# Use of CpG Oligodeoxynucleotides to Encourage Angiogenesis

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## Technology description

## Summary

This invention relates to the field of angiogenesis, more specifically to the use of CpG oligonucleotides to promote angiogenesis. Angiogenesis, the process of developing a hemovascular network, is essential for the growth of solid tumors and is a component of normal wound healing and growth processes. It has also been implicated in the pathophysiology of atherogenesis, arthritis, corneal neovascularization, and diabetic retinopathy. Angiogenesis factors play an important role in wound healing and likely play a role in the development of malignancies; hence, it would clearly be advantageous to identify new angiogenic agents.
CpG oligodeoxynucleotides (ODNs) express a wide range of biological activities. They are potent vaccine adjuvants, anti-allergens, and trigger a protective innate immune response. Several recent reports indicate that CpG ODN also stimulate cells of the central nervous system. Although CpG ODN have many potential uses, their potential to induce angiogenesis has not been previously recognized. The inventors have shown that bioactive CpG motifs induce dose-dependent neovascularization in the corneas of mice. The invention claims methods for stimulating angiogenesis using CpG ODNs, methods for inducing the production of VEGF (Vascular Endothelial Growth Factor) using CpG ODN, and a model system for screening potential anti-angiogenic agents.

## Institution

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