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Synthetic QS-21 and Rationally Designed QS-21 Analogs

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Currently, an important lead investigational adjuvant for many recent candidate vaccines against infectious diseases, cancer, and Alzheimer's disease is a semi-purified plant extract from the bark of Quillaja saponaria which is found in the desert regions of Chile, Bolivia, and southern Peru. This extract comprises a mixture of saponins (soluble triterpene glycosides). Despite challenges in production and quality control, one component from this extract, known as QS-21, has exhibited superior adjuvant properties for a range of antigens. Indeed, QS-21 has been widely used in over 100 clinical studies involving ~16,000 people. Triterpene Saponin Synthesis Technology (TriSST™) is the proprietary platform chemistry of Adjuvance Technologies that has resulted in the synthesis of a diverse portfolio of novel compounds that possess significant adjuvant activity with a desirable tolerability profile. For the first time, TriSST provides a commercially viable source for vaccine manufacturers of the *active* saponin compounds within the plant-derived extract known as QS-21. As an extract from the Soap Bark tree, QS-21, the world's leading investigational vaccine adjuvant candidate, is extremely difficult to procure due to low yields with variable and unpredictable impurity profiles. TriSST permits for the first time, the large-scale synthesis of highly pure materials for human use via our SAPONEX™ adjuvant. The application of TriSST by Adjuvance Technologies has also resulted in the synthesis of over fifty (>50) proprietary adjuvant molecules in our TiterQuil™ family of adjuvants, which exhibit improved *in vivo* efficacy, efficiency and tolerability.

Biography

Jeffrey is CEO and Founder of Adjuvance Technologies. Prior to the formation of Adjuvance Technologies, he has spent close to a decade in the Molecular Pharmacology and Chemistry Program at Memorial Sloan-Kettering Cancer Center. His research focuses on mitochondrial biology in cancer, as well as novel therapeutics, adjuvants and screening methods. Jeffrey obtained his BSc in Biological Sciences and Chemistry before earning his Masters in Business from NYU in Corporate Finance, Entrepreneurship & Innovation, and Equity Instruments & Markets. Jeffrey has published numerous papers in scientific journals and co-authored review articles and textbook chapters.