Humoral immunity and lymphocyte immunophenotyping control background data in mainland and indonesian cynomolgus monkey infants

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Humoral Immunity and Lymphocyte Immunophenotyping Control Background Data in Mainland Lymphocyte immunophenotyping (LIP) of peripheral blood and T-cell dependent antibody response (TDAR) data from Mainland (ML, China and Cambodia) and Indonesian Island (IL) cynomolgus monkey infants (from 1 to 12-month old, the control groups from 10 to 14 pre and postnatal development studies) were retrospectively analyzed and compared for use as historical background data.

Blood samples for LIP were collected throughout the postnatal period and analyzed for total CD3+ T cells, CD3+CD4+ Helper T cells, CD3+CD8+ Cytotoxic T cells, CD3-CD20+ B cells, and CD3-CD16+ or CD3-CD159a+ Natural Killer (NK) cells. To evaluate TDAR, keyhole limpet hemocyanin (KLH) was injected twice into the infants, and primary and secondary IgM and IgG levels in serum were measured by ELISA.

IL monkeys had higher absolute counts and relative percentages of NK cell populations, and lower circulating B cell numbers when compared to ML monkeys. IgM elevated rapidly after the 1st and 2nd KLH doses, with peak IgM concentrations in IL 24-27% lower than that observed in ML. IgG elevated gradually after the 1st dose and increased rapidly after the 2nd challenge. The highest IgG levels after primary KLH challenge in IL was 24% lower than ML. After the 2nd KLH dose, the highest IgG in IL was 39% higher than ML. The trends of IgM and IgG responses were similar between IL and ML.

In conclusion, there were distinct differences in NK and B-cell populations and IgM/IgG responses between infants of ML and IL origin, suggesting origin-specific differences in lymphocyte development and function.