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Anticancer compounds from the soft coral *sinularia* sp at waters malalayang and Bunaken Island North Sulawesi-Indonesia

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The availability of new pharmaceutical preparations for anticancer drugs tends to increase every year. A study of anticancer compounds from soft coral *Sinularia* sp. in Malalayang waters and Bunaken Islands has been successfully performed. The purpose of the research and the findings of novelty that is expected in this research is to find and test compounds, anticancer bioaktif from the soft coral *Sinularia* sp in Malalayang waters of Bunaken Island, and determine the characteristics of compound structure anticancer bioaktif soft coral *Sinularia* sp and know how the competition room against the diversity of anticancer bioaktif compounds from the soft coral *Sinularia* sp. Malalayang waters and Islands of Bunaken. The sampling technique was done transectally and the community structure was done underwater photo. 500 gr sample was extracted using 95% ethanol solvent, 1500 ml, then concentrated using a rotary evaporator. The concentrated solution (extract material) was fractionated by its active compound, using Chromatography with column C18; Preparative HPLC and Four Mass Spectrometer transfer. For the elucidation of chemical structures using NMR tools. Toxicity test using breast cancer cells (MCF-7 and T47D) and cervical cancer cells (HeLa cells), while supporting data from environmental aspects; Phosphate, nitrate, nitrite, ammonia, pH and dissolved oxygen were analyzed by HACH-890 and HACH HQ40d spectrophotometers. The result of elucidation of an anticancer active compound of soft corals *Sinularia* sp. is based on the chemical structure of the compound, including in the cembranoid class, and has identified 4 compounds. The four compounds are (1) compounds with the molecular formula C₂₀H₃₀O₄ and m/z 347.2; (2) a compound of the formula C₂₀H₂₈O₅ molecule with m/z 348.19; (3) compounds with the molecular formula C₂₁H₃₂O₄ m/z 349,1400 and (4) molecular compounds C₂₂H₃₂O₅ m / z 376.22. The MTT test (3- (4,5- dimethylthiazole-2-yl) -2,5-diphenyltetrazolium bromide) C₂₀H₃₀O₄ compounds are toxic to cancerous Toxic HeLa cells (IC₅₀) 0.87 mg/l, and 22.9 mg/l T47D cells And 0.99 mg/l MCF-7 cells. Compounds C₂₀H₂₈O₅, IC₅₀ 0.64 mg/l for HeLa cells, 21.1 mg/l T47D cells and 1.02 mg/l for MCF-7 cells, C₂₁H₃₂O₄ compounds, IC₅₀ 0.88 mg/l for HeLa cells, 12.8 mg/l T47D and IC₅₀ 2.87 mg/l for MCF-7 cells, and C₂₂H₃₂O₅, IC₅₀ 0.86 mg/l for HeLa cells, 9.3 mg/l for T47D and 1.62 mg/l cells for MCF-7 cells. The four identified compounds, the C₂₀H₂₈O₅ compound, a new compound, was based on Chemispider data base and marinlite data base 2014. In order to determine the effect of environmental and space competition, the research results show that Malalayang waters have decreased water quality compared to Bunaken waters. Analysis of hard coral cover in Bunaken is higher than that of Malalayang. Changes in water quality and living space from biota, have a high susceptibility to the production of bioactive compounds. The characteristic of rendeman of cembranoid compound from two locations shows the difference, the highest cembranoid rendeman is in Bunaken island..