Stability of Zika and Dengue Immunoglobulines in matched serum and urine samples as assessed using a 15-plex Commercial Kit for the Detection IgG and IgM to Zika and other Flaviviruses.

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In order to determine an individual’s serological status to the Zika virus and other flaviruses, antigens to Zika virus (NS1 & VLP), Dengue, Japanese Encephalitis (JEV), West Nile (WNV), Yellow Fever (YF), Usutu virus (UV), St. Louis Encephalitis(SLEV) and Chikungunya (Chik) were coupled to MagPlex Microspheres. Antibodies to IgG & IgM were also coupled to microspheres to serve as assay controls. The kit was optimized to detect IgG or IgM to each virus from a single 10 ul sample in less than 3 hours. Antigens were shown to be specific through detection by monoclonal antibodies. These antibodies were also formulated to serve as both run-to run and lot-to-lot controls. The kit was previously shown to have an average precision ranging from 8-17% for all antigens for both IgG and IgM. Sample linearity was within the 80-120% acceptance range for known positives

Matched serum and urine (n=16) samples that were shown to be serologically positive for Zika and /or Dengue by immunoassay were purchased from Boca Biolistics. Signals in the Zika urine samples correlated to the NS1 plasma signal, but not the VLP. Of the 8 ZIKA urine samples, 4 showed positive IgG signals in urine, while all 8 were positive in plasma. There were no positive signals in urine for IgM in the Zika or Dengue samples. Samples were tested after storage for 3 & 14 days at room temperature (RT) or 4 °C and compared to the frozen control signals. Serum samples were stable at these conditions for both IgG and IgM. Urine IgG was also stable for up to 14 days at room temperature. Urinary IgM was inconclusive due to low signals. We conclude that the xMAP® *Flavivirus* Serology Panel can be used to test serum (IgG & IgM) and urinary IgG after 14 days of storage at either 4°C or RT