

P16

Study The Nicotine Exposure Towards Human Blood

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ABSTRACT

Smoking is known as one of the leading cause of premature death. It is also a major cause that leads to mortality and morbidity like cancer and cardiovascular diseases. Based from the previous research, the effects can be seen when blood was taken directly from a smoker when examined by using FTIR and AFM. In this research, it emphasize the findings from the previous research about the effects of nicotine exposure which was to prove does nicotine induce haemolysis, to investigate the effects of 3 different nicotine levels on blood and to study the structure of erythrocytes before and after the exposure. Blood sample was taken to be exposed to 3 different types of cigarette which were Winston Red, Winston Green and Winston Blue with different levels of nicotine in them. FTIR, AFM, UV-VIS and microscopic study using Meiji Microscope were used. The findings from the AFM and microscopic study indicate that smoking lead to changes on the blood like potholes on the surface, swelling of shapes, darkened the red blood cell membranes, rupturing of erythrocytes or haemolysis. While UV-VIS shows the presence of NADH and FAD in the plasma are twice in concentration than the control plasma. It proved that the average life span of red blood cell for smoker is less than the non-smoker's as the red blood cell is in their abnormal shapes.

Keywords: Nicotine; Cigarette; Erythrocyte; Effects