Vitamin E inhibits proliferation of human Tenon's capsule fibroblasts in vitro

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Failure of glaucoma surgery is mostly due to fibrocellular scar formation, derived from Tenon's capsule fibroblasts. In high-risk cases, postoperative Tenon's capsule fibroblast proliferation is inhibited by mitomycin C or 5-fluorouracil. Toxicity to other ocular cell types and the risk of ocular hypotony limits the use of these agents. We have found that d-alpha-tocopherol (vitamin E) was able to inhibit proliferation of in vitro human Tenon's capsule fibroblasts obtained from seven different donors. At 48 h, inhibition of cell proliferation was 30-78% (mean 60%) for 50 microM d-alpha-tocopherol and 46-97% (mean 77%) for 100 microM d-alpha-tocopherol. This inhibition was statistically significant. No cytotoxic effects were observed.

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