

Table S2. Recombinant mAbs from Infant 1 Year 1 post-vaccination Bmem. Clonotypes with high read counts from the NGS data were made as mAbs. For each selected clonotype, the CDRH3 sequence, *IGHV*, *IGHJ*, and SHM levels are shown. mAbs were characterized by ELISA to determine their EC₅₀ values against HAs. +++: <100 nM; ++: 100-1000 nM; +: detected signal at 1000 nM; -: no signal at 1000nM; H1: A/California/2009 X181; H3: A/Hong Kong/2014 X263B; B/Vic: B/Brisbane/60/2008; B/Yama: B/Phuket/3073/2013.

| Description | CDRH3 | <i>IGHV</i> | <i>IGHJ</i> | <i>IGHV</i> SHM (%) | H1 Binding | H3 Binding | B/Vic Binding | B/Yama Binding |
|-------------|------------------------------|-------------|-------------|---------------------|------------|------------|---------------|----------------|
| IgG-rank 1 | CAKDFYGSWGSMDVW | 3-9 | 6 | 0.7 | - | - | - | - |
| IgG-rank 2 | CARGNGPGSYLIDYW | 1-3 | 4 | 6.4 | + | - | - | - |
| IgG-rank 3 | CARGGGTMIVPIKPHNWYFDLW | 1-18 | 2 | 1.7 | +++ | ++ | - | - |
| IgG-rank 4 | CARVRPLTVGWHFDLW | 4-61 | 2 | 0.7 | +++ | ++ | - | - |
| IgG-rank 5 | CARDGLKVGTTTFDYW | 3-66 | 4 | 1.4 | +++ | ++ | - | - |
| IgG-rank 6 | CARGGGPYYYGSGSYNSLYYYYYYMDVW | 4-34 | 6 | 1 | + | + | - | - |
| IgG-rank 7 | CAKDSPSGWYKGGFDYW | 3-30 | 4 | 4.9 | - | - | - | - |
| IgG-rank 8 | CARNGGGLGLW | 3-74 | 3 | 5.7 | + | + | - | - |
| IgG-rank 9 | CARDWEYSSSFFGPW | 3-11 | 5 | 3.7 | + | + | - | - |
| IgG-rank 11 | CARESFKGNWFDPW | 3-53 | 5 | 5.5 | +++ | +++ | - | - |
| IgG-rank 14 | CAREIIAVADPTDGARNWYFDLW | 3-53 | 2 | 2.1 | +++ | ++ | - | - |
| IgM-rank 1 | CARGAQTTVTTLVDYYYYYMDVW | 4-34 | 6 | 0 | ++ | - | - | - |
| IgM-rank 2 | CNTGSVAAAEPW | 3-15 | 5 | 2.4 | + | + | - | - |
| IgM-rank 3 | CARDQLVHDAFDIW | 4-31 | 3 | 0 | ++ | + | - | - |
| IgM-rank 4 | CARDTLNCGGDCYGDYW | 3-21 | 4 | 2.1 | +++ | ++ | - | - |
| IgM-rank 5 | CARDRDYGYFDYW | 1-3 | 4 | 1.7 | + | - | - | - |