Case #550

Gamma Delta T Cell Adjuvant and Ligands for Cancer

Gamma delta (γδ) T cells function at the interface between the innate and adaptive immune systems and can be harnessed to augment the immune response to cancer and infectious disease. By combining a capase inhibitor with a cancer antigen, this cancer specific adjuvant composition can produce a γδ driven immune response expanding the T cell response to that cancer. These methods can also be used to promote immune responses against infectious disease agents, especially those agents that induce long term chronic infections, such as Lyme disease. Based on this work, an unbiased system has identified ligands of the γδ T cells, which will offer additional and more specific methods of γδ manipulation.

Applications:

- Cancer and infectious disease immunotherapy adjuvants.

Advantages:

- Captures cellular stress via induced cell death to augment the adaptive response.
- Expands the spectrum of T cell response to cancer and infectious disease.
- Cancer specific compositions can provide personalized adjuvants.

Intellectual Property and Development Status:

US Patent No. 9,925,230; US Non-Provisional Application US20180169178A1
Looking for research and development collaboration with an *in vivo* model of flu and licensing opportunities.

References:

Necroptosis of Dendritic Cells Promotes Activation of γδ T Cells. Collins C *et al* PMC5002261

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