

MicroRNA Expression Distinguishes Neutrophil Subtypes

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Abstract : Neutrophils are the most abundant innate immune cells to against invading microorganisms. Numerous data shown neutrophils have plasticity in response to physiological and pathological conditions. Tumor-associated neutrophils (TAN) exist in distinct types of tumor and play an important role in cancer biology. Different transcriptomic profiles of neutrophils in tumor and non-tumor samples have been identified. Several miRNAs have been recognized as regulators of gene expression in neutrophil, which may have key roles in neutrophil activation. However, the miRNAs expression patterns in TAN are not well known. To address this question, magnetic bead isolated neutrophils from tumor-bearing mice were used in this study. We analyzed production of reactive oxygen species (ROS) by luminol-dependent chemiluminescence assay. The expression of miRNAs targeting NADPH oxidase, ROS generation and autophagy was explored using quantitative real-time polymerase chain reaction. Our data suggest that tumor environment influence neutrophil develop to differential states of activation via miRNAs regulation.

Keywords : tumor-associated neutrophil, miRNAs, neutrophil, ROS

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