

Photoinduced neutrophil extracellular traps

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NETosis is a programmed cell death which occurs in response to various types of stimuli. Nowadays, studies devoted to the investigation of photoinduced NETosis activated predominantly by ultraviolet (UV) radiation are becoming increasingly important. This work is devoted to the study of the activation of neutrophils at two wavelengths to cause photoinduced NETosis at three different doses of radiation (4, 16, 32 J/cm^2). Phorbol 12-myristate 13-acetate (PMA) used as a positive control for activation. We proposed that cytochromes are the prime photoacceptors of light sources. Cytochromes trigger the whole the descending chain, starting with the activation of ROS generation and ending with the released extracellular traps. Cytochromes are part of NADPH oxidase and granulocyte mitochondria. Application of selective inhibitors showed that under the influence of exposure of two wavelengths undergoes a mechanism of NETosis through two signaling pathways.

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