

# Estimation Algorithm of Butyrylcholinesterase for Cirrhosis using Neural Network

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## Abstract

An estimation algorithm for Butyrylcholinesterase (BChE) in Kochi Medical School Hospital is proposed for early prediction of cirrhosis. It provides automatic calculation of the similarity of input BChE for known learning data constructed by Neural Network, which estimates subsequent value of input value using the similar learning data. The influence for BChE of interferon therapy is considered to determine start day for estimation and to calculate the similarity. Experimental estimation results for real data show that mean difference between the real modeled data and the estimated value is 18.4 in 32 cirrhosis patients and that the proposed algorithm distinguish cirrhosis patients from the other patients. The proposed algorithm constructs learning database automatically and provides early prediction using screening study in hospital.