

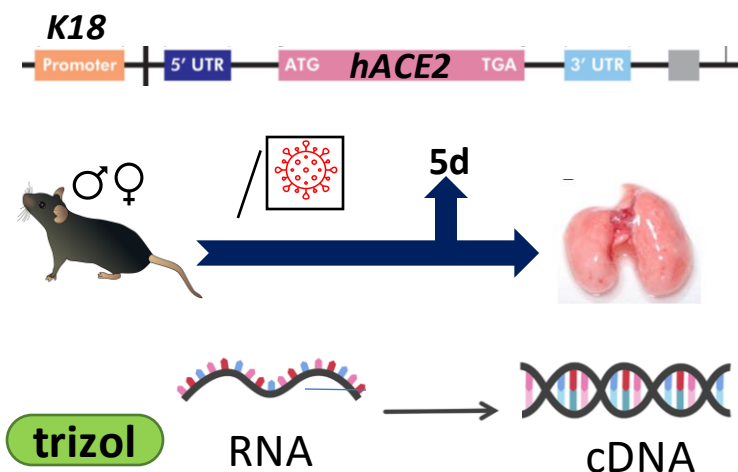
Background

- COVID-19 is a disease caused by the coronavirus called SARS-CoV2
- A wide range of symptoms from asymptomatic to lethal. Men are more severely affected by COVID than women
- Angiotensin converting enzyme 2 acts as a receptor to the virus to cause infection.
- look at expression of hACE2 correlating with disease severity/outcome

Hypothesis

- Mice with more human ACE2 (hACE2) will show a higher viral load and more severe disease
- Different expression of hACE2 correlates with disease severity between males and females

Methodology



Results

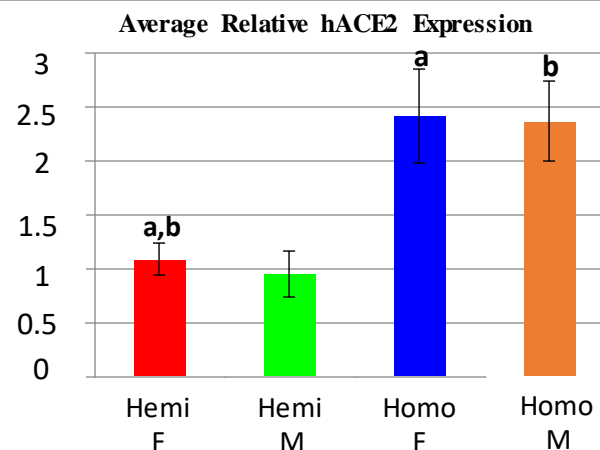


Fig. 1. Average Relative hACE2 Expression Homo (homzygous) and Hemi (Hemizygous) M/F (male and female) mice. Error bars indicate standard deviation along with p-values showing significance in relationship to the group Homo F. P-value a=0.05 b=0.02

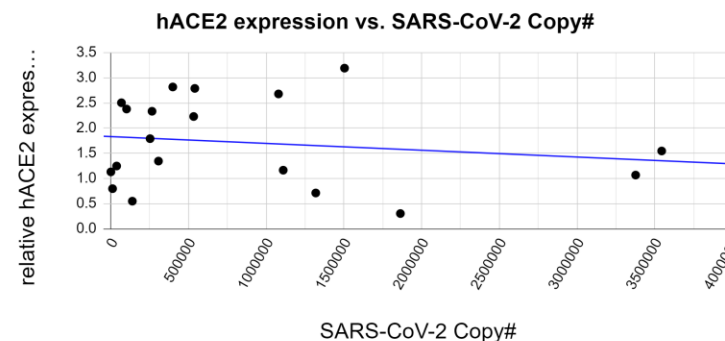
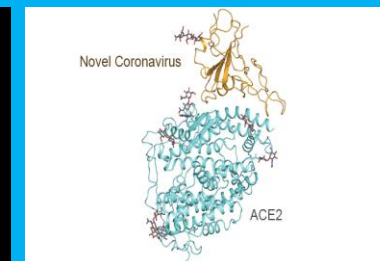
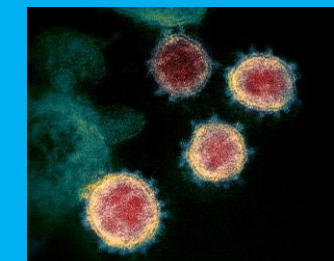


Fig 2. hACE2 expression vs. SARS-CoV-2 Copy#
Black points represent the values for hACE2 expression and copy number amount. Dark blue trendline with a correlation of -0.16506, and $R^2 = 0.025$

Conclusion

- Animals with two copies of hACE2 transgene array (homozygous) show twice the amount of expression of hACE2 than hemizygous animals. There aren't any major variations between sexes when expressing the transgene.
- There is not a direct correlation with the viral load as expressed in figure 2. Based on the data obtained; more expression of the transgene does not show indications of an increased viral load



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