**Supplementary Material**

**Table S1:** Secretion of splenic cytokines after *in vitro* re-stimulus. There was no significant stimulus for the production of cytokines IL-2, IL-4, IL-10, IL-17A. Levels measured in pg.mL-1. Values express mean ± standard deviation.

|  | **24h** | **48h** | **72h** |
| --- | --- | --- | --- |
| **Cytokine**  | **nr** | **ENV** | **ENVNS1** | **nr** | **ENV** | **ENVNS1** | **nr** | **ENV** | **ENVNS1** |
| **IL-2** | 440.89± 13.51 | 447.33± 5.79 | 432.00± 13.69 | 421.77± 7.05 | 432.72± 8.21 | 419.19± 4.04 | 410.6± 10.02 | 412.80± 2.55 | 417.42± 13.12 |
| **IL-4** | 907.44± 0.90 | 905.87± 0.09 | 906.68± 0.88 | 905.67± 0.58 | 905.66± 0.70 | 905.60± 0.58 | 904.47± 0.55 | 904.78± 0.51 | 905.54± 0.77 |
| **IL-10** | 132.75± 8.02 | 117.48± 5.30 | 130.56± 4.11 | 117.31± 6.51 | 123.21± 7.85 | 121.41± 13.85 | 119.53± 12.85 | 124.01± 7.67 | 124.48± 8.65 |
| **IL-17A** | 153.59± 1.21 | 150.09± 0.96 | 152.55± 3.61 | 151.35± 1.55 | 156.86± 4.12 | 151.28± 7.68 | 145.75± 2.85 | 146.89± 1.91 | 149.45± 5.14 |

**Table S2:** Average weight of the mice groups throughout the immunization experiment. Values correspond to mean ± standard deviation.

| **GROUPS** | **Weight (g)** |
| --- | --- |
| **Day 1** | **Day 7** | **Day 21** |
| ***P. pastoris*:nr** | 21.66 ± 0.90 | 22.74 ± 0.99 | 23.27 ± 1.20 |
| ***P.pastoris*:ENV** | 22.06 ± 1.63 | 22.63 ± 1.77 | 23.71 ± 2.02 |
|  ***P.pastoris*:ENVNS1** | 20.86 ± 0.55 | 22.03 ± 1.03 | 22.75 ± 1.01 |