Implementasi Metode Simulated Annealing-Support Vector Machine pada Studi QSAR Senyawa Turunan Asam Fusidat sebagai Agen Anti-Malaria

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Abstract

Malaria has caused many cases of death. Malaria is caused by the parasite Plasmodium falciparum. So far a number of drugs and combinations of drugs have been used as anti-malaria. However, this parasite is known to develop resistance to anti-malaria drugs. There are several alternative drugs to treat malaria, one of which is fusidic acid. Fusidic acid is an antibiotic, which works by stopping bacterial growth. Apart from antibacterial activity, fusidic acid also exhibits antiplasmodial activity with an IC50 value. However, this compound is known to have the potential to become a new anti-malaria by optimizing its derivatives. In this study the authors used the QSAR method. To predict the activity of fusidic acid derivatives as anti-malaria agents. The QSAR method has two stages in predicting its activities, namely the feature selection stage here the author uses the Simulated Annelaing (SA) method while in the prediction model development stage, the writer uses the Support Vector Machine (SVM) method. Based on the test results, it can be concluded that using the simulated annealing method and support vector machine can make a prediction model using SVM kernel RBF indicating that the model with the kernel is valid. For further research can use different compounds such as DDD107498.

Keyword : Fusidic Acid, Quantitative Structure Activity Relationship, Simulated Annealing, Support Vector Machine