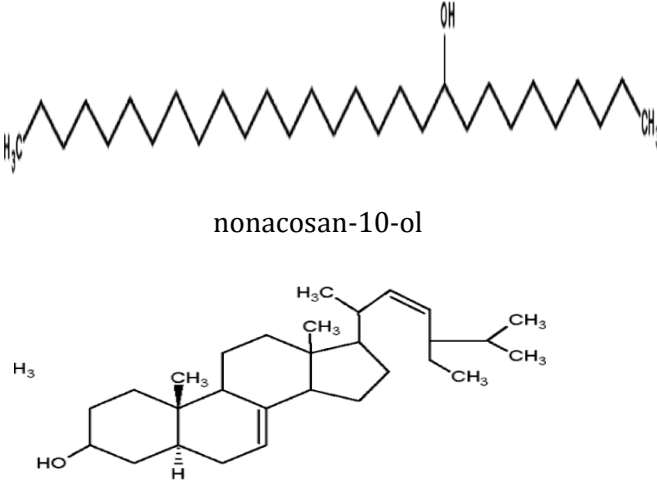
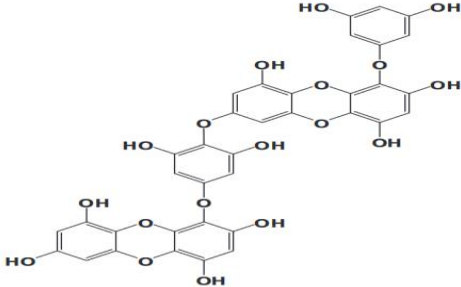
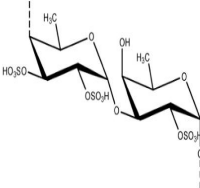
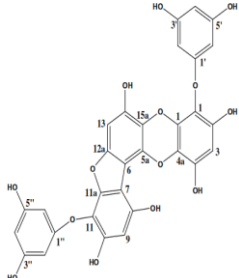
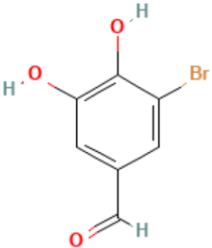
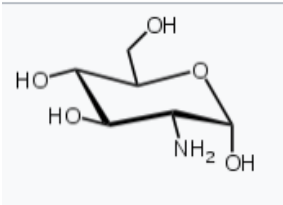

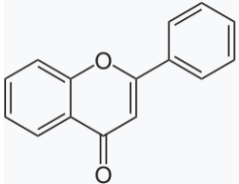
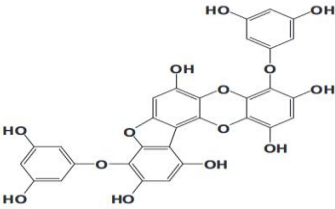
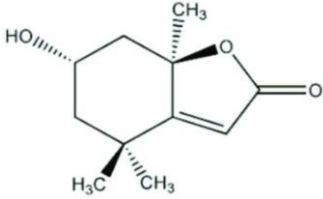
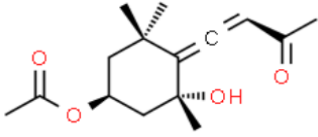
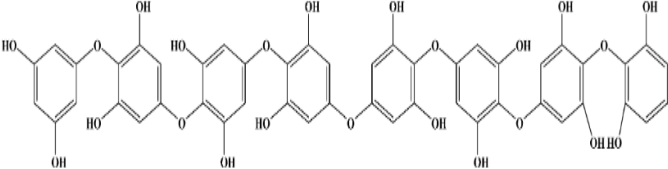
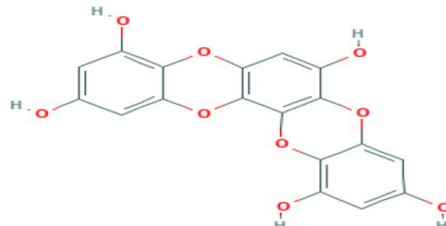
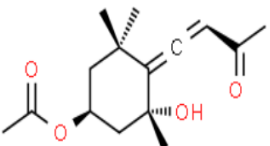
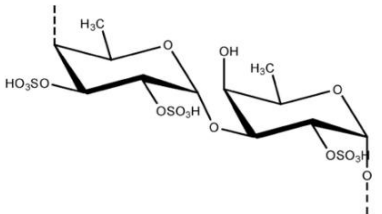
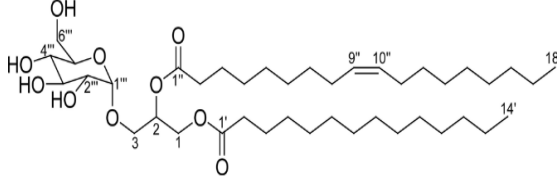


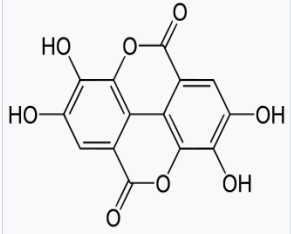
SUPPLEMENTARY FILE

Table 1. Species of algae that have the potential to act as anti-alopecia

NO	Species	Combined content	Reference
1	<i>Laminaria japonica</i> and <i>Undaria pinnatifida</i>	 <p style="text-align: center;">nonacosan-10-ol</p> <p style="text-align: center;">β-sitosterol</p>	(Park, Ki Soo, 2016)
2	<i>Ecklonia cava</i>	<p style="text-align: center;">Dieckol (phlorotannin)</p> 	(Kang, J. Il, Kim, S. C. K. M. K., Boo, H. J., Jeon, Y. J., Koh, S. Y., Yoo, E. S., & Kang, S. M., K. H. K., 2012)
3	<i>Cistanche Tubulosa</i> and <i>Laminaria Japonica</i>	<p style="text-align: center;">Fucoidan</p> 	(Seok, J., Kim, T. S., Kwon, H. J., Lee, S. P., Kang, M. H., Kim, B. J., & Kim, M. N., 2015)
4	<i>Ecklonia cava</i> (APD)	<p style="text-align: center;">phlorofufufoeckol (phlorotannin)</p> 	(Shin, H., Cho, A., Kim, D. Y., Munkhbayer, S., & Choi, S., 2016)

NO	Species	Combined content	Reference
5	<i>Polyphonia tomorrowii</i>	5-bromo-3,4-dihydroxybenzaldehyde (BDB) 	(Kang, J., Choi, Y. K., Han, S., Nam, H., Lee, G., Kang, J., Koh, Y. S., Hyun, J. W., Yoo, E., & Kang, H., 2022)
6	<i>Tunic Ascidian (Halocynthia roretz)</i>	Glycosaminoglycans 	(Neri, T.A, Palmos, G. N., Park, S.Y., Jung. T.S, & Choi, B. D. 2022)
7	<i>Grateloupia elliptica</i>	Bromo- phenol 	(Kang, J. Il, Kim, S. C. K. M. K., Boo, H. J., Jeon, Y. J., Koh, S. Y., Yoo, E. S., & Kang, S. M., K. H. K., 2012)
8	<i>Tetrathelmis tetrathele</i>	Flavonoids 	(Park, S. H., Lee, K. D., Ahn, G., Park, H. J., Choi, K. S., Chun, J., & Shim, S. Y., 2021)
9	Brown Algae Isolate 7-Floroeckol phloroglucinol	7-Phloroeckol, phloroglucinol 	(Bak, S. S., Sung, Y. K., & Kim, S. K., 2014)
10	Brown Alga Loliolida Isolate	Lolliolide 	(Lee. Y.R, Bae. S, Kim. J.Y, Lee. J, Cho. D-Hyun, Kim. Hee-sik, An. In-sook, A. S. & An. S., 2019)

NO	Species	Combined content	Reference
11	<i>Sargassum muticum</i>	apo-9'-fucoxanthinone 	(Kang, J., Yoo, E., Hyun, J., Koh, Y., Lee, H., Ko, M., Ko, C., & Kang, H., 2016)
12	<i>Ishige sinicola</i>	octafllorethol A 	(Kang, J., Kim, E., Kim, M., Jeon, Y., & Kang, S., 2013)
13	<i>Ecklonia cava</i>	Dioxinodehydroeckol 	(Bak, S. S., Ahn, B. N., Kim, J. A., Shin, S. H., Kim, J. C., Kim, M. K., Sung, Y. K., & Kim, S. K., 2013)
14	<i>Undariopsis peterseniana</i>	apo-9'-fucoxanthinone 	(Kang, J. Il, Kim, M. K., Lee, J. H., Jeon, Y. J., Hwang, E. K., Koh, Y. S., Hyun, J. W., Kwon, S. Y., Yoo, E. S., & Kang, H. K., 2017)
15	<i>Sargassum glaucesscens</i>	Fuoidan 	(Huang, C. Y., Huang, C. Y., Yang, C. C., Lee, T. M., & Chang, J. S. 2022)
16	<i>Padina arborescens</i>	1-O-myristoyl-2-O-oleoyl-3-O-(α-D-glucopyranosyl)-glycerol(MOGG) 	(Kang, J. Il, Kim, J., Kim, S. C., Han, S. C., Lee, J. H., Lee, J., Noh, E., Jeon, Y. J., Yoo, E. S., & Kang, H. K., 2020)

NO	Species	Combined content	Reference
17	<i>Grateloupia elliptica</i>	 <p data-bbox="730 472 887 506">polyphenols</p>	(Kang, G. J., Han, S. C., Koh, Y. S., Kang, H. K., Jeon, Y. J., & Yoo, E. S., 2012)
18	Isolated from <i>Ishige okamurae</i>	Difloretol	(Kang, G. J., Han, S. C., Koh, Y. S., Kang, H. K., Jeon, Y. J., & Yoo, E. S., 2012)