

## ABSTRACT

Serum Glutamic Pyruvate Transaminase (SGPT) is an enzyme that used as a medical standard to evaluate health of human liver. Current medical standard and the only method for measuring the amount of SGPT is through blood sampling technique known as Liver Function Test (LTF). This thesis introduces a new approach to measure the level on SGPT using body composition and home-used measuring tool. Neural network technique called self-organizing map (SOM) was use as clustering tool and feature extraction tool. National organization known as SizeThialand e-Health provided the fundamental source data. This organization collected the given data during year 2009 to 2010. The algorithm to find related element is start from passing a well-selected parameters among the source data to self-organizing map then observe the result. The prediction model was synthesized by using multi-layered feedforward backpropagation neural network (FFBP). The accuracy of the presented approach is reaching an impressive rate of 91%-97%, depending on the network structure and training features.