

ABSTRACT

Colon is the important organ in the human body. The main function of this organ is to absorb water from feces. There are several types of cancer that can be attack these organs, such as lymphoma and carcinoma. Both types of cancer is a malignant cancer. So if not quickly classified, it will cause death. Conventional disease classification by docters is based on blood and tissue sample preparation. The studies carried out earlier still using a microscope to be seen visually by the human eye. Therefore need to be made a tool that can classify quickly and automatically, in order to obtain an accurate analysis and evidence.

In this paper will be simulated in classifying the type of colon cancer. As the input is a sample image of the colon which will be preprocessing. The image will be changed prior to grayscale image before it goes into the ANN. The next process will performed by statistical feature extraction which will then be followed by a Backpropagation neural network as the classification application.

From the test results can be concluded that the backpropagation neural network is able to classify the test data at 73,0833% for the data type 1 with the parameters used by the ANN at the time of processing are epoch 500, learning rate 0.5 and 20 hidden layer neurons with time of preprocessing and feature extraction for 0,1027 seconds, ANN training time for 68,0613 seconds, and time for testing ANN 0,0134 seconds. While for the data type 2, backpropagation neural network able to classify the test data at 83,33% with the parameters used are epoch 4000, learning rate 0,001 and 80 hidden layer neurons with time of preprocessing and feature extraction for 0,1051 seconds, ANN training time for 430,8341 seconds, and time for testing ANN 0,0217 seconds. In this case, the good data are used as inputs for ANN are skewness, entropy, energy (ASM) and homogeneity (IDM) for the data type 1. Contrast and variance for data type 2.

Keywords : colon, lymphoma, carcinoma, statistical feature extraction, backpropagation