

Supplementary Table 1: Vaccination-related abnormal changes in blood biochemistry, hematology, or urinalysis.

| Abnormal change | 5 µg group (N=24) | 10 µg group (N=24) | Placebo group (N=12) | P value |
|-----------------------------------|-------------------|--------------------|----------------------|---------------|
| Urine protein positive | 2 (8) | 1 (4) | 1 (8) | 1.0000 |
| Urine erythrocyte positive | 2 (8) | 1 (4) | 0 | 0.7980 |
| Hemobilirubin elevated | 0 | 0 | 3 (25) | 0.0064 |
| Alanine aminotransferase elevated | 1 (4) | 0 | 0 | 1.0000 |
| Lymphocytes count lowered | 1 (4) | 0 | 0 | 1.0000 |
| Urine glucose positive | 0 | 1 (4) | 0 | 1.0000 |
| Blood glucose elevated | 1 (4) | 0 | 0 | 1.0000 |
| Sum | 7 (29) | 3 (13) | 4 (33) | 0.2391 |

Data are presented as *n* (%) of participants experiencing the relevant abnormal changes. N: Number of participants included in each treatment group for the safety analysis.

Supplementary Table 2: Specific T-cell responses as measured by ELISpot in the phase 1 trial.

| Items | Baseline | | | Day 14 | | | Day 28 | | |
|--|---------------|---------------|---------------|-------------------|-------------------|---------------|----------------------|----------------------|---------------|
| | 5 µg group | 10 µg group | Placebo group | 5 µg group | 10 µg group | Placebo group | 5 µg group | 10 µg group | Placebo group |
| <i>N</i> | 24 | 24 | 12 | 24 | 24 | 12 | 23 | 24 | 12 |
| Positive responders, n(%, 95%CI) | 0 | 0 | 0 | 2 (8.3, 1.0–27.0) | 2 (8.3, 1.0–27.0) | 0 | 13 (56.5, 34.5–76.8) | 15 (62.5, 40.6–81.2) | 0 |
| IFN-γ positive SFCs per 200,000 cells | 1.2 (0.5–1.9) | 0.9 (0.1–1.0) | 1.2 (0.4–2.0) | 5.2 (3.5–6.9) | 3.7 (1.8–5.6) | 1.5 (0.8–2.2) | 14.8 (10.2–19.3) | 24.3 (14.9–33.7) | 0.9 (0.0–1.8) |

Data are presented as *n* (95% CI) of IFN-γ positive SFCs per 200,000 cell. CI: Confidence interval; ELISpot: Enzyme-linked immunospot; IFN: interferon; SFCs: spot-forming cells.

Supplementary Table 3: Serum cytokines measured by ELISA in the phase 1 trial*.

| Items | Baseline | | | Day 14 | | | Day 28 | | | Day 42 | | |
|------------------|------------|-------------|---------------|------------|-------------|---------------|------------|-------------|---------------|------------|-------------|---------------|
| | 5 µg group | 10 µg group | Placebo group | 5 µg group | 10 µg group | Placebo group | 5 µg group | 10 µg group | Placebo group | 5 µg group | 10 µg group | Placebo group |
| TNF-α | | | | | | | | | | | | |
| <i>N</i> | 24 | 24 | 12 | 24 | 24 | 12 | 23 | 24 | 12 | 23 | 24 | 12 |
| Mean (SD) | 1.4 (5.7) | 20.2 (33.7) | 13.1 (23.93) | 1.3 (5.5) | 0 | 0 | 1.5 (6.4) | 0 | 0 | 1.1 (4.9) | 0 | 0 |
| Median | 0 | 5.2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| IL-2 | | | | | | | | | | | | |
| <i>N</i> | 24 | 24 | 12 | 24 | 24 | 12 | 23 | 24 | 12 | 23 | 24 | 12 |
| Mean (SD) | 0.1 (0.3) | 1.1 (4.2) | 0.5 (1.8) | 1.5 (4.7) | 0.7 (2.6) | 0.8 (2.6) | 3.7 (6.3) | 1.4 (5.1) | 2.2 (5.6) | 4.7 (7.0) | 3.2 (6.5) | 0 |
| Median | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| IL-4 | | | | | | | | | | | | |
| <i>N</i> | 24 | 24 | 12 | 24 | 24 | 12 | 23 | 24 | 12 | 23 | 24 | 12 |
| Mean (SD) | 0 | 0 | 0 | 0 | 0 | 0 | 0.3 (1.1) | 0 | 0 | 0.1 (0.3) | 0.1 (0.5) | 0 |
| Median | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| IL-5 | | | | | | | | | | | | |
| <i>N</i> | 24 | 24 | 12 | 24 | 24 | 12 | 23 | 24 | 12 | 23 | 22 | 12 |
| Mean (SD) | 0 | 0 | 0.8 (2.7) | 0 | 0 | 1.0 (3.5) | 0 | 0 | 1.1 (3.7) | 0 | 0.4 (1.7) | 0.5 (1.7) |
| Median | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

*Serum cytokines including TNF-α, IL-2, IL-4, IL-5, IL-6, and IFN-γ, were tested by ELISA on Days 0, 14, 28, and 42. IL-6 and IFN-γ were not detected. SD:Standard deviation; ELISA:Enzyme-linked immunosorbent assay.