

ABSTRACT

Human's blood cell membrane have any blood type antigen called agglutinin. There are two types of antigen that may cause reaction of blood transfusion, that is ABO and Rh system. To prevent transfusion reaction (haemolysis and agglutination) between donor and recipient on blood transfusion, hence we should do blood type inspection between donor and recipient. Agglutination process can be perceived visually through microscope. On medical of forensic and to handling hospital database, it is needed an accurate blood type inspection.

On this project, it had been made an application program which can recognize the image of blood type clotting pattern by backpropagation artificial neural network. Blood type clotting pattern had been gotten from some blood drip dropped by reagen. This blood type clotting pattern could be taken its image so that it can be analyzed. This image will be processed to gray scale image, then it can be processed by edge detection. The image result of the edge detection process was used as input of blood type detection application program. Backpropagation artificial neural network was used as recognized method of blood type clotting parameter. So that it could be obtained some conclusions of that blood type image.

Analysis was held by various edge detection input and using backpropagation neural network with gradien descent learning method that have 20 neuron hidden layer and 1 neuron output layer with 0,1 of learning rate. With that analysis had been gotten 100% performance to recognize the new blood type clotting pattern which did not include on network learning processes. That performance got from network learning process, so that got network with best network performance, that is with smallest value of MSE.

Keywords : blood type, agglutinin, backpropagation artificial neural network.