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Engulfment and degradation of apoptotic cells, and its failure

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Abstract

Everyday several billions of cells undergo apoptosis in our bodies. They are swiftly engulfed by macrophages for degradation. More than 10 billions of red blood cells are produced everyday. During erythropoiesis, nuclei are expelled from erythroid precursor cells and engulfed by macrophages. The failure of this process, the engulfment and degradation of apoptotic cells and nuclei, causes systemic lupus erythematosus (SLE)-type autoimmune disease and strong inflammation accompanied by anemia and polyarthritis. In this project, we will study the molecular mechanism how the inefficient engulfment and degradation of dead cells and nuclei cause the autoimmune disease and inflammation.