

**Ainni, I, N., 2019. Characterization and Activity Assay of Complex Compound *Fe(III)*-2,4,5- triphenylimidazole against *Dengue Vero Cells* that Infected DENV-3. This study is under guidance of Dr. Sri Sumarsih, M.Si and Harsasi Setyawati, S.Si, M.Si., Department of Chemistry, Faculty of Science and Technology, Airlangga University, Surabaya.**

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### ABSTRACT

Dengue virus infection (DENV) still becoming a serious problem. The dengue virus is transmitted through the *Aedes aegypti* and *Aedes albopictus* mosquitoes found in the tropics and subtropics area. This aims of this study are characterize and investigate the activity of *Fe(III)*-2,4,5-triphenylimidazole complex against Vero cells that infected by DENV-3 virus. Complexes compounds was successfully synthesized by a reacting *Fe(III)* and 2,4,5-triphenylimidazole with mole ratio 1: 1. The results of complex synthesis obtained yellow stem-shaped crystal or solids. The complex absorbs UV-Vis light at a wavelength of 308.5 nm and showed that Fe-N bonding metal-ligand at wave number  $370.33\text{ cm}^{-1}$ . The activity and toxicity of complexes were investigated using the Enzyme-Linked Immunosorbent Assay (ELISA) method and showed  $IC_{50}$  and  $LC_{50}$  values of 98,66  $\mu\text{g/ml}$  and 1231,71  $\mu\text{g/ml}$ . The index selectivity value is 12.48 which indicates that the complex compound composition has a high selectivity and can be used as an anti-dengue candidate.

Keywords : *Fe(III)*-2,4,5-triphenylimidazole, *Vero Cells*, *DENV-3*,  $IC_{50}$ ,  $LC_{50}$ , *Selectivity index*.