

Adjuvance 2021:

**Progressing adjuvant and vaccine
development**



Enhancing Immunity

NOTICES

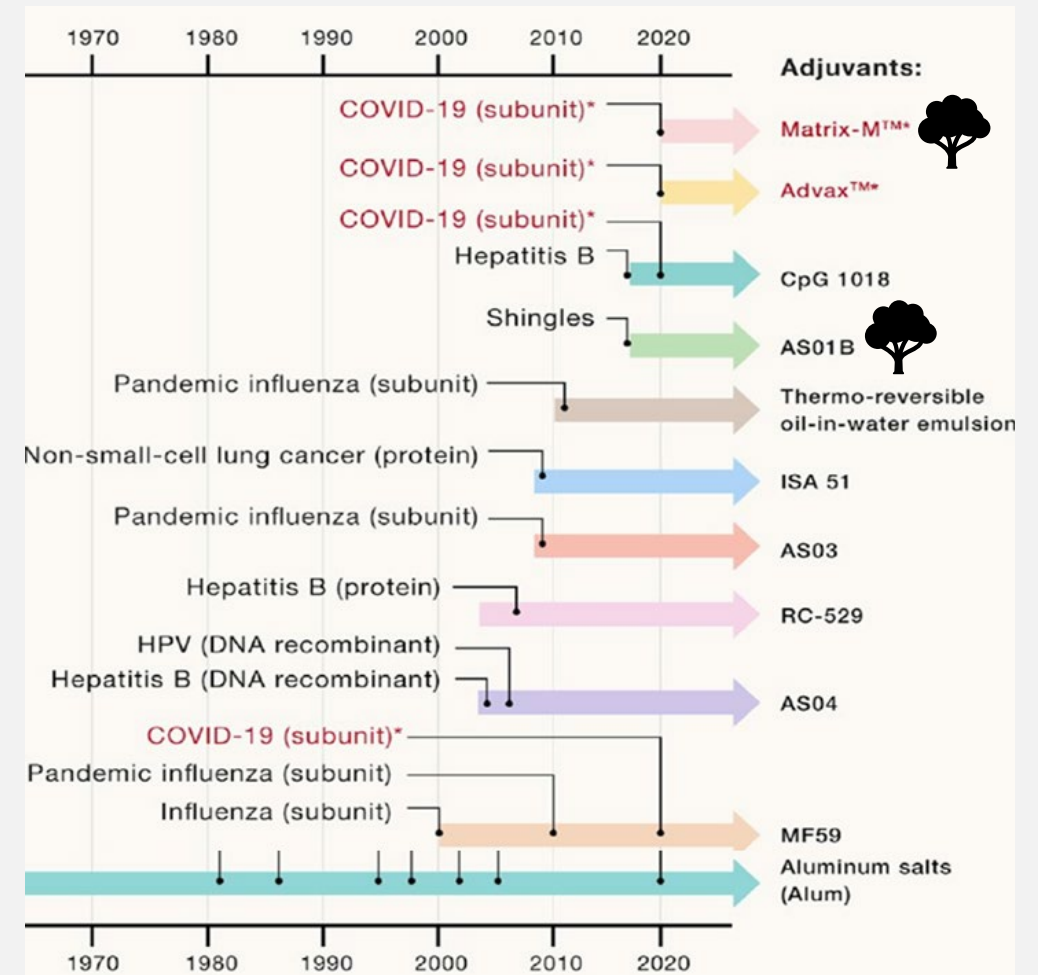
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ANY PROJECTIONS OR OTHER ESTIMATES HEREIN ARE FORWARD-LOOKING STATEMENTS AND ARE BASED UPON CERTAIN ASSUMPTIONS THAT THE COMPANY HAS DEEMED REASONABLE. FINANCIAL, MARKET, ECONOMIC OR LEGAL CONDITIONS, THE PERFORMANCE OF THE COMPANY, REGULATORY DEVELOPMENTS AND OTHER FACTORS COULD CAUSE ACTUAL RESULTS TO DIFFER MATERIALLY FROM THOSE SET FORTH IN THE FORWARD-LOOKING STATEMENTS SET FORTH HEREIN.

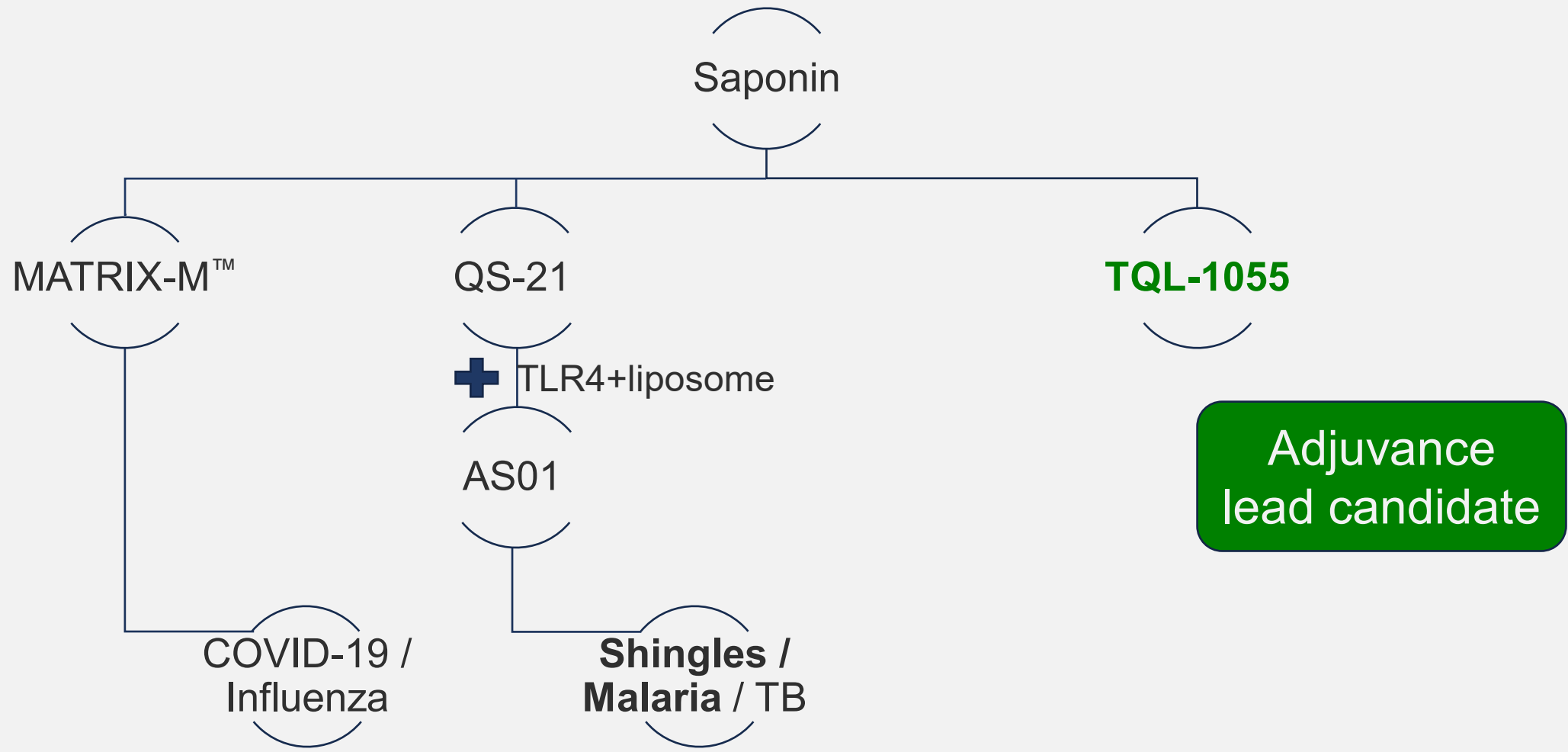
THE BUSINESS, FINANCIAL CONDITION AND PROSPECTS OF THE COMPANY MAY HAVE CHANGED MATERIALLY SINCE THE DATE HEREOF.

Adjuvants are critical to modern vaccine development

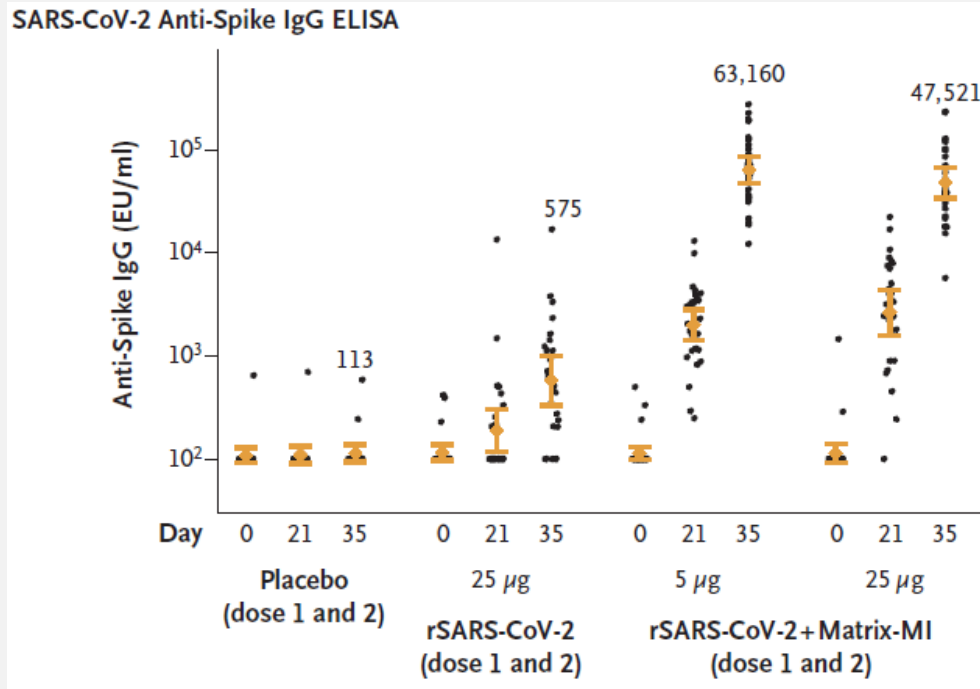
- Recombinant proteins improve vaccine safety but require help
- Adjuvants enhance effectiveness of infectious disease and oncology vaccines
- Saponin adjuvants (🌳) are used alone and in combination
 - Derived primarily from the soapbark tree *Quillaja saponaria*



Saponin adjuvants

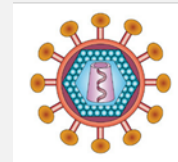
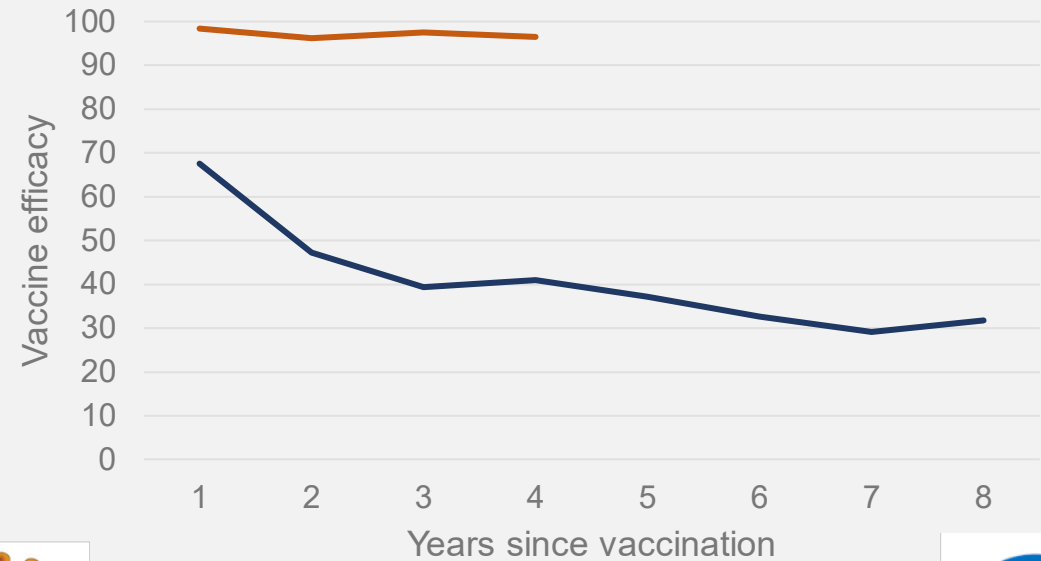


Saponin adjuvants are highly effective



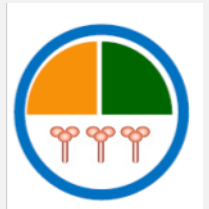
Adjuvant drives higher antibody response in COVID-19 vaccine

Shingles vaccine efficacy comparison



— Live attenuated Zostavax®

— Recombinant AS01 adjuvant Shingrix®



Adjuvanted shingles vaccine provides higher efficacy in older adults

Reactogenicity of saponin adjuvants

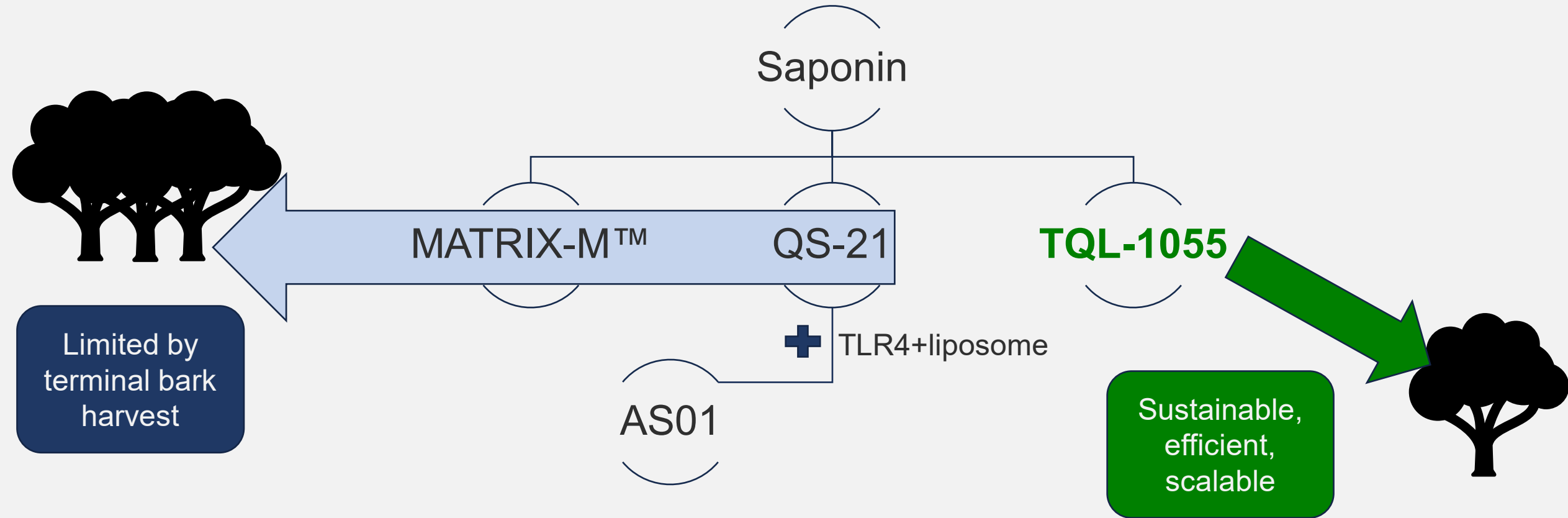
Matrix M in influenza

AS01 in shingles

Adverse Event (AE)	Quadrivalent influenza vaccine (QIV)	Adjuvanted QIV	Placebo	Adjuvanted shingles vaccine
Any solicited AE	32% (29-34)	41% (39-44)	34% (32-35)	84% (83-86)
Solicited local AE	18% (16-21)	28% (26-30)	12% (11-13)	81% (80-82)

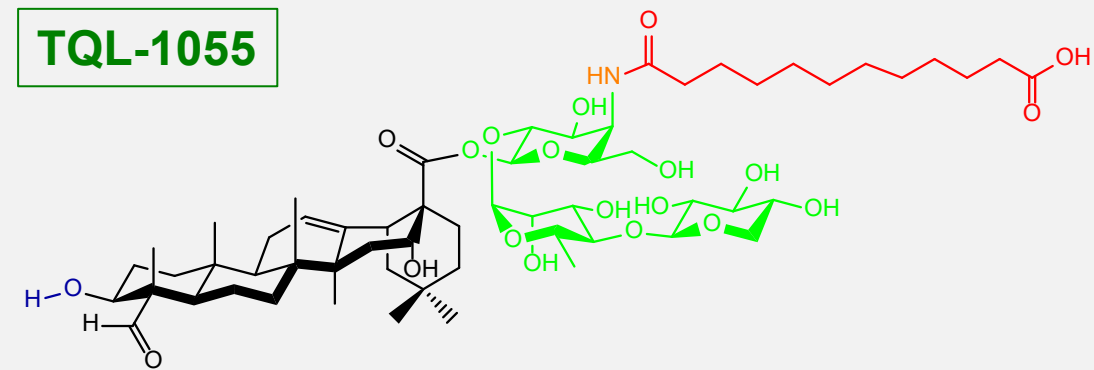
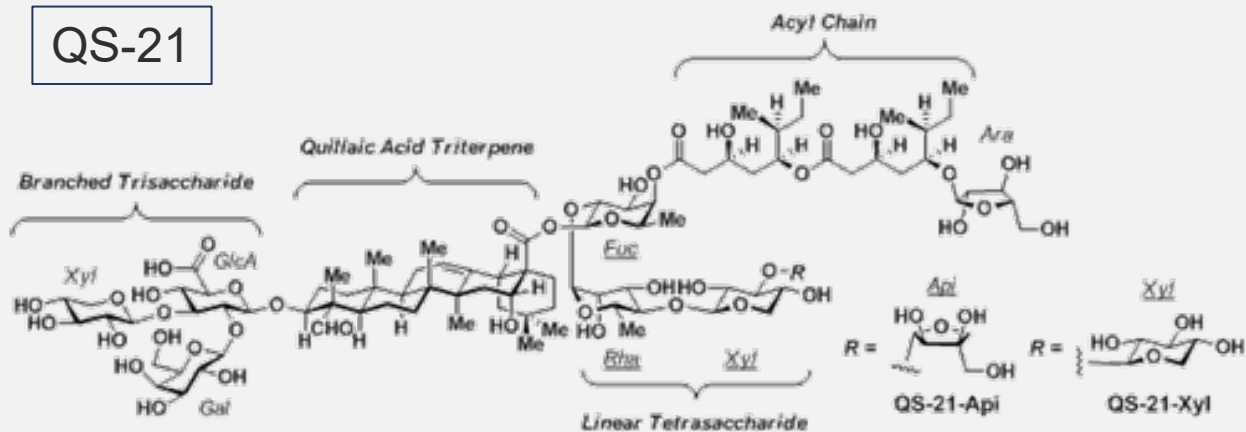
% subjects experiencing AE
(95% confidence interval)

Sustainability and manufacturing efficiency limits



TQL-1055: Optimized Saponin Adjuvant

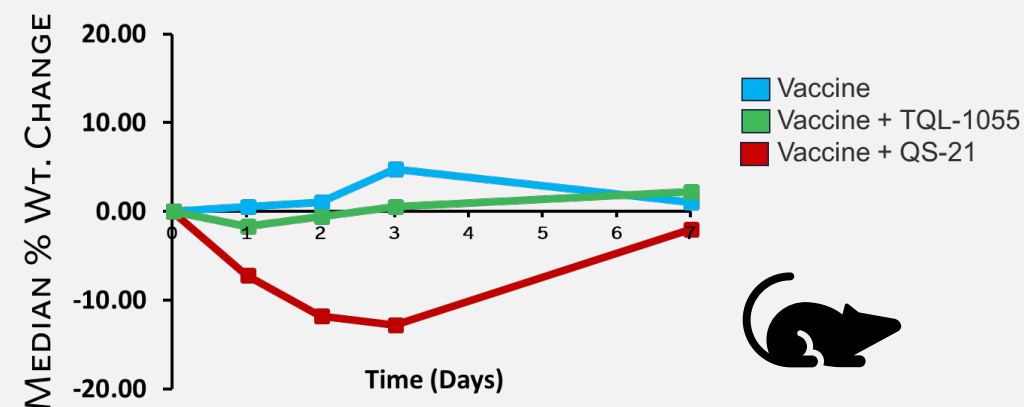
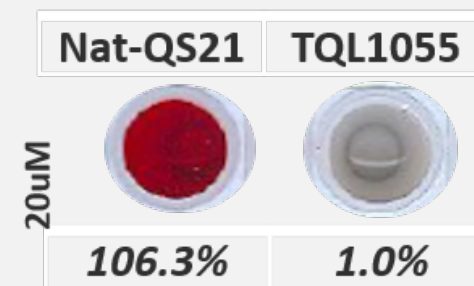
- Simplified, stabilized version of natural saponin adjuvants
- New rationally designed semi-synthetic entity



- TQL-1055 developed through extensive preclinical studies

TQL-1055: Enhanced Tolerability

- Hemolysis associated with QS-21, but not 1055
- Weight loss associated with QS-21 containing vaccines, but not vaccine containing TQL-1055



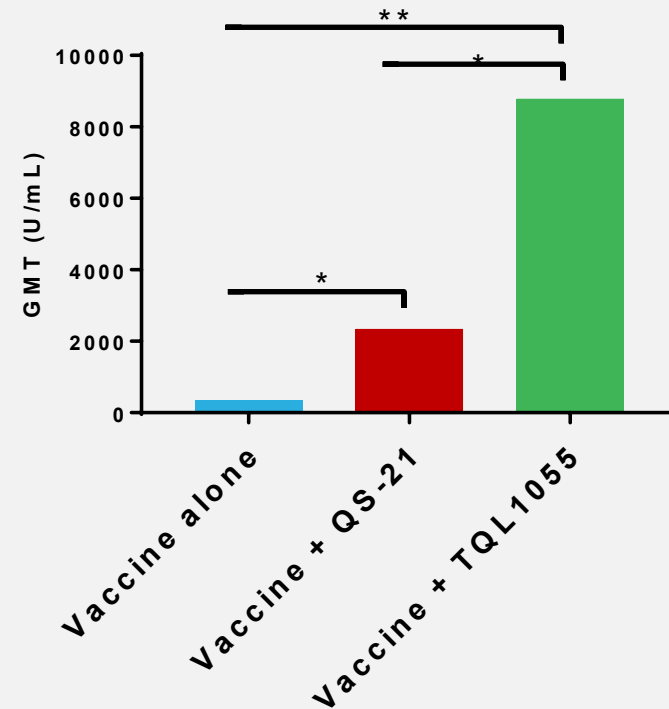
- NOAEL of > 2000 mcg/dose



TQL-1055: Enhanced Immunogenicity

- TQL-1055 enhances antibody response in a commercial acellular pertussis vaccine

Commercial Pertussis Vaccine with TQL1055

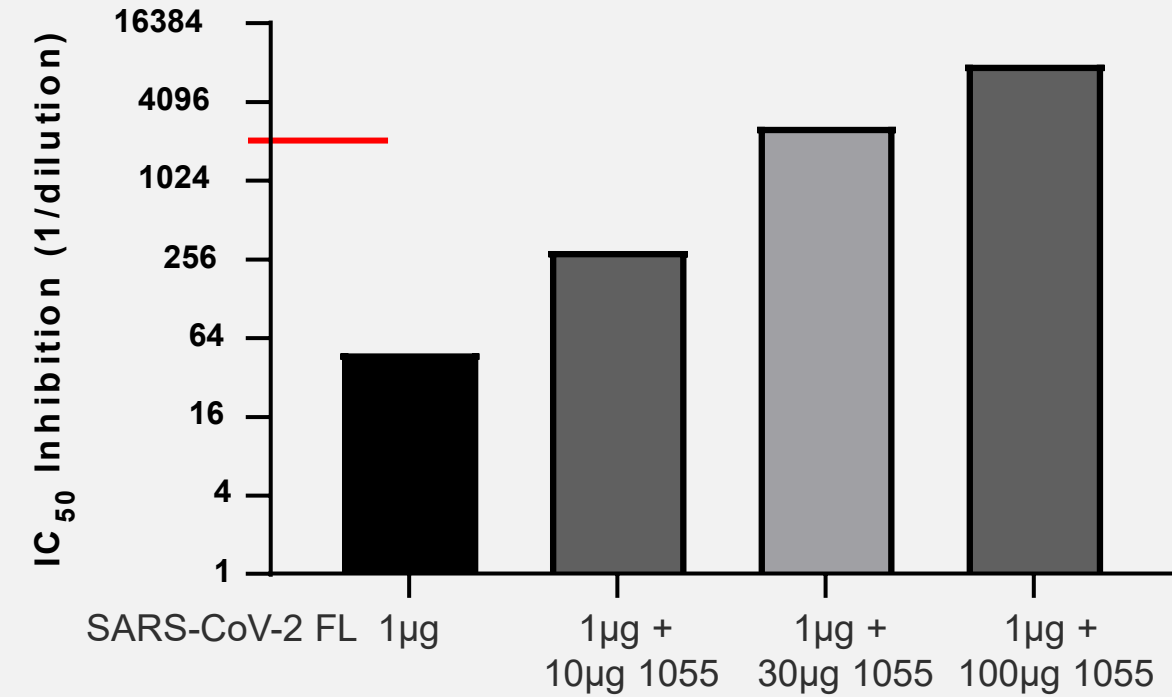


(28 Days post immunization, 10 mice/group)

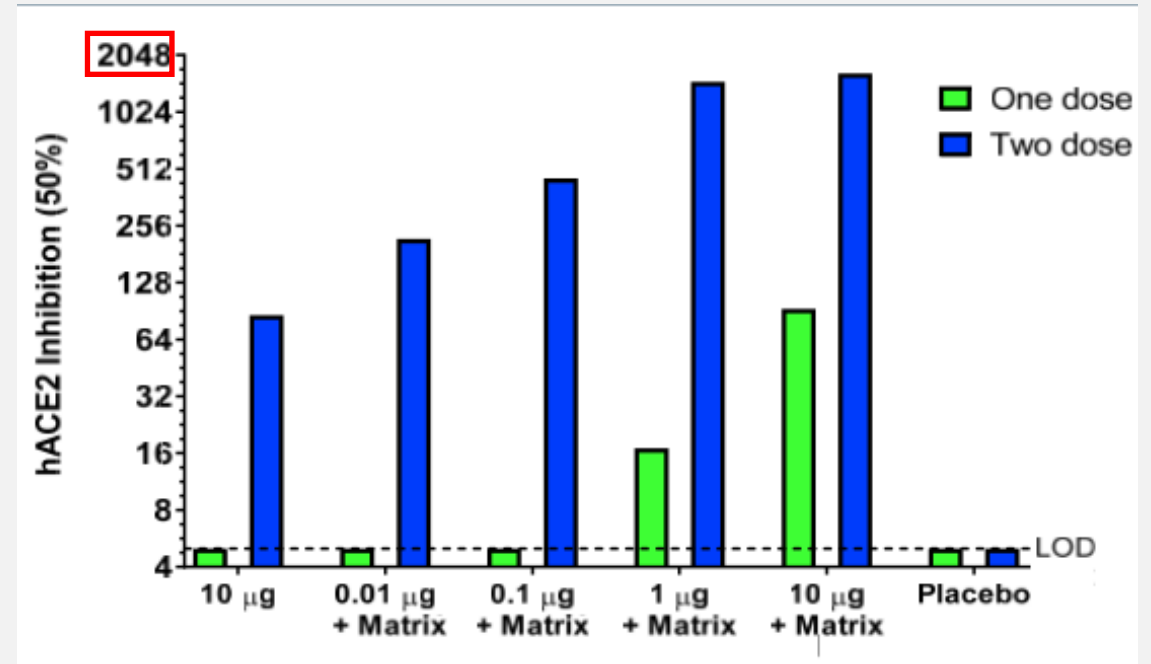


TQL-1055: functional response in COVID

SARS-CoV-2 sVNT IC₅₀ Inhibition:
S.C. Injection



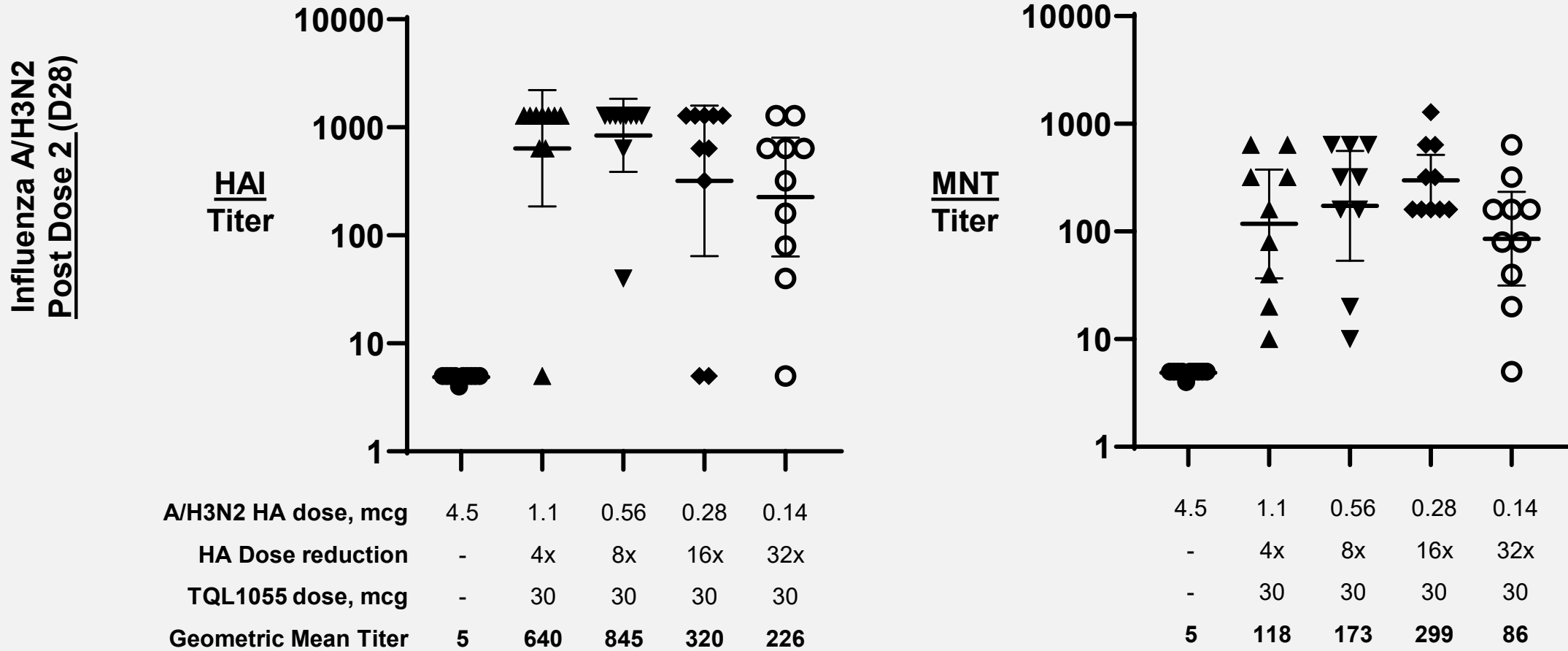
After a second dose



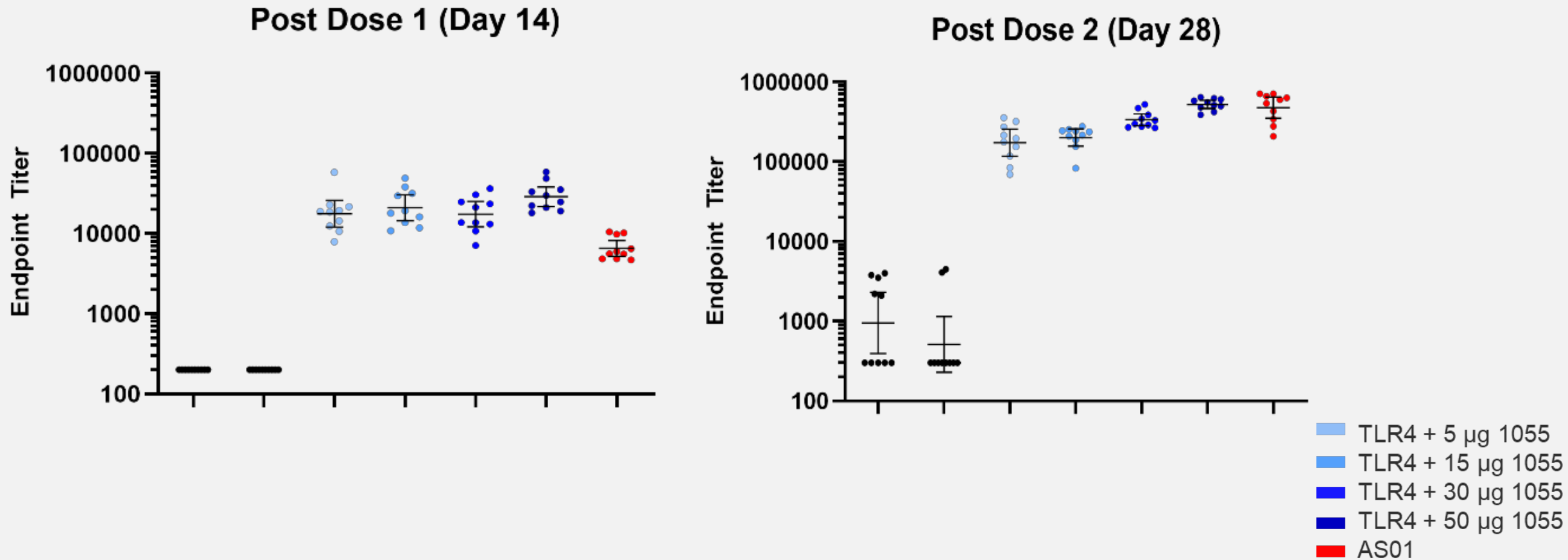
Matrix-M™ Results
(5 µg Matrix-M each group)



TQL-1055: functional response with 32-fold less antigen



TQL-1055 combined with TLR4 elicits response similar to AS01



TQL-1055 has multiple advantages

	Other saponins	TQL-1055
Adjuvanticity	Excellent	Excellent
Tolerability	Post-injection reactions	Decreased
Source materials	Limited	Expanded
Yield	Low	Increased
Purity	Mixed	High
Stability	Limited	Increased
Manufacturing efficiency	Low	Increased
Doses per year	Limited	~2B
Regulatory	Accepted	Accepted for Phase 1 clinical trial

Development Plan

TQL-1055

- IND enabling studies (complete)
- GMP manufacture (complete)
- First in human trial (H1 2021)
 - Dose escalating RCT in infectious disease
- Available now for out-licensing partnerships
 - Several under discussion
- Out-license with supply agreement
- Target: infectious diseases

TQL-1055 combination adjuvant(s)

- IND enabling studies (planned 2021)
- GMP manufacture (planned 2021)
- First in human trial (planned 2022)
 - Dose escalating RCT in infectious disease
- Internal product development focused
- Potential out-license with supply agreement
- Targets: infectious disease, immuno-oncology, neurobiology, substance abuse vaccines, allergy vaccines

Scientific Advisory Board

Stanley Plotkin, MD, Chairman

- Formerly Professor, Penn & Wistar Institute
- Executive Advisor, Sanofi Pasteur
- Chair, Infectious Disease Committee, AAP
- Chair, MID Research Committee, NIH
- Editor, Vaccines
- Developer of rubella vaccine
- Co-Developer: polio, rabies, varicella, rotavirus, cmv

Margaret Liu, MD

- Pioneer of nucleic-acid vaccine development
- Adjuvance director

Greg Poland, MD

- Director, Mayo Clinic Vaccine Research Group
- Editor in Chief, Vaccine

Phil Livingston, MD

- Cancer Vaccine Pioneer, MSKCC
- Adjuvance Co-Founder

Experienced Management Team

Tyler Martin, MD, CEO

- Accomplished adjuvant and vaccine developer
 - Influenza/MF59, now FluAd[®], at Chiron
 - HBV/1018, now Hekplisav[®], at Dynavax

Sean Bennett, MD/PhD, CMO

- Aeras, Dynavax, Aimmune, PaxVax, Emergent

Pat Frenchick, PhD, CSO

- Adjuvant Immunologist

Melissa Malhame, MBA, VP Business Development

- Merck, Dynavax, Gavi-The Vaccine Alliance

Stephan Schulze, MBA, CFO

- Experience with public and private life science companies

Board of Directors

Tyler Martin, MD, Chairman

Isaac Cheng, MD

- Morningside Ventures

Margaret Liu, MD

- Nucleic-acid vaccine pioneer, global health expert

Stephen Dilly, MBBS/PhD

- CEO Sierra Oncology, Former CEO Aimmune, Former CMO Chiron

Ken Kelley

- Formerly CEO PaxVax

Revenue Model

- Potential applications of **TQL-1055**
 1. Infectious disease – improved vaccines (Flu, COVID-19)
 2. Infectious disease – novel vaccines
 3. Immuno-oncology – vaccine or immunomodulation
 4. Neurobiology
 5. Substance abuse and allergy vaccines
- Revenue will be based on
 - **Internal vaccine development projects**
 - **Out-licensing adjuvants:** upfront, milestones, royalties, supply agreements

Finances

- Adjuvance is pre-revenue
- Awarded \$3.5 M in non-dilutive grants/contracts
- Out-licensing partnerships under discussion
- Closed \$24 M paid-in capital (\$20 M Series A round in 2019)
 - Funds first-in-human clinical trial of **TQL-1055** (infectious disease)
 - Next funding round to advance **TQL-1055** and expand platform in 2021

Thank you!

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Enhancing Immunity