](#), [P. M. Slegers](#), [F. Ziegler](#), [E. H. M. Temme](#), [M. Herrero](#), [H. Tuomisto](#), [H. Valin](#), [C. E. Van Middelaar](#), [J. J. A. Van Loon](#) & [H. H. E. Van Zanten](#) 

[Nature Sustainability](#), **1**, 782–789 (2018) | [Cite this article](#)

Special Article

Risks and benefits of consuming edible seaweeds

Paul Cherry, Cathal O'Hara, Pamela J. Magee, Emeir M. McSorley, and Philip J. Allsopp



Recent interest in seaweeds as a source of macronutrients, micronutrients, and bioactive components has highlighted prospective applications within the functional food and nutraceutical industries, with impetus toward the alleviation of risk factors associated with noncommunicable diseases such as obesity, type 2 diabetes, and cardiovascular disease. This narrative review summarizes the nutritional composition of edible seaweeds; evaluates the evidence regarding the health benefits of whole seaweeds, extracted bioactive components, and seaweed-based food products in humans; and assesses the potential adverse effects of edible seaweeds, including those related to ingestion of excess iodine and arsenic. If the potential functional food and nutraceutical applications of seaweeds are to be realized, more evidence from human intervention studies is needed to evaluate the nutritional benefits of seaweeds and the efficacy of their purported bioactive components. Mechanistic evidence, in particular, is imperative to substantiate health claims.

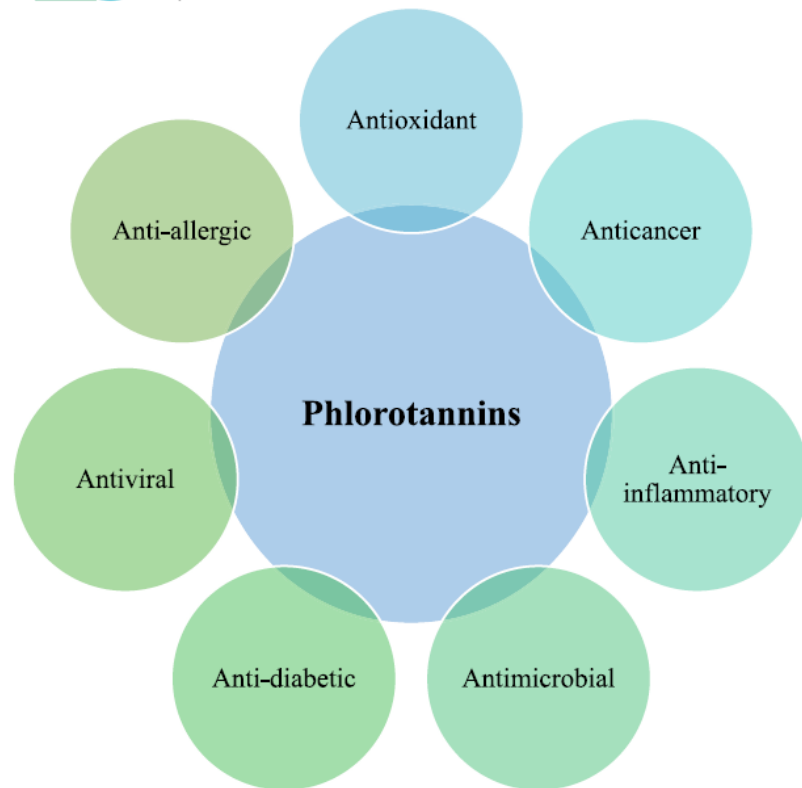


Fig. 4. Biological activities ascribed to phlorotannins.

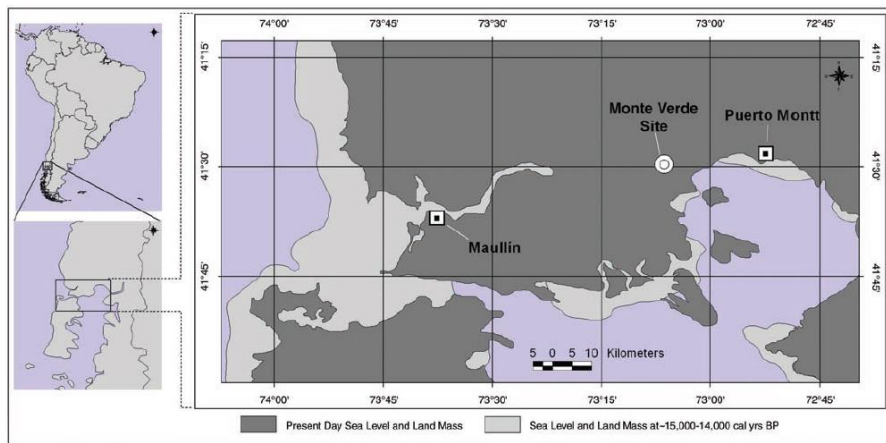


Fig. 1. Map of the Monte Verde area showing the location of the sea level and coastline at ~15,000 to 14,000 cal yr B.P. and at the present day.

Monte Verde: Seaweed, Food, Medicine, and the Peopling of South America

Tom D. Dillehay,^{1*} C. Ramirez,² M. Pino,³ M. B. Collins,⁴ J. Rossen,⁵ J. D. Pino-Navarro⁶

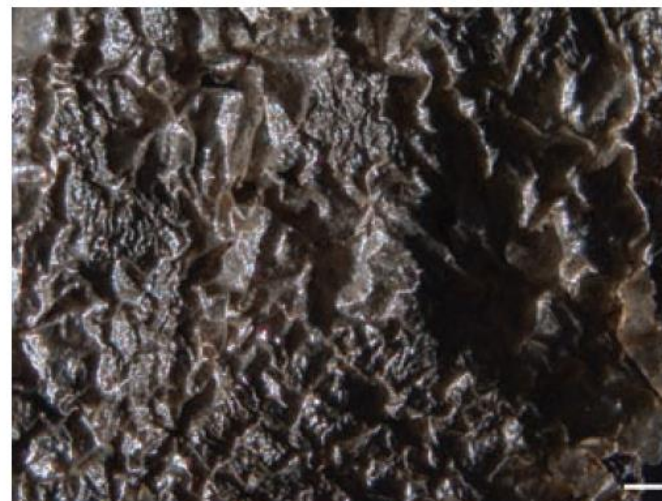
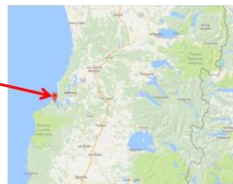


Fig. 2. Microscopic view of an archaeological specimen of *Durvillaea antarctica* from a hearth matrix located in the remains of a domestic hut. Scale bar, ~100 μ m.



Palo Muerto, Corral.
"Sindicato de pescadores
independiente indígena de Palo
Muerto".



Cuadro 5. Taxonomía y localización de especies de algas en estudio

Nombre científico	Taxonomía	Zona hábitat
<i>Durvillaea antarctica</i> (Cochayuyo)	<i>Pb, Fucales, Durvillaceae</i>	Intermareal bajo
<i>Gelidium sp.</i> (Gelillo)	<i>Rb, Gelidiales, Gelidiaceae</i>	Intermareal medio
<i>Lesonia spicata</i> (Palo huuro)	<i>Pb, Laminariales, Lessoniaceae</i>	Intermareal bajo
<i>Notboegenia sp.</i> (Chascuo)	<i>Rb, Galaxauraceae</i>	Intermareal alto
<i>Mazzaella laminarioides</i> (Luga cuchara)	<i>Rb, Gigartinales, Gigartimaceae</i>	Intermareal medio
<i>Porphyra sp.</i> (Luche)	<i>Rb, Bangiales, Bangiaceae</i>	Intermareal alto fija a la roca

Cochayuyo como fuente de ingredientes anti-hiperglicémico



Article

Bioactive Polyphenols from Southern Chile Seaweed as Inhibitors of Enzymes for Starch Digestion

Luz Verónica Pacheco ¹, Javier Parada ^{2,*}, José Ricardo Pérez-Correa ³,
 Maria Salomé Mariotti-Celis ⁴, Fernanda Erpel ⁵, Angara Zambrano ⁵
 and Mauricio Palacios ^{6,7,8}



**Altas presiones
con agua/etanol 1:1**
 (Thermo
 Scientific™
 Dionex™ ASE™
 150, 120°C, 1500
 psi)



**Presión
atmosférica con
acetona 60% (1 h,
100 rpm, 30°C)**

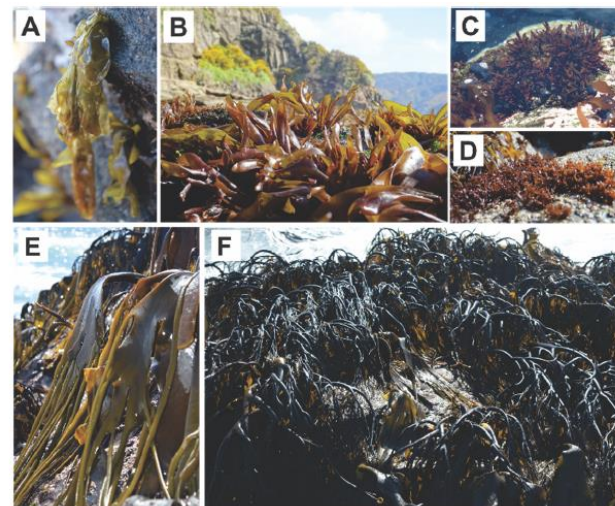
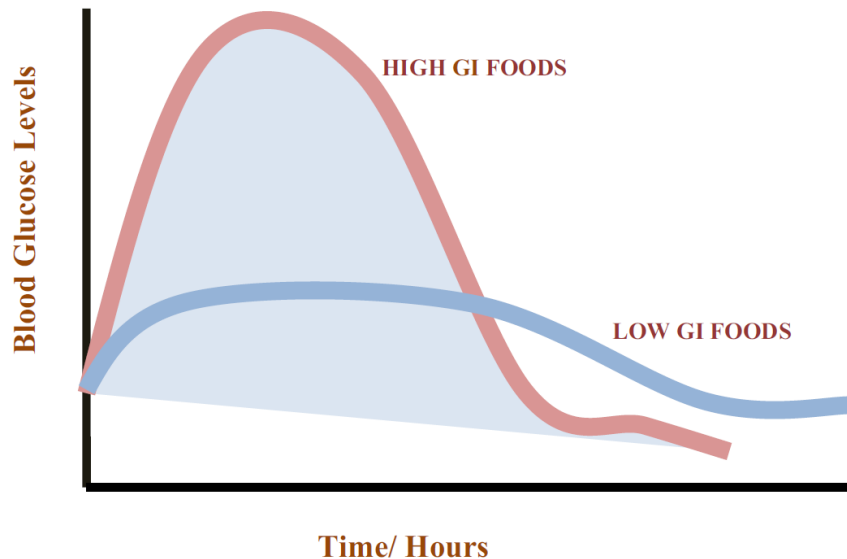


Figure 4. Macroalgae used in this study. The red macroalgae species (A) *Pyropia* sp., (B) *M. laminarioides*, (C) *Gelidium* sp., (D) *Nothogenia* sp.; and the brown macroalgae species (E) *D. antarctica* and (F) *L. spicata*. (Photograph by Mauricio Palacios- IDEAL Center).



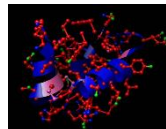
Journal of Food Measurement and Characterization (2022) 16:533–546
<https://doi.org/10.1007/s11694-021-01179-z>

Alimentos con bajo IG

Niveles más bajos de glucosa en sangre postprandial



Menor demanda de insulina



Reducción en el nivel de lípidos en sangre



Aumento de la fermentación en el colon

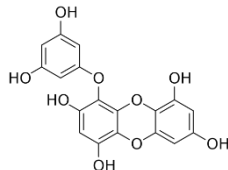


Mayor saciedad



**ENFERMEDADES
CRÓNICAS NO
TRANSMISIBLES**

Posibles mecanismos que ayudan a moderar la respuesta glicémica ante el consumo de algas (polifenoles)



Disminución de **carbohidratos disponibles** por cambio en la composición nutricional.

Inhibición de **enzimas α -amilasa** y **α -glucosidasa**.

Aumento del **retiro de glucosa** sanguínea por aumento de retiro de glucosa mediado por insulina por músculo esquelético al activar la vía **PI3K/PKB**.

Cochayuyo como fuente de ingredientes anti-hiperglicémico

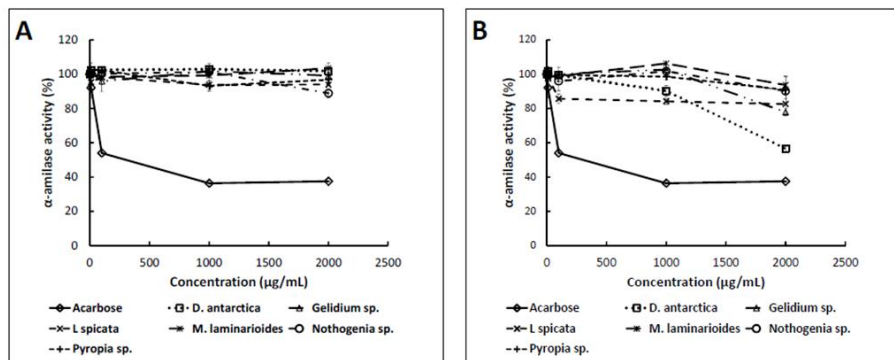


Figure 2. Percentages of the α -amylase activity under different concentrations of ethanol (A) and acetone (B) extracts ($\mu\text{g/mL}$). The points represent the average enzymatic activity (%) \pm standard deviation ($n = 3$).

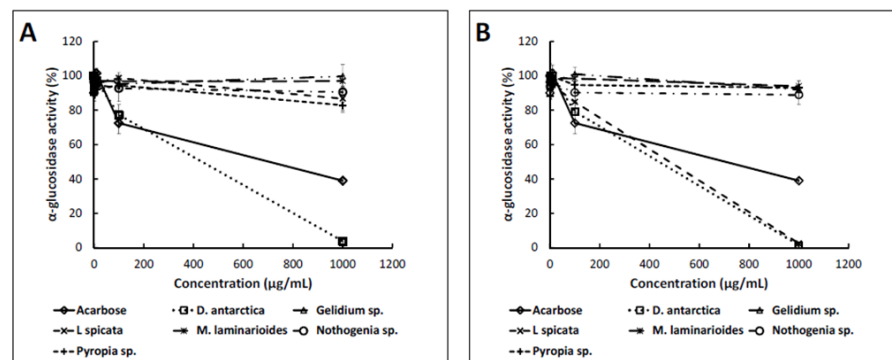
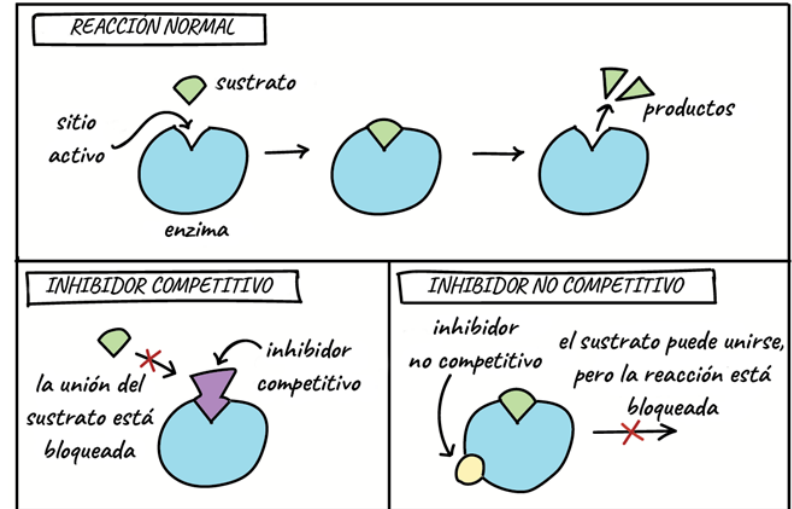
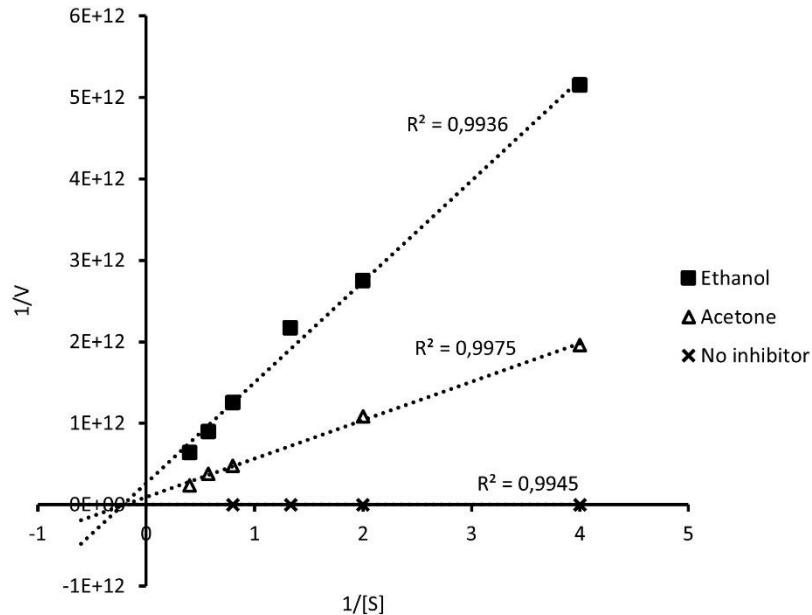
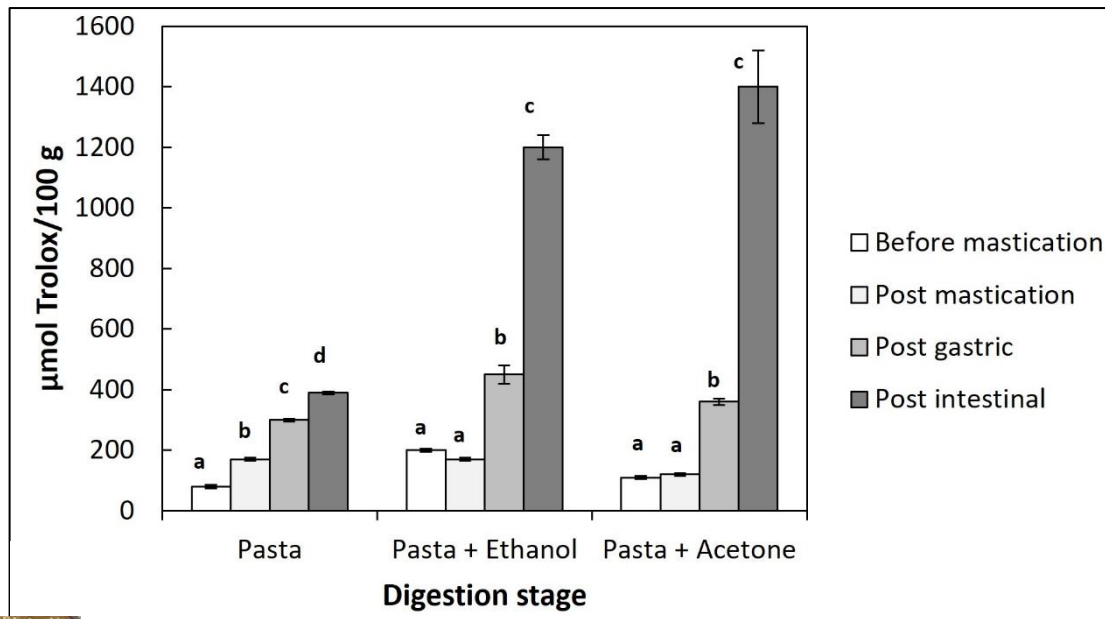
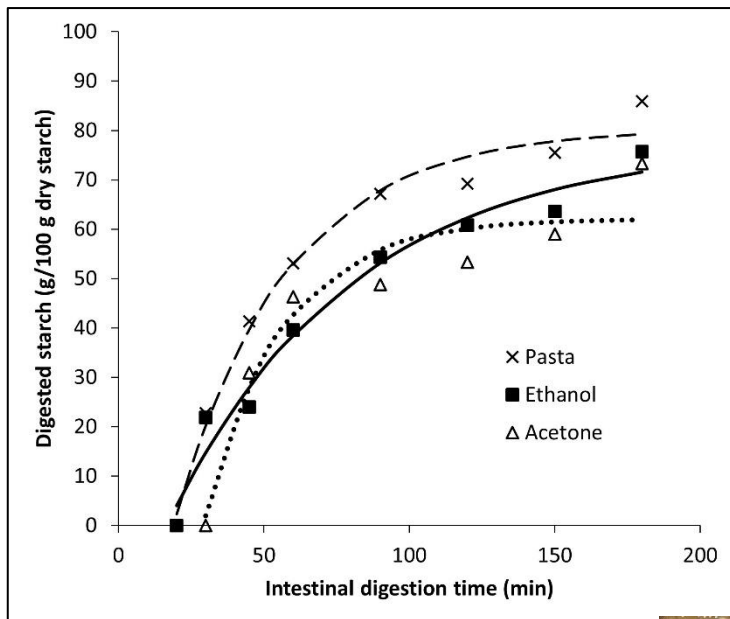


Figure 3. Percentages of α -glucosidase activity under different concentrations of ethanol (A) and acetone (B) extracts ($\mu\text{g/mL}$). Points represent the average enzymatic activity (%) \pm standard deviation ($n = 3$).

Graficas de Lineweaver-Burk: cinética de inhibición de la α -glucosidasa



Digestión *in vitro* de almidón (espagueti) en presencia de extracto de cochayuto.





Potencial anti Alzheimer

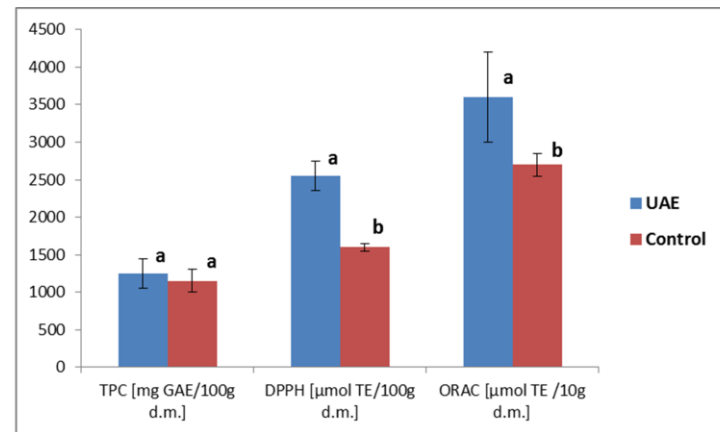
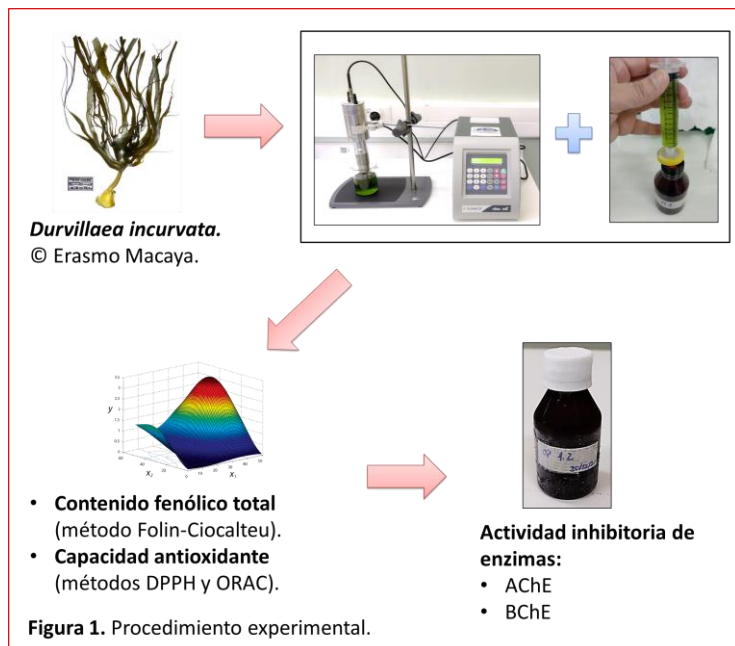


Figura 2. Contenido fenólico total (TPC) y capacidad antioxidante (DPPH y ORAC) de extractos usando ultrasonido.

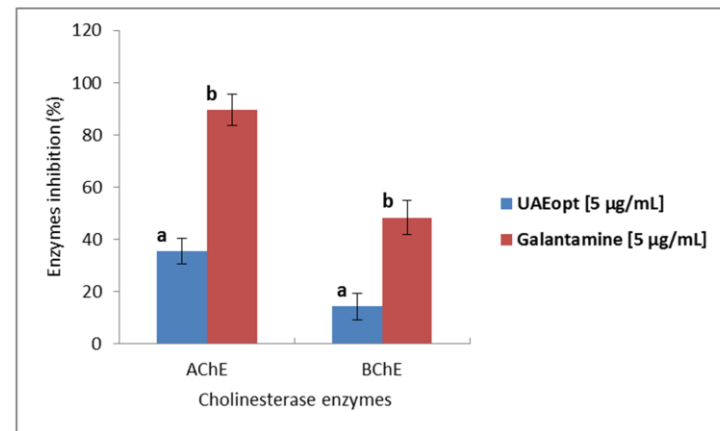
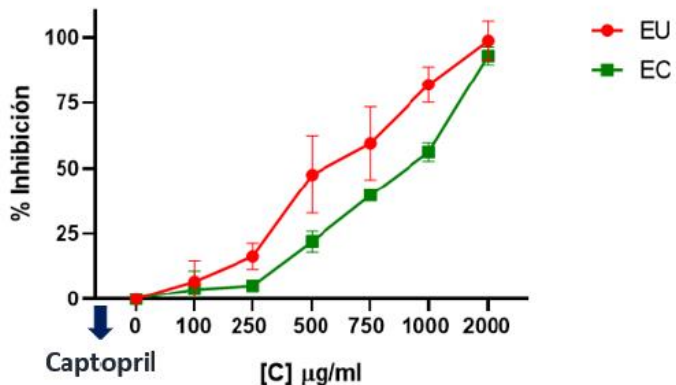


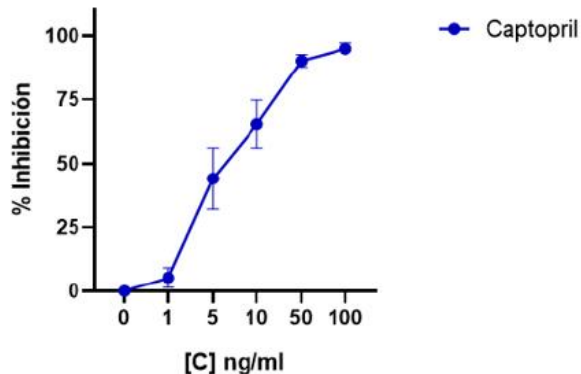
Figura 3. Actividad inhibitoria ante AChE y BChE del extracto obtenido a condiciones óptimas (UAEopt).

Inhibición de la actividad de la enzima convertidora de angiotensina-I.

a) Inibición de la actividad de la Enzima convertidora de angiotensina-I

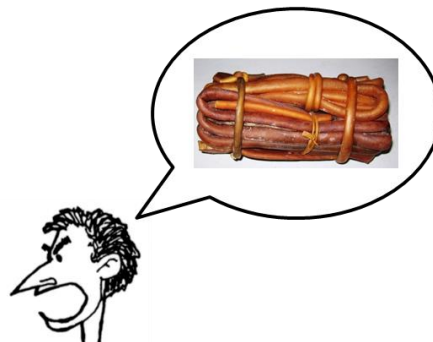


b) Inibición de la actividad de la Enzima convertidora de angiotensina-I

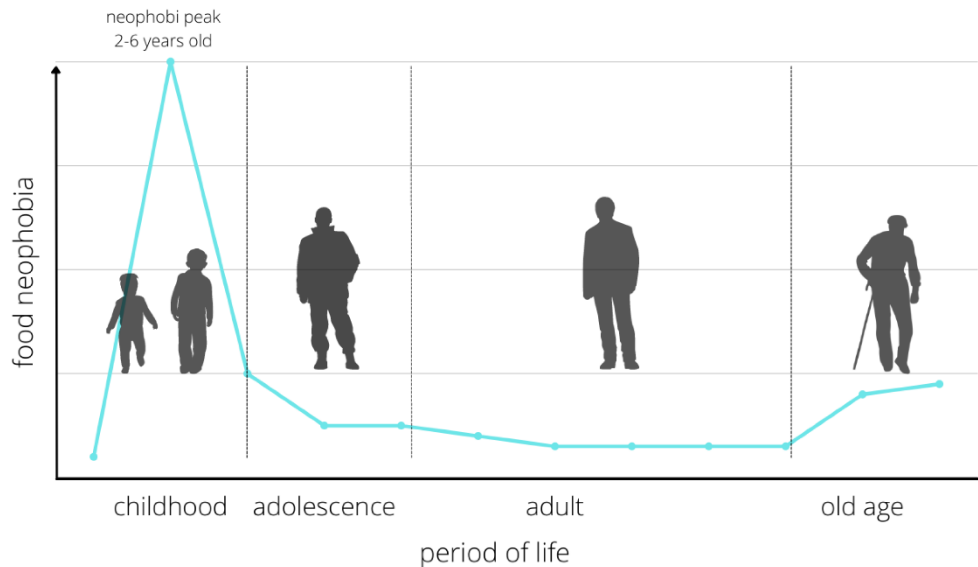


La inhibición de la enzima ECA-I es uno de los principales factores en los tratamientos sobre la **hipertensión**, la **insuficiencia cardiaca**, **enfermedades miocárdicas** y **renales proteinúricas** (Lopez-Sublet et al., 2018).

Diseño de nuevos alimentos con enfoque en el consumidor



Neofobia alimentaria



<https://www.mdpi.com/2072-6643/14/7/1521/htm>

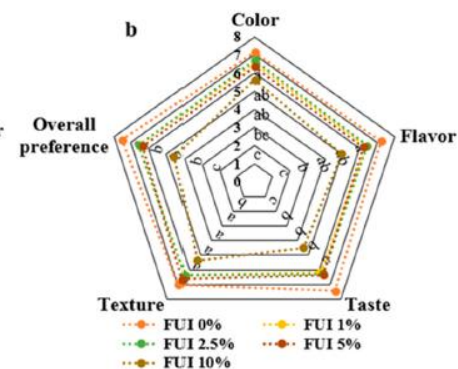
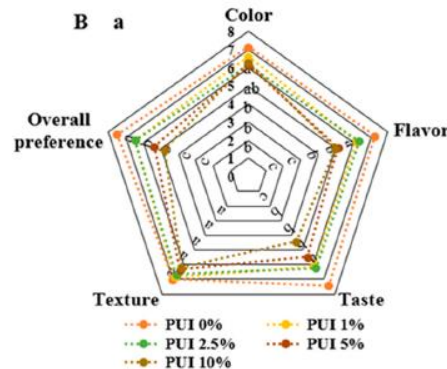
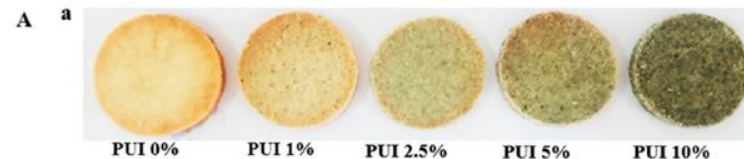
Propiedades sensoriales



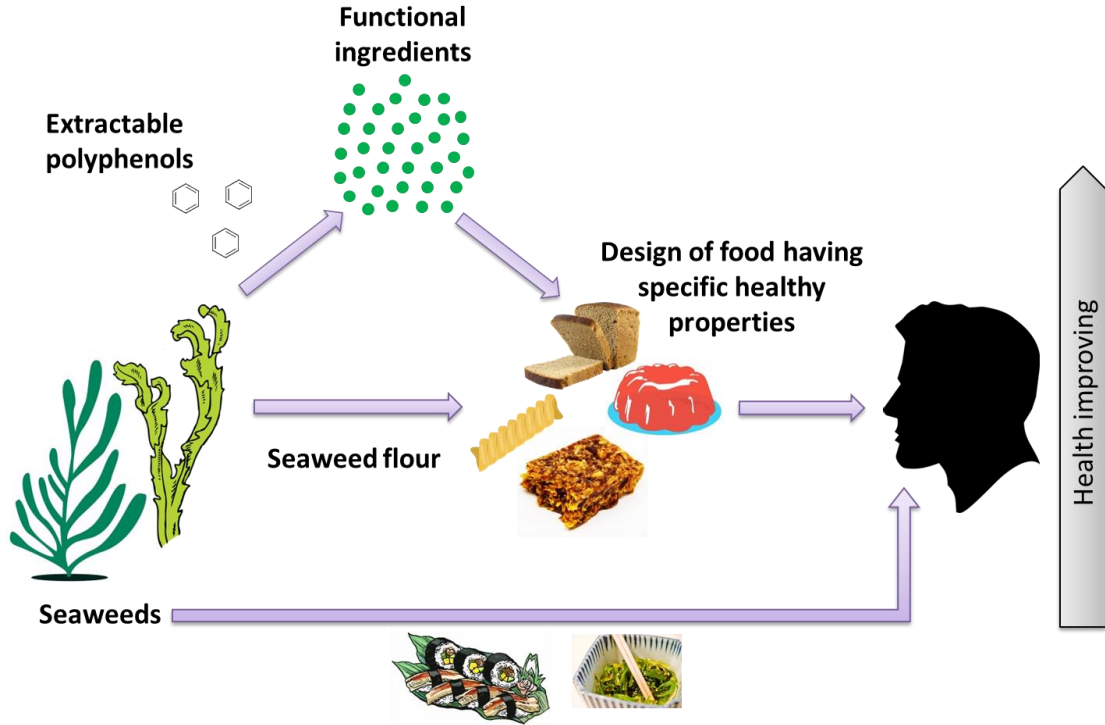
Article

Physicochemical and Nutritional Characteristics of Cookies Prepared with Untapped Seaweed *Ulva intestinalis*: An Approach to Value Addition as a Functional Food

Md. Mohibbullah ^{1,*}, Al Amin ¹, Md. Abu Talha ¹, Md. Abdul Baten ¹, Md. Masud Rana ¹,
 Ashfaq Ahmed Sabuz ², Asif Wares Newaz ¹ and Jae-Suk Choi ^{3,*}



Estrategias para incorporar polifenoles de algas en nuestra dieta.



Direct consumption by incorporation in different dishes

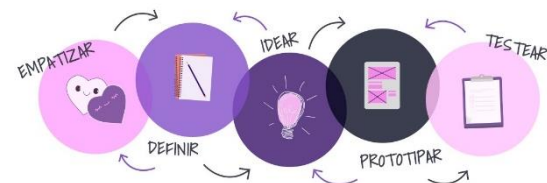
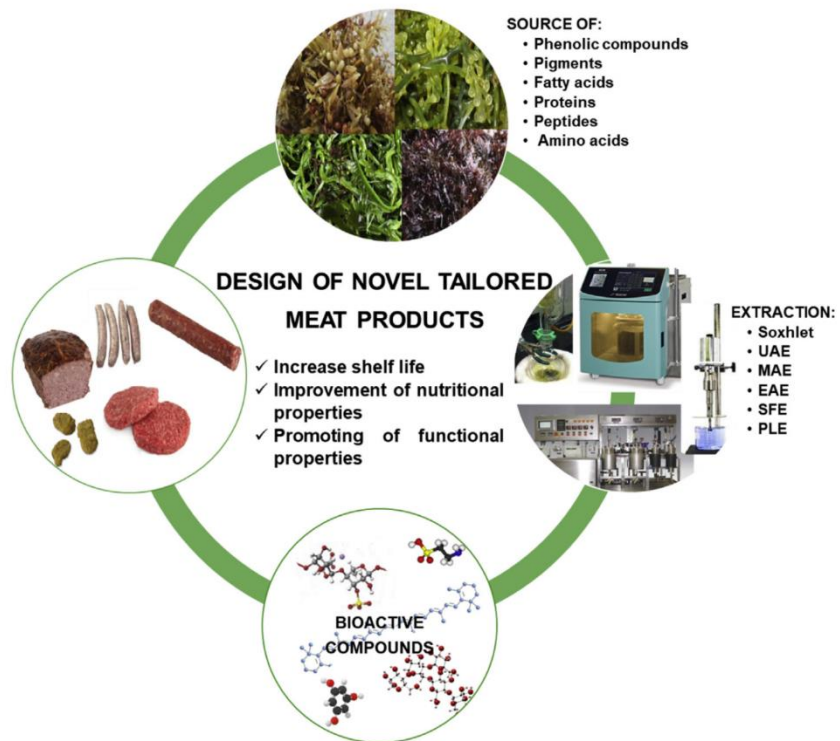
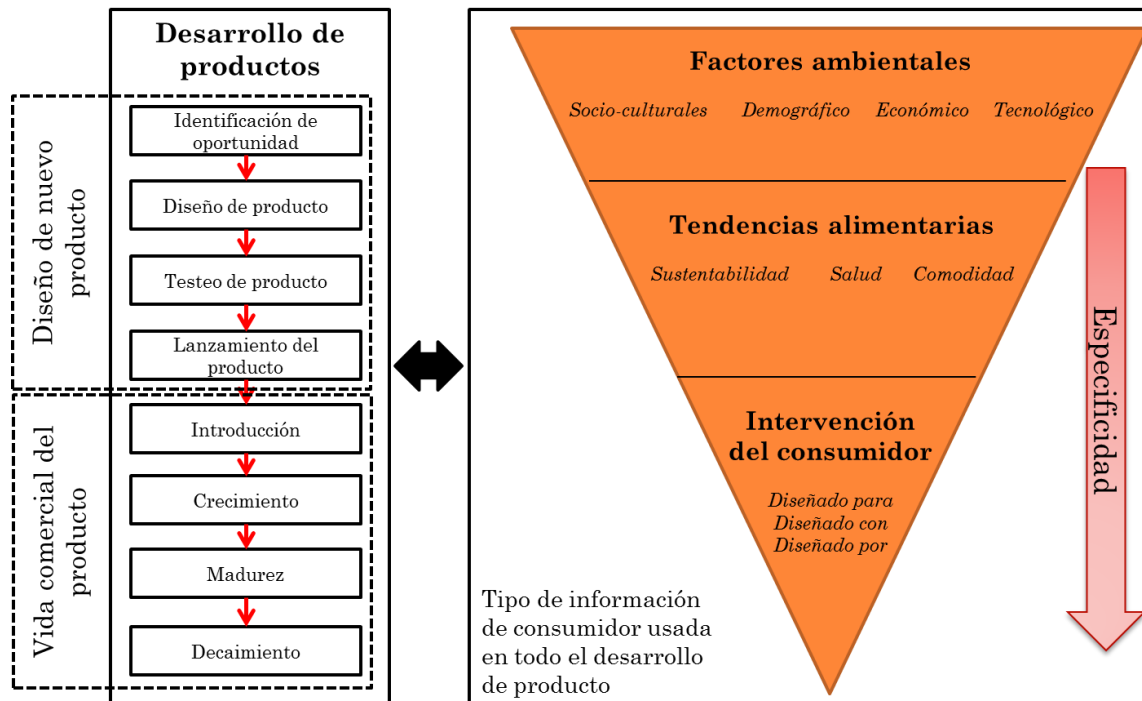
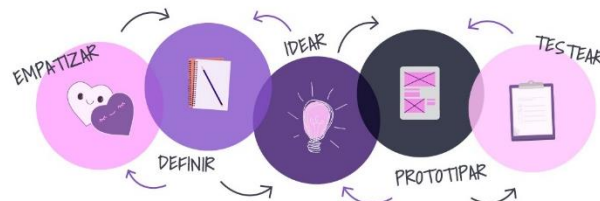
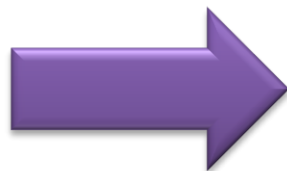


Fig. 2. Overall view of the extraction technologies and applications of seaweeds and their bioactives in meat products.

Diseño de nuevos alimentos con enfoque en el consumidor



Diseño de nuevos alimentos con enfoque en el consumidor





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**¡Muchas
gracias!**



Proyecto "Extracción asistida
por ultrasonido para
desarrollar un ingrediente
con propiedades
anti-enfermedades
relacionadas con la edad a
partir del alga marina
Durvillaea antarctica."

FONDECYT Regular N° 1201670

Contacto:
javier.parada@uach.cl





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