



An ABF Ingredients Company

Valens™ QS-21 XP

Saponin-based Vaccine Adjuvants
and Delivery Systems



Q-VANT
BIOSCIENCES™

Valens™ QS-21 XP is purified QS-21 fraction, collected from scalable and sustainable biomass source. Today, QS-21 is a vital component in three FDA or WHO approved vaccines: Mosquirix® (Malaria), Shingrix® (Varicella-Zoster), Arexvy® (RSV), and in multiple human vaccine candidates.

Potent immune protection

QS-21 is backed by over 35 years of scientific validation and remains a leadin candidate for the development of new vaccines. QS-21 possesses a cross-cutting activating effect on key cell populations involved in the immunization process [1-3] resulting in a strong antibody and cell mediated response [4, 5]. This dual adjuvant effect on the adaptive immune response greatly increases the likelihood of vaccine efficacy.

QS-21 enhances the immunogenicity of proteins, glycoproteins, and polysaccharide antigens in several animal models [6]. QS-21 is incorporated in vaccine developments against infectious [2], neurodegenerative [2] and cancer [7] diseases (melanoma, brain, breast, ovarian and lungs) in the form of immunotherapeutic vaccines.

In antigen presenting cells, QS-21 stimulates activation [3], antigen uptake [8], processing [9] and cross-presentation via MHC-I to naive CD8+ T cells enhancing the formation of CTLs [4, 5]. QS-21 activates T cells directly through CD2 receptor stimulation that in turn promotes secretion of Th1 profile cytokines [10].

QS-21 has been studied and tested in over 120 clinical trials involving approximately 50,000 patients as both a standalone adjuvant and formulated in adjuvant systems. Vaccines containing QS-21 are used to prevent difficult diseases such as malaria, which it was previously not possible to develop effective vaccines against.

Valens™ QS-21 XP vs QS-21 benchmark (bark-derived)

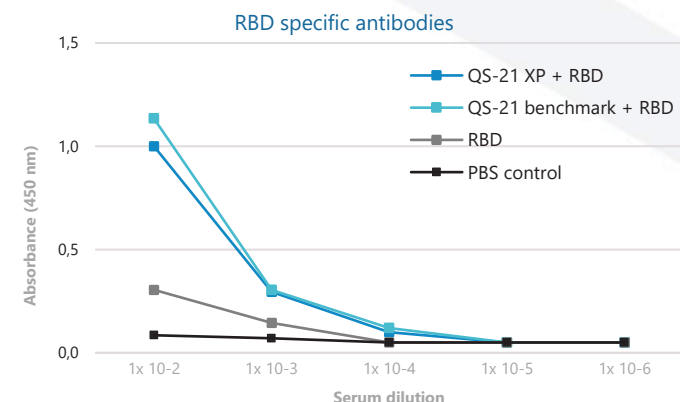


Figure 1. Levels of specific RBD antibodies in the serum of previously vaccinated mice. All RBD specific IgG antibodies indicate high reactivity against RBD antigen, showing no statistically significant difference between QS-21 XP and benchmark QS-21.

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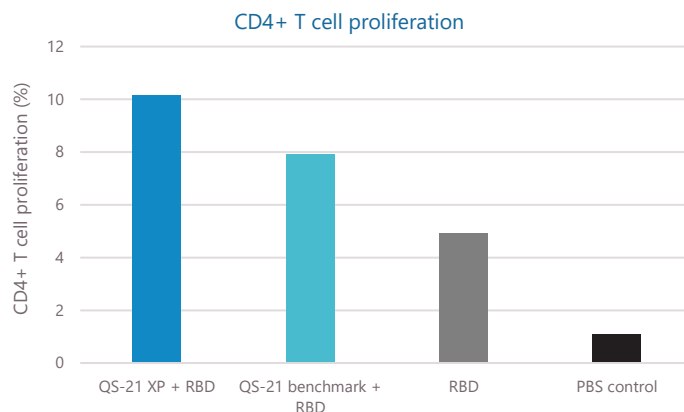


Figure 2. CD4+ T cell proliferation rates pulsed 5 days with RBD. The percentage of T cell expansion is increasing for both QS-21. This means that in vaccinated mice there are different abundances of RBD-sensitized memory T cells capable of responding by clonal expansion to a new encounter with the antigen. QS-21 INFINITY resulted in a higher proliferation of CD4+ T cells than QS-21 Benchmark (p ≤ 0.05).

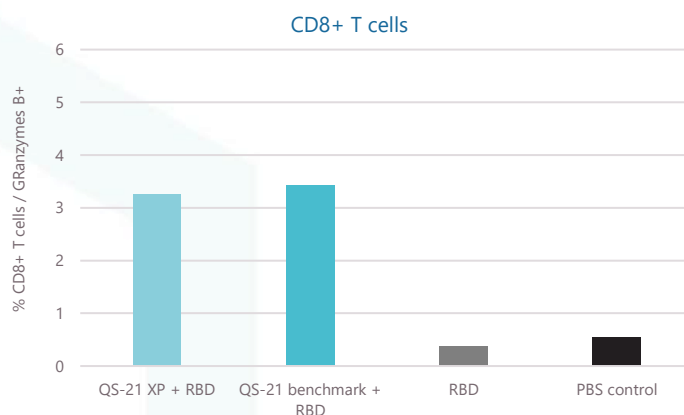


Figure 3. Intracellular expression levels of granzyme B in CD8+ T cells from splenocyte culture pulsed 6 hours with RBD antigen. No significant differences were observed between both QS-21

Scalable and robust supply chain

- Our proprietary Q-SAP process ensures high purity and quality QS-21, escalating the potential for sustainable supply resulting in a possible annual production capacity exceeding 20 billion vaccine doses.
- Valens™ QS-21 XP is obtained from multiple sources of biomass, like regenerative pruning of *Quillaja saponaria* trees.
- Valens™ QS-21 XP is manufactured in Chile in compliance with certified Good Manufacturing Practices (EXCiPACT).

Request evaluation samples to explore QS-21 XP in your pipeline.

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