

## DAFTAR PUSTAKA

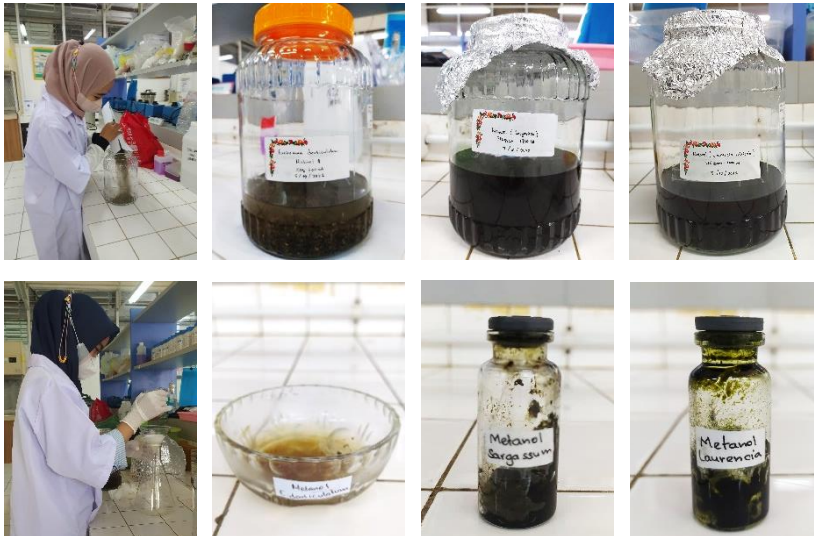
- Agbaje-Daniels, F., Adeleye, A., Nwankwo, D., Adeniyi, B., Seku, F., & Beukes, D. 2020. *Antibacterial Activities of Selected Green Seaweeds from West African Coast*. *Ec Pharmacology and Toxicology*
- Ale M, Meyer A. 2013. *Fucoidans From Brown Seaweeds: An Update on Structures, Extraction Techniques and Use of Enzymes as Tools for Structural Elucidation*. *RSC Advances*, 3(22), pp 8131-8141. doi: 10.1039/c3ra23373a
- Alkhalaf, M. I. 2021. *Chemical Composition, Antioxidant, Anti-Inflammatory and Cytotoxic Effects of Chondrus Crispus Species of Red Algae Collected from the Red Sea Along the Shores of Jeddah City*. *Journal of King Saud University - Science*, 33(1), 101210. <https://doi.org/10.1016/j.jksus.2020.10.007>
- Barbalace, M. C., Malaguti, M., Giusti, L., Lucacchini, A., Hrelia, S., & Angeloni, C. 2019. *Anti-inflammatory Activities of Marine Algae in Neurodegenerative Diseases*. *International Journal of Molecular Sciences*, 20(12), 3061. <https://doi.org/10.3390/ijms20123061>
- Bauer, A. W., W. M. M. Kirby, J. C. Sherris and M. Turck. 1996. *Antibiotic Susceptibility Testing by A Standardized Single Disk Method*. *Amer. J. Clin. Pathol.*, 45 (4): 493 -496.
- Brown, H. E., Huth, N. I., Holzworth, D. P., Teixeira, E. I., Zyskowski, R. F., Hargreaves, J. N., & Moot, D. J. 2014. *Plant Modelling Framework: Software for Building and Running Crop Models on The APSIM Platform*. *Environmental Modelling & Software*, 62, 385398. <https://doi.org/10.1016/j.envsoft.2014.09.005>
- Bungau, S., Abdel-Daim, M. M., Tit, D. M., Ghanem, E., Sato, S., Maruyama-Inoue, M., Yamane, S., & Kadonosono, K. 2019. *Health benefits of polyphenols and carotenoids in age-related eye diseases*. *Oxidative Medicine and Cellular Longevity*, 2019, 1-22. <https://doi.org/10.1155/2019/9783429>
- Christobel, G.J., Lipton, A.P., Aishwarya, M.S., Sarika, A.R., dan Udayakumar, A. 2011. *Antibacterial Activity of Aqueous Extract from Selected Macroalgae of Southwest Coast of India*. *Seaweed Res. Utiln.* 33(1&2): 67-75.
- Corona, G., Coman, M. M., Guo, Y., Hotchkiss, S., Gill, C., Yaqoob, P., Spencer, J. P., & Rowland, I. 2017. *Effect of Simulated Gastrointestinal Digestion and Fermentation on Polyphenolic Content and Bioactivity of Brown Seaweed Phlorotannin-rich Extracts*. *Molecular Nutrition & Food Research*, 61(11), 1700223. <https://doi.org/10.1002/mnfr.201700223>
- Corsetto, P. A., Montorfano, G., Zava, S., Colombo, I., Ingadottir, B., Jonsdottir, R., Sveinsdottir, K., & Rizzo, A. M. 2020. *Characterization of Antioxidant Potential of Seaweed Extracts for Enrichment of Convenience Food*. *Antioxidants*, 9(3), 249. <https://doi.org/10.3390/antiox9030249>
- Cotas, J., Leandro, A., Monteiro, P., Pacheco, D., Figueirinha, A., Gonçalves, A. M., Da Silva, G. J., & Pereira, L. 2020. *Seaweed Phenolics: From Extraction to Applications*. *Marine Drugs*, 18(8), 384. <https://doi.org/10.3390/md18080384>

- De Corato, U., Salimbeni, R., De Pretis, A., Avella, N., & Patrino, G. 2017. *Antifungal Activity of Crude Extracts from Brown and Red Seaweeds by a Supercritical Carbon Dioxide Technique Against Fruit Postharvest Fungal Diseases*. *Postharvest Biology and Technology*, 131, 16-30. <https://doi.org/10.1016/j.postharvbio.2017.04.011>
- Dhargalkar, V. K., & Pereira, N. 2005. *Seaweed: Promising Plant of the Millennium*. Science and Culture.
- El Shafay, S. M., Ali, S. S, El-Sheekh M. M. 2016. *Antimicrobial Activity of Aome Seaweeds Species from Red Sea, Againts Multidrug Resistant Bacteria*. Egypt, *Journal of Aquat. Res.*, Vol. 42, No. 1: 65-74
- Firmansyah, S. B., Firmansyah, R. A., & Hayati, N. 2017. *Antioxidant Activity and Antibacterial Seaweed Methanol Extract (Sargassum Duplicatum J. Agardh) and its Potential as a Natural Preservative Alternative to Salted Eggs*. *Journal Of Natural Sciences and Mathematics Research*, 2(1), 133. <https://doi.org/10.21580/jnsmr.2016.1.1.1648>
- Huangfu, J., Liu, J., Sun, Z., Wang, M., Jiang, Y., Chen, Z., & Chen, F. 2013. *Antiaging Effects of Astaxanthin-rich Alga Haematococcus Pluvialis on Fruit Flies Under Oxidative Stress*. *Journal of Agricultural and Food Chemistry*, 61(32), 7800 -7804. <https://doi.org/10.1021/jf402224w>
- Hudzicki, J. 2016. *Kirby– Bauer Disk Diffusion Susceptibility Test Protocol*. American Society for Microbiology. 1-23.
- Isnansetyo, A., Laili Lutfia, F. N., Nursid, M., T, T., & Susidarti, R. A. 2016. *Cytotoxicity of Fucoidan from Three Tropical Brown Algae Against Breast and Colon Cancer Cell Lines*. *Pharmacognosy Journal*, 9 (1), 1420.
- Joung, E., Kwon, M., Gwon, W., Cao, L., Lee, S., Utsuki, T., Wakamatsu, N., Kim, J., & Kim, H. 2020. *Meroterpenoid-rich fraction of the ethanol extract of Sargassum Serratifolium suppresses collagen-induced rheumatoid arthritis in DBA/1J mice via inhibition of nuclear factor  $\kappa$ B activation*. *Molecular Nutrition & Food Research*, 64(3), 1900373.
- Julianto, T.S. 2019. *Tinjauan Metabolit Sekunder san Skrining Fitokimia*. Fitokimia. Universitas Islam Indonesia.
- Jung, S., Kim, D., Kim, K., Kim, H., Jeong, D., Kang, B., Bark, S., Pak, W., Kim, B., Byun, M., & Ahn, D. 2013. *Inhibitory Effects of Histamine Production in Mackerel Muscle by Medicinal Herbs and Seaweed Extracts*. *Journal of the Korean Society of Food Science and Nutrition*, 42(8), 1263-1269. <https://doi.org/10.3746/jkfn.2013.42.8.1263>
- Kasmiati, K., Yoshioka, Y., Okamoto, T., & Ojika, M. 2018. *New Crambescidin-type Alkaloids from the Indonesian Marine Sponge Clathria Bulbotoxa*. *Marine Drugs*, 16(3), 84. <https://doi.org/10.3390/md16030084>

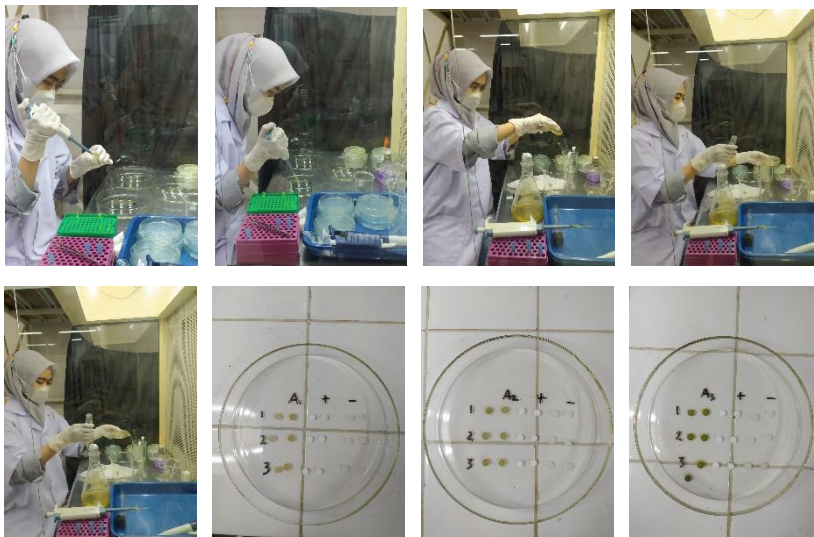
- Klomjit A, Praiboon J, Tiengirim S, et.al, 2021. *Phytochemical Composition and Antibacterial Activity of Brown Seaweed, Padina Australis Against Human Pathogenic Bacteria*. Journal of Fisheries and Environment, 45(1), pp 8-22. ISSN: 26300826
- Mangunwardoyo W, Sophia R, Heruwati E. 2007. *Seleksi dan Pengujian Aktivitas Enzim L-histidine Decarboxylase dari Bakteri Pembentuk Histamine (Selection and Test of L-histidine Decarboxylase Enzyme Activity of Six Isolates of Histamine Forming Bacteria)*. Makara Journal of Science, 11(2), pp 104-109. <http://journal.ui.ac.id>
- Moubayed, N., Al Hourri, H. J., Al Khulaifi, M. M., & Al Farraj, D. A. 2017. *Antimicrobial, Antioxidant Properties and Chemical Composition of Seaweeds Collected from Saudi Arabia (Red Sea and Arabian Gulf)*. Saudi Journal of Biological Sciences, 24(1), 162-169. <https://doi.org/10.1016/j.sjbs.2016.05.018>
- Patel R, Pandya K, Jasrat R. et al. 2017. *Scope of Utilizing Seaweed as a Biofertilizer in Agriculture*. International Journal of Advanced Research. 5(7). pp 2046-2054. doi: 10.21474/ijar01/4941
- Pimentel, F., Alves, R., Rodrigues, F., & P. P. Oliveira, M. 2017. *Macroalgae-derived Ingredients for Cosmetic Industry—An Update*. Cosmetics, 5(1), 2. <https://doi.org/10.3390/cosmetics5010002>
- Santos, A., Valdés, C., Giráldez, F., López, S., France, J., Frutos, J., Fernández, M., & Andrés, S. 2018. *Feed Efficiency and the Liver Proteome of Fattening Lambs are Modified by Feed Restriction During the Suckling Period*. Animal, 12(9), 1838-1846. <https://doi.org/10.1017/s1751731118000046>
- Sukmawati, S. 2021. *Antibacterial Activities of Seaweed (Euचेuma cottonii) Extract Against Escherichia coli Bacteria*. Berkala Sainstek, 9(1), 6. <https://doi.org/10.19184/bst.v9i1.18184>
- Thomford, N., Senthebane, D., Rowe, A., Munro, D., Seele, P., Maroyi, A., & Dzobo, K. 2018. *Natural products for drug discovery in the 21st century: Innovations for novel drug discovery*. International Journal of Molecular Sciences, 19(6), 1578. <https://doi.org/10.3390/ijms19061578>
- Wells, M. L., Potin, P., Craigie, J. S., Raven, J. A., Merchant, S. S., Helliwell, K. E., Smith, A. G., Camire, M. E., & Brawley, S. H. 2016. *Algae as nutritional and functional food sources: Revisiting our understanding*. Journal of Applied Phycology, 29(2), 949-982. <https://doi.org/10.1007/s10811-016-0974-5>

# LAMPIRAN

## Lampiran 1 Ekstraksi Sampel



## Lampiran 2 Persiapan Media dan Bakteri Uji



Lampiran 3. Hasil Uji Aktivitas Antibakteri Ekstrak *E. denticulatum*

Jenis Bakteri	Ekstrak Metanol		Positif (Ciprofloxacin)		Negatif (DMSO)	
	Bening	Halo	Bening	Halo	Bening	Halo
<i>P. aeruginosa</i>	7.1	10.9	11.3	12.5	0	0
	7.4	11.05	12.05	12.8	0	0
	8.05	13.3	11.25	11.9	0	0
	<b>7.52</b>	<b>11.75</b>	<b>11.53</b>	<b>12.40</b>	<b>0.00</b>	<b>0.00</b>
<i>S. aureus</i>	7.6	11.5	9.6	15.2	0	0
	0	8.3	11.3	13.6	0	0
	7.15	10.1	10.5	0	0	0
	<b>6.92</b>	<b>9.97</b>	<b>10.47</b>	<b>9.60</b>	<b>0.00</b>	<b>0.00</b>

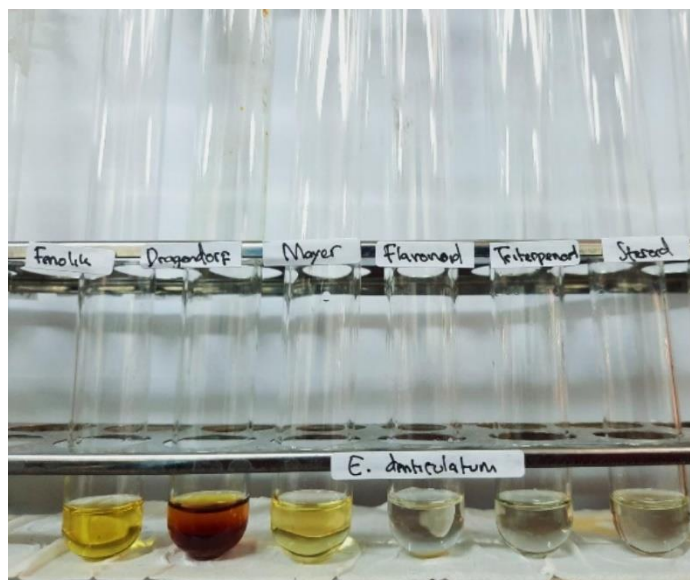
Lampiran 4. Hasil Uji Aktivitas Antibakteri Ekstrak *S. polycystum*

Jenis Bakteri	Ekstrak Metanol		Positif (Ciprofloxacin)		Negatif (DMSO)	
	Bening	Halo	Bening	Halo	Bening	Halo
<i>P. aeruginosa</i>	7.05	10.2	11.8	13.9	0	0
	8.9	10.75	11.35	14.1	0	0
	7.3	11.05	10.05	14.3	0	0
	<b>7.75</b>	<b>10.67</b>	<b>11.07</b>	<b>14.10</b>	<b>0.00</b>	<b>0.00</b>
<i>S. aureus</i>	7.4	9.3	10.25	14.05	0	0
	7.2	8.3	10.7	13.6	0	0
	7.3	8.1	10.5	12.7	0	0
	<b>7.30</b>	<b>8.57</b>	<b>10.48</b>	<b>13.45</b>	<b>0.00</b>	<b>0.00</b>

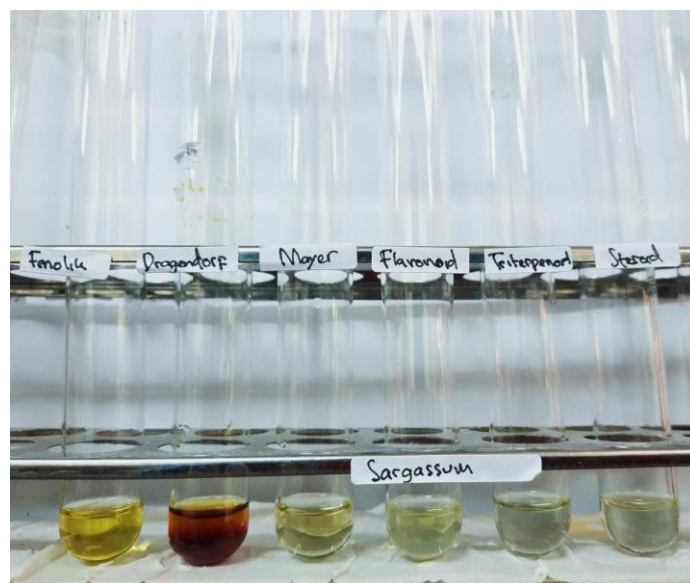
Lampiran 5. Hasil Uji Aktivitas Antibakteri Ekstrak *L. intricata*

Jenis Bakteri	Ekstrak Metanol		Positif (Ciprofloxacin)		Negatif (DMSO)	
	Bening	Halo	Bening	Halo	Bening	Halo
<i>P. aeruginosa</i>	7.7	10.2	11.05	11.8	0	0
	7.7	11.1	11.6	12.5	0	0
	8.1	10.6	10.5	12.9	0	0
	<b>7.83</b>	<b>10.63</b>	<b>11.05</b>	<b>12.4</b>	<b>0.00</b>	<b>0.00</b>
<i>S. aureus</i>	7.4	9.25	10.1	13.2	0	0
	7.2	9.5	10.05	12.5	0	0
	7.7	8.7	10.15	13.05	0	0
	<b>7.43</b>	<b>9.15</b>	<b>10.10</b>	<b>12.92</b>	<b>0.00</b>	<b>0.00</b>

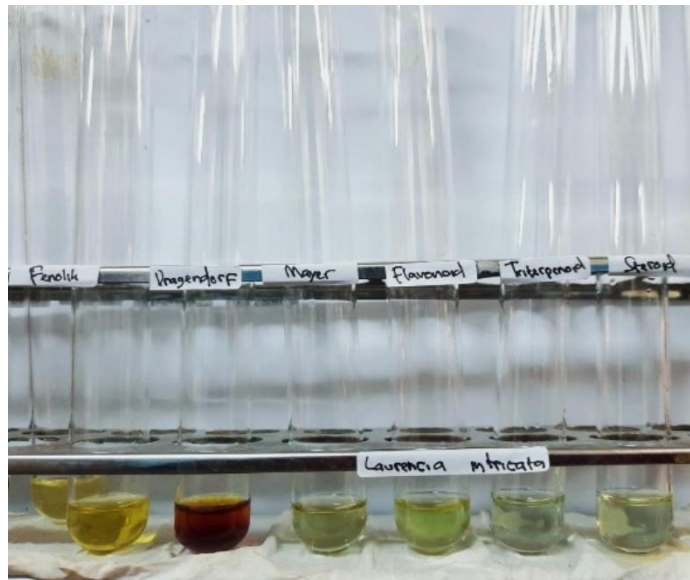
## Lampiran 6. Hasil Uji Fitokimia



**Ekstrak Metanol *E. denticulatum***



**Ekstrak Metanol *S. polycystum***



**Ekstrak Metanol *L. intricata***