**Supplementary file 5. Spearman correlation between humoral and cellular immune responses and IAV HA nucleotide diversity in individual pigs.**

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| **Virus** | **Sample size (n)** | **Variable 1** | **Variable 2c** | **Rd** | **P value** |
| H1N1 | 17 | H1-specific hemagglutinin inhibition titera | Pi | 0.129 | 0.622 |
| PiN | 0.138 | 0.598 |
| PiS | 0.138 | 0.597 |
| 13 | H1-specific IFN-γ ELISPOT cell countb | Pi | 0.087 | 0.778 |
| PiN | 0.110 | 0.720 |
| PiS | -0.074 | 0.811 |
| H3N2 | 20 | H3-specific hemagglutinin inhibition titer | Pi | -0.203 | 0.391 |
| PiN | 0.205 | 0.385 |
| PiS | -0.111 | 0.641 |
| 16 | H3-specific IFN-γ ELISPOT cell count | Pi | -0.031 | 0.909 |
| PiN | -0.512 | 0.043 |
| PiS | 0.225 | 0.402 |

a The hemagglutinin inhibition assay was performed on blood samples from selected treatment pigs collected prior to contact with challenged pigs.

b The analysis of ELISPOT on IFN-γ secreting cells was performed on lymph nodes from selected treatment pigs which were collected at necropsy 7 days post contact with seeder pigs.

c All the parameters of nucleotide diversity were calculated in reference to the HA segment of the H1 or H3 viruses.

d Abbreviations: R: Spearman's rank correlation coefficient; Pi: overall nucleotide diversity; PiN: nonsynonymous nucleotide diversity; PiS: synonymous nucleotide diversity.