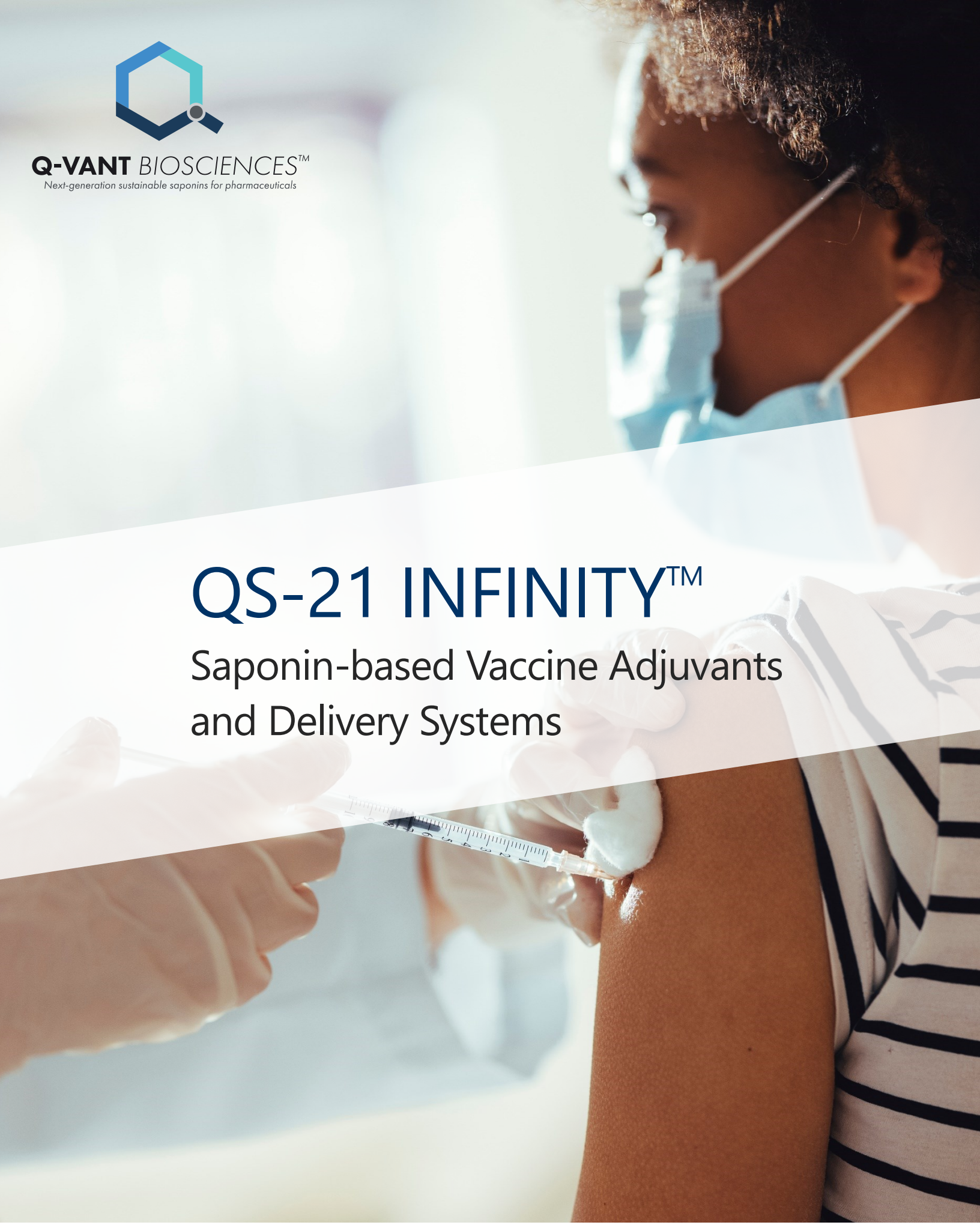
Q-VANT BIOSCIENCES™

Next-generation sustainable saponins for pharmaceuticals



QS-21 INFINITY™

Saponin-based Vaccine Adjuvants and Delivery Systems

QS-21 INFINITY is pure QS-21 fraction, with over 95% purity collected from a fully sustainable raw material source. QS-21 is the Gold Standard saponin adjuvant for enhancing immune response to vaccine antigens. Today, it is a vital component in three FDA or WHO approved vaccines and in multiple human vaccine candidates.

A potent immune protection efficacy massively studied.

QS-21 immunomodulatory adjuvant carries more than 35 years of favorable scientific evidence, and prevails as a serious 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.

Another reason for considering QS-21 is the flexibility of design and breadth of application. QS-21 was shown to raise the immunogenicity of proteins, glycoproteins and polysaccharide antigens in several animal models [6], and currently is being tested both in vaccines 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].

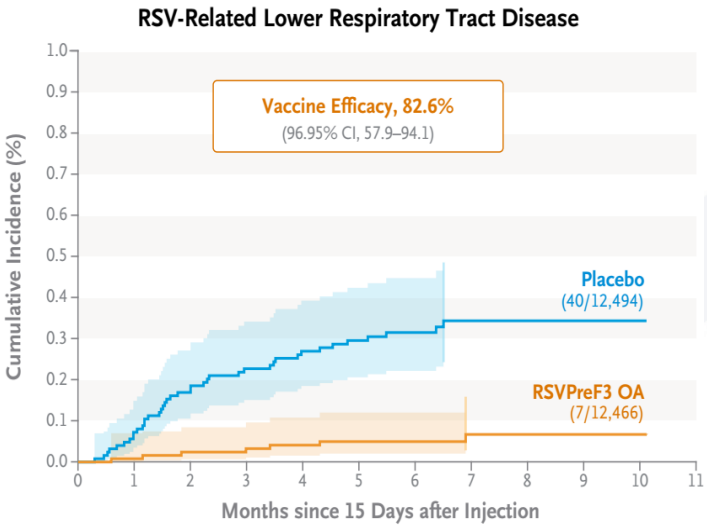


Figure 1. Cumulative incidence percentage of RSV-Related Lower respiratory tract disease in one dose QS-21 enhanced Arexvy® vaccinated cohorts v/s placebo cohorts. (Adapted from [11]).

There are presently three vaccines licensed for human use formulated with QS-21: Mosquirix® (Malaria), Shingrix® (Varicella- Zoster), Arexvy® (RSV) (Figure 1).

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.

High quality QS-21 is suitable for use in human vaccines.

Scalable & robust supply chain.

- Q-VANT engineered a disruptive process which ensures the conventional standard for QS-21 escalating the potential for sustainable supply resulting in a possible annual production capacity exceeding 20 billion pharmaceutical doses.
- QS-21 INFINITY is obtained from multiple sources of *Quillaja saponaria* biomaterial.
- QS-21 INFINITY is manufactured in Washington, United States.
- QS-21 INFINITY will be cGMP certified in 2024.

Standalone easy-to-use and formulate.

Formulation	Dosage rate
Standalone	100 µg/dose
Formulated	25-50 µg/dose

QS-21 INFINITY can be formulated with lipids or phospholipids:

- Neutralizing the surfactant activity.
- Improving tolerance.
- Stabilizing it towards alkaline hydrolysis.
- Maintaining the high adjuvant potency of the final vaccine.

QS-21 INFINITY samples are available for evaluation and testing.

See also Q-VET™ Veterinary Vaccine Adjuvants and Formulations

References

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