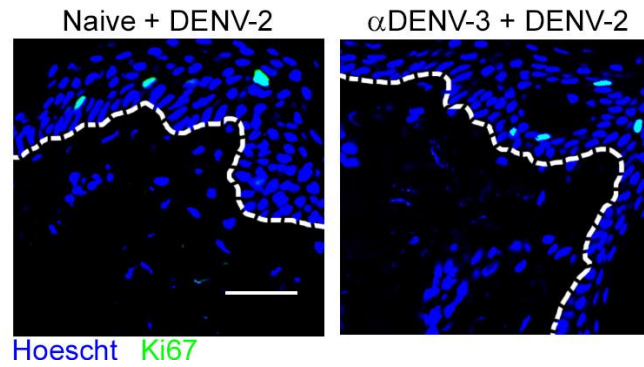**Supplemental Material**

Figure S1. Dermal myeloid cells lack evidence of proliferation following DENV-2 infection. Immunofluorescence of skin stained with antibody to Ki67 (green) after inoculation with DENV-2 in skin pretreated with DENV-3 immune sera or naïve sera. Blue staining represents nuclei and dotted lines indicate epidermal-dermal junction. Note scattered Ki67+ cells in epidermis in both conditions, consistent with homeostatic keratinocyte division. Scale bar 50μm.

Table S1. Binding properties of DENV-3 and ZIKV immune serum to homologous and heterologous virus. Mean ± SEM of IC50 values (log10) of DENV-3 and ZIKV immune serum to homologous and heterologous virus.

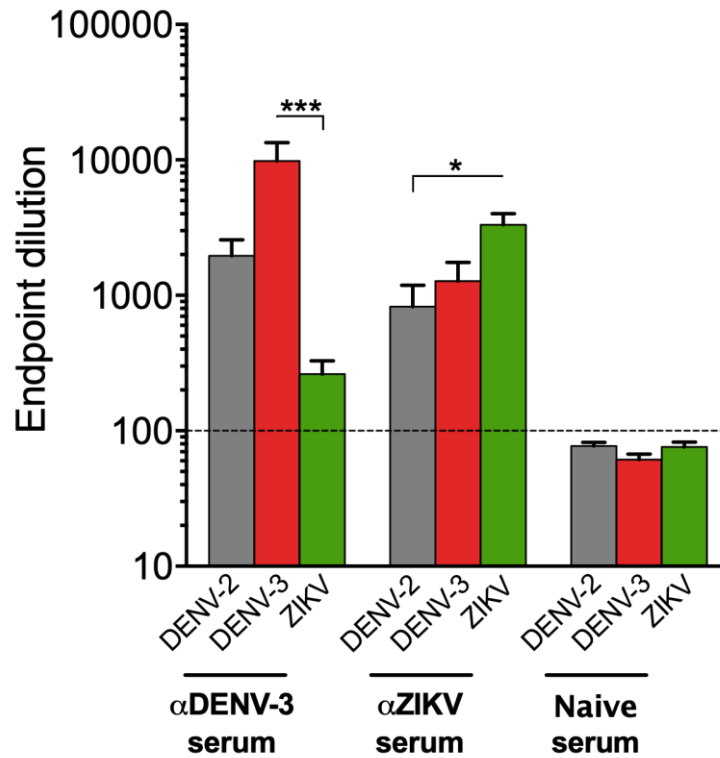| Antigen	$IC_{50}\pm SEM$	
	αDENV-3	**αZIKV**
DENV-2	3.05±0.13	1.77±0.23
DENV-3	3.23±0.05	1.52±0.24
ZIKV	1.81±0.27	2.07±0.24

Figure S2. Endpoint titers of binding IgG in DENV-3 and ZIKV immune serum to homologous and heterologous virus. Mean ± SEM endpoint IgG titer for each data set are indicated. Dotted line represents initial serum dilution. Statistically significant differences were determined through Kruskal-Wallis test, followed by Dunn multiple comparison tests and are marked as *p <0.05 and *** p <0.0001.

Figure S3. Blockage of CD32 and/or CD64 does not affect DENV infection in epidermis. Quantification of the density of NS3-expressing cells in epidermis after inoculation with 10^3 FFU of DENV-2 in skin pretreated with neutralizing antibodies to CD32 and/or CD64 combined with a 1:40 dilution of naïve or DENV-3 immune sera. Each symbol represents a different donor and horizontal lines represent means.