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**Complement Activation in the Context of Stem Cells and Tissue Repair**

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**Abstract**

The complement pathway is best known for its role in immune surveillance and inflammation. However, its ability of opsonizing and removing not only pathogens, but also necrotic and apoptotic cells, is a phylogenetically ancient means of initiating tissue repair. The means and mechanisms of complement-mediated tissue repair are discussed in this review. There is increasing evidence that complement activation contributes to tissue repair at several levels. These range from the chemo-attraction of stem and progenitor cells to areas of complement activation, to increased survival of various cell types in the presence of split products of complement, and to the production of trophic factors by cells activated by the anaphylatoxins C3a and C5a. This repair aspect of complement biology has not found sufficient appreciation until recently. The following will examine this aspect of complement biology with an emphasis on the anaphylatoxins C3a and C5a.

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