

**Abstract**

*This study aims to predict adverse drug side effects in Hepatobiliary Disorders case studies. Drugs analyzed with other proteins can cause side effects and 30% of drugs fail at the clinical trial stage due to adverse side effects and lack of efficacy. The benefit of this research is to make predictive models easy, fast, and inexpensive. The research method uses Gray Wolf Optimization for feature selection and is classified using the Support Vector Machine method for model prediction. Optimization uses hyperparameter tuning to improve model performance and validation is carried out using a fusion matrix. Based on the results of the study, the SVM model with an RBF kernel is the best with an accuracy and f1-score of 0.684 and 0.696.*

**Keywords:** *Gray Wolf Optimization, Hepatobiliary Disorders, Prediction, Support Vector Machine*