agenusnews

Vol. 2, Issue 8 • May 13, 2019

Agenus Innovates Novel Technology for QS-21 Production

Agenus' proprietary QS-21 Stimulon® is one of the most potent adjuvants known. It is derived from a saponin extract of the Chilean soap bark tree. QS-21 Stimulon is a key component of GSK's shingles vaccine, Shingrix®, which is the dominant current shingles vaccine with over 90% efficacy. QS-21 Stimulon adjuvant is also included in the adjuvant system of the first malaria vaccine, Mosquirix®. Importantly this potent adjuvant is a key component of all of Agenus' neo-antigen vaccines.

Shingrix Revenues Exceed $1B in First Year of Launch

23 October 2017

Shingrix approved in the US for prevention of shingles in adults aged 50 and over

Pooled clinical trial results showed > 90 percent efficacy across all age groups

Overwhelmed by Shingrix demand, GSK plots $100M vaccine manufacturing boost

by Eric Sagonowsky | Apr 24, 2019 11:58am

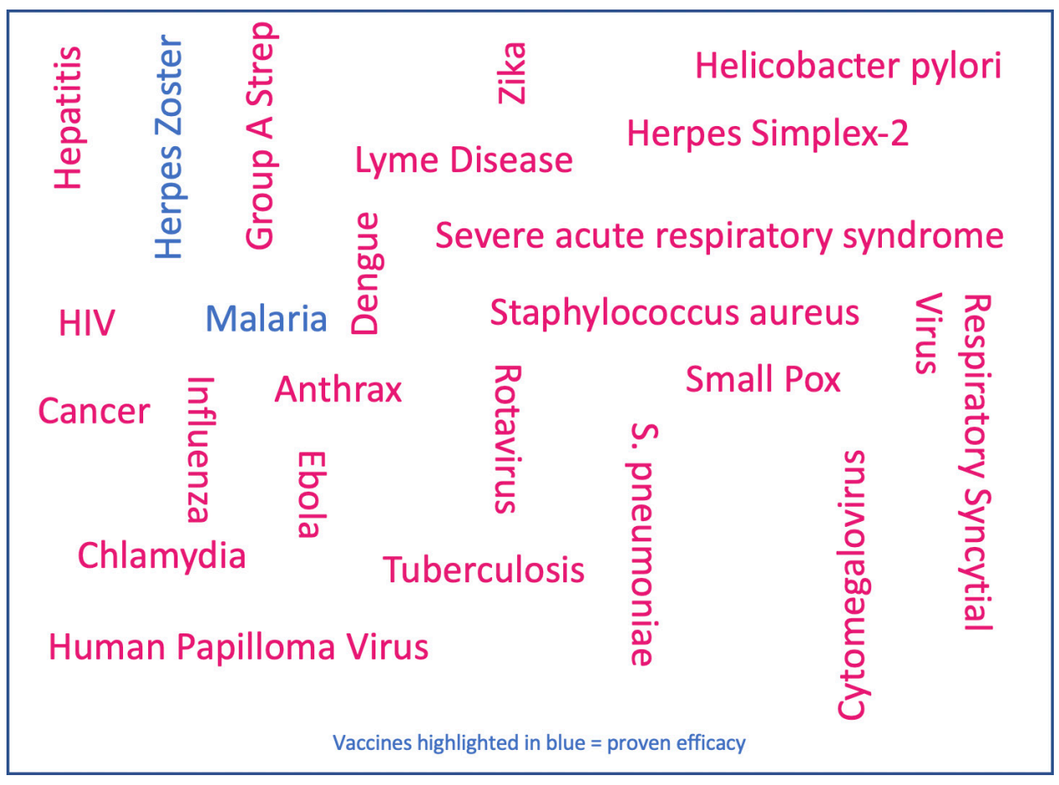
Mosquirix is the World's First Malaria Vaccine

What Makes QS-21 a Potent Adjuvant?

QS-21 Stimulon improves a vaccine's effectiveness by significantly boosting the immune response through multiple mechanisms described here:

- QS-21 induces an influx of immune cells that interact with the vaccine's antigens, thereby promoting adaptive immune responses.
- QS-21 can induce antibody responses. Antibodies can bind pathogens in the blood and prevent them from infecting cells.
- QS-21 can induce CD8+ T cell responses. CD8+ T cells can kill tumor cells and cells that are infected with pathogens.
- QS-21 can also induce CD4+ "helper" T cell responses. CD4+ T cells activate multiple tumor- and pathogen-killing mechanisms.

QS-21 could play a critical role in the prevention and treatment of many diseases



The Future of QS-21

Agenus Receives Grant from Bill & Melinda Gates Foundation to Pursue Next-generation Innovations

Investors | Agenus News

Agenus Awarded Grant to Enable QS-21 Innovations

- Bill & Melinda Gates Foundation invests ~$1M to develop novel technology for QS-21
- Grant to develop an alternative, novel plant cell-culture based method for QS-21 production

QS-21 has already made a significant positive impact on global health by empowering vaccines designed to fight infectious disease. Considering the global importance of QS-21 supply, Agenus is committed to ensuring its sustained delivery to the global vaccines market. To accomplish this, Agenus and its exclusive partner, Phyton Biotech, are developing an innovative manufacturing process for QS-21. This mission is supported by a grant of ~$1M recently awarded to Agenus by the Bill & Melinda Gates Foundation.

This "next-generation" method of producing QS-21 is aimed at providing a consistent and plentiful source of QS-21 and potentially other QS based adjuvants.

Currently, QS-21 is extracted from Chilean soap bark trees, exclusively found in a single region of Chile. In an effort to develop a more sustainable process that is independent of any specific geography, The Gates Foundation grant is aimed at developing an alternate, cell-culture based technology for QS-21 production in an effort to ensure a continuous future supply of this adjuvant.

Today

Transformation

The Future

Traditional Method
From Chilean Soap Bark Tree

Plant cell culture solution

Agenus recognizes the value of QS-21 and the importance of a consistent and sustainable supply of QS-21 to power vaccines across the world. This unique collaboration is driven by a collective commitment to bringing innovation in healthcare for the improvement of global health.