WORK GROUP INTERPRETATION OF VACCINE DATA AND WORK GROUP PLANS AND TIMELINES

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Immunogenicity

Pivotal Phase 3 study

- Randomized, placebo-controlled, double-blind trial in adults aged ≥18 years
- Subjects seronegative at baseline (i.e., no detectable chikungunya virus neutralizing antibodies)
- Seroresponse defined as chikungunya virus neutralizing antibody titer of ≥150 by 50% micro-plaque reduction neutralization test ($\mu PRNT_{50}$)

Immunogenicity population

- 462 subjects enrolled overall in immunogenicity population
- 362 subjects (78% of enrolled subjects) in per protocol population* for analysis
  - 266 vaccine recipients
  - 96 placebo recipients

*Subjects with no major protocol deviations

Results: Immunogenicity

- **28 days** after vaccination
  - **99%** had seroresponse (263 of 266)
  - Geometric mean titer (GMT): 3,362

- **6 months** after vaccination
  - **96%** had seroresponse (233 of 242)
  - GMT: 752

Results: Immunogenicity by age group

- 28 days after vaccination
  - **18–64 years**: **99%** had seroresponse (204 of 207); GMT: 3,274
  - **≥65 years**: **100%** had seroresponse (59 of 59); GMT: 3,689

- 6 months after vaccination
  - **18–64 years**: **97%** (178 of 184); GMT: 755
  - **≥65 years**: **95%** (55 of 58); GMT: 743

Lot to lot consistency study

- Adults aged 18–45 years

- Seroresponse rates post-vaccination
  - **28 days**: **98%** (348 of 356)
  - **6 months**: **96%** (316 of 329)

Work Group Summary: Immunogenicity

- Total of 622 adults in two Phase 3 trials
- At 28 days post-vaccination, high seroresponse rates (≥98%)
- At 6 months post-vaccination, high seroresponse rates maintained (96%)
- Similar seroresponse rates in older (≥65 years) and younger (18–64 years) adults
  - Limited data among older subjects (N=59)

Safety

Pivotal Phase 3 study

- Study population (N=4,115)
  - 3,082 (75%) vaccinated
  - 1,033 (25%) placebo
- Distribution of subjects by age group
  - 18–64 years: 2,736 (89%)
  - 65–88 years: 346 (11%)

Adverse events (AEs) overall

	Vaccine group (N=3,082)	Placebo group* (N=1,033)
Any AE	62%	45%
Any related AE	51%	31%
Any related severe¥ AE	2%	0.1%

*All events occurred at significantly higher rates in vaccine group compared with placebo group

¥Incapable of work or usual activity and requiring medical intervention; Local and systemic AEs rated based on FDA Toxicity Grading Scales

Solicited local reactions within 10 days after vaccination

- Any reported local AE
  - 15% in vaccine recipients vs 11% in placebo recipients
- Rates of individual AEs
  - Tenderness: 11%
  - Pain, erythema, induration, swelling ≤6%

Solicited systemic reactions within 10 days

- Any reported systemic AE
  - 50% in vaccine recipients vs 27% in placebo recipients
- Any reported severe systemic AE
  - 2% in vaccine recipients vs 0% in placebo recipients
- Commonest AEs
  - Headache, fatigue , myalgia ~25%–30%

Arthralgia after vaccination

- Reported by 17% (N=514) vaccine recipients vs 5% placebo recipients

- Severity of arthralgia (N=514)
  - Mild: 83%
  - Moderate:16%
  - Severe: 2%

- Duration until resolution of arthralgia (N=514)
  - 1–5 days: 85%
  - 6–15 days: 13%
  - >15 days: 2% (maximum 182 days)

Serious adverse events (SAEs)

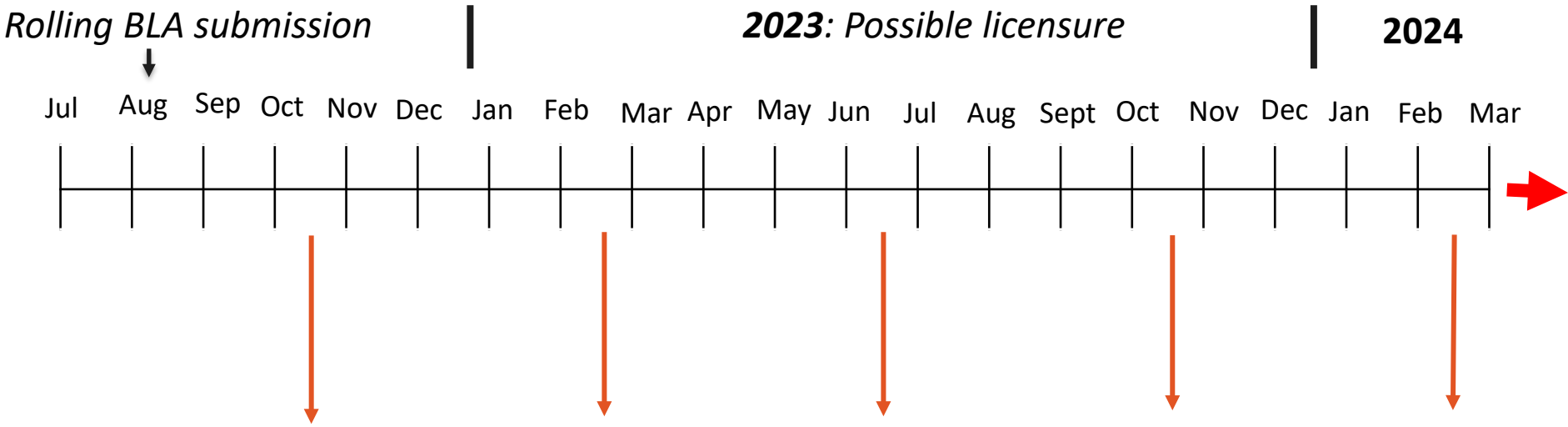
- Any SAE: 1% in vaccine recipients vs 1% in placebo recipients
- Any related SAE: 0.1% (n=2) in vaccine recipients vs 0 in placebo recipients

Work Group Summary: Safety

- Available data for 3,490 adults in two Phase 3 trials
- Overall, AEs and severe AEs occurred at significantly higher rates in vaccine vs placebo recipients
- Solicited local AEs reported at low rate
- Solicited systemic AEs reported by 50% of vaccinated subjects
  - Arthralgia reported by 17% vaccine recipients
- Insufficient number of subjects to detect rare SAEs
- Work Group will be reviewing data more fully during GRADE assessment

Work Group timelines and plans

Work Group timeline (tentative)



Summary of Work Group plans and activities

- Future presentations to ACIP on chikungunya epidemiology and disease burden
- Comprehensive review of immunogenicity and safety data (GRADE)
- Over longer term, additional vaccine data in younger age groups and/or additional chikungunya vaccines

Thank you

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Chikungunya Vaccines Work Group members

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