RelA proteases Targeting NF-κB for Cancer Treatment

OCR Number: OCR 6788

Description:

**Bacterial Proteases for Treatment of Cancer or Inflammation**

- **Background:** The NF-κB family of transcription factors plays an essential role in inflammation and in many steps of cancer initiation and progression. The most important members of this family are the transcription factors RelA (p65) and RelB.

- We discovered a family of highly related type III secretion effector protein of *Salmonella typhimurium*, PipA, GogA and GtgA, that are highly specific proteases directed to RelA and RelB.

- We propose that these proteases could serve as highly specific inhibitors of the NF-κB pathway and therefore can be used to counter inflammation or to treat many forms of cancer.

- **IP status:** PCT/US2016/062541.

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HEK293T cells were transfected with a plasmid encoding a NF-κB reporter construct along with 25 or 50 ng of a plasmid encoding PipA, GtgA or GogA. Eighteen hours after transfection, cells were treated with TNFα (10 ng/ml) or infected with the ΔpipA, ΔgogA, ΔgtgA S. Typhimurium at a MOI = 5 and the reporter activity was measured 8 hs after treatment. Data are shown relative to the activity of the reporter in uninfected control cells and represent the mean ± standard deviation of three independent measurements.