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What is Bystander Effect and Bystander Protein

AdIFN- α 2b (Instiladrin, nadofaragene firadenovec, Adenoviral vector expressing interferon protein α 2b) is in FDA Pending FDA approval on New Biologic Gene therapy. During its pre-clinical and Phase I study, Dr William Benedict lab observed “AdIFN- α Bystander Effect”. When infected with AdIFN- α 2b, tumor cells and normal urothelial (NHU) cells can produce soluble bystander factors, which are toxic to various cancer cells (bladder cancer, breast cancer, lung cancer and prostate cancer). This potent bystander factor(s) can be found in conditioned medium (CM) obtained from AdIFN- α 2b infected cells. This toxicity is specifically and unique to cancer cells, but not to normal cells.

During 2001-2017, Dr Benedict lab had used several approaches to identify these bystander factors. Initial work had proved those factors are heat sensitive indicating they are proteins. Our hunting efforts involved iTRAQ, FPLC, Proteomics, siRNA, RACE cDNA cloning, RNAseq technologies, and found it very difficult to clone this protein. We found AssisiCare LLC to develop this/these unique protein(s) on 2020.

Publication on Bystander Effect

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