

Effect of Kelakai (*Stenochlaena palustris*) Extract on Organophosphate Pesticide Exposure: Cytotoxic Studies in Ovo and in Silico

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Abstract	<p>Vegetable farmers in South Kalimantan use pesticides to protect crops from pests. The active ingredient of the pesticide has a broad toxic effect on target and non-target organisms. Continuous exposure to pesticides causes cancer. The plant of mantle (<i>Stenochlaena palustris</i>) is thought to have potential cytotoxic activity against cancer cell growth. The aim of this study was to examine the potential activity of chemical compounds in anaplastic lymphoma kinase (ALK) exposed to organophosphate pesticides in silico and in ovo. The in silico study used molecular docking and virtual screening methods. The methanol extract of malachite was obtained by maceration method. The in ovo study was carried out by injecting pesticide compounds and methanol extracts of methanol at doses of 0.5 and 1 ppm to free-range chicken eggs. The results of the in silico analysis showed that ethion and neophytadiene had the most negative G values, namely -8.62 kcal/mol and -8.39 kcal/mol, while the natural ligand 8 LY A 500 was -9.19 kcal/mol. The similarity of the type and number of residues in the binding complex between ethion and neophytadiene ligands with ALK protein indicates the potential for competition between ethion and neophytadiene when bound to ALK protein. Neofitadiene is suspected as a compound that has potential as anti-cancer by inhibiting the growth of ALK. Anchovy extract is considered to be able to slow down the rate of cell damage in chicken embryos caused by ethion with its inhibitory ability so that the cell surface is not damaged quickly.</p>
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Author	INDAH SETIAWATI, S.P, M.P.