

Characterization of Epithelial Growth Factor Transcripts Identified in *Crotalus Atrox* Venom

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Keywords: Epithelial Growth Factor, fibroblasts, cancer, cellular pathways, transcripts, bacterial clones

Epithelial Growth Factor (EGF) is the primary source in regeneration and stimulation of essential fibroblasts cells commonly found in epithelium. Studies have shown that snake venom components are becoming a growing factor in treating illnesses such as cancer, muscular dystrophy, chronic pain, blood pressure, blood clotting, etc. EGF in human cells contains a promising quaternary structure that can bind to snake venom metalloproteinases, proposing a means of activating biochemical responses through protein-protein interactions to regulate unwanted cellular functions. This supports promising research in achieving a greater understanding of regulation along cellular pathways through ligands, increasing the likelihood of targeting unwanted cellular growths (cancer), treating epithelial injuries, enhance pharmaceutical advancements, etc. The purpose of this study was to identify specific transcripts originating from snake venom. We cloned and retrieved the transcripts of EGF from the venom of Western Diamondback Rattlesnake (*C. atrox*). *C. atrox* carries a toxin that is known to carry Epidermal Growth Factor (EGF), a protein found in its venom. Messenger RNA from *C. atrox* crude venom was reverse-transcribed into cDNA and was further subjected to RT-PCR. The amplicons were purified from agarose gel and ligated into a pJET vector to obtain recombinant DNA found in bacterial colonies. **At least three unique snake venom EGF transcripts were obtained after screening 23 bacterial clones using gel electrophoresis by molecular size and enzyme digestion patterns.** More research would be essential to discovering protein-protein interactions that benefit treatments of illnesses and injuries along epithelium.