

CARDIOMYOPATHY PROGRESSION DUE TO OVEREXPRESSION OF miRNA- 322/503

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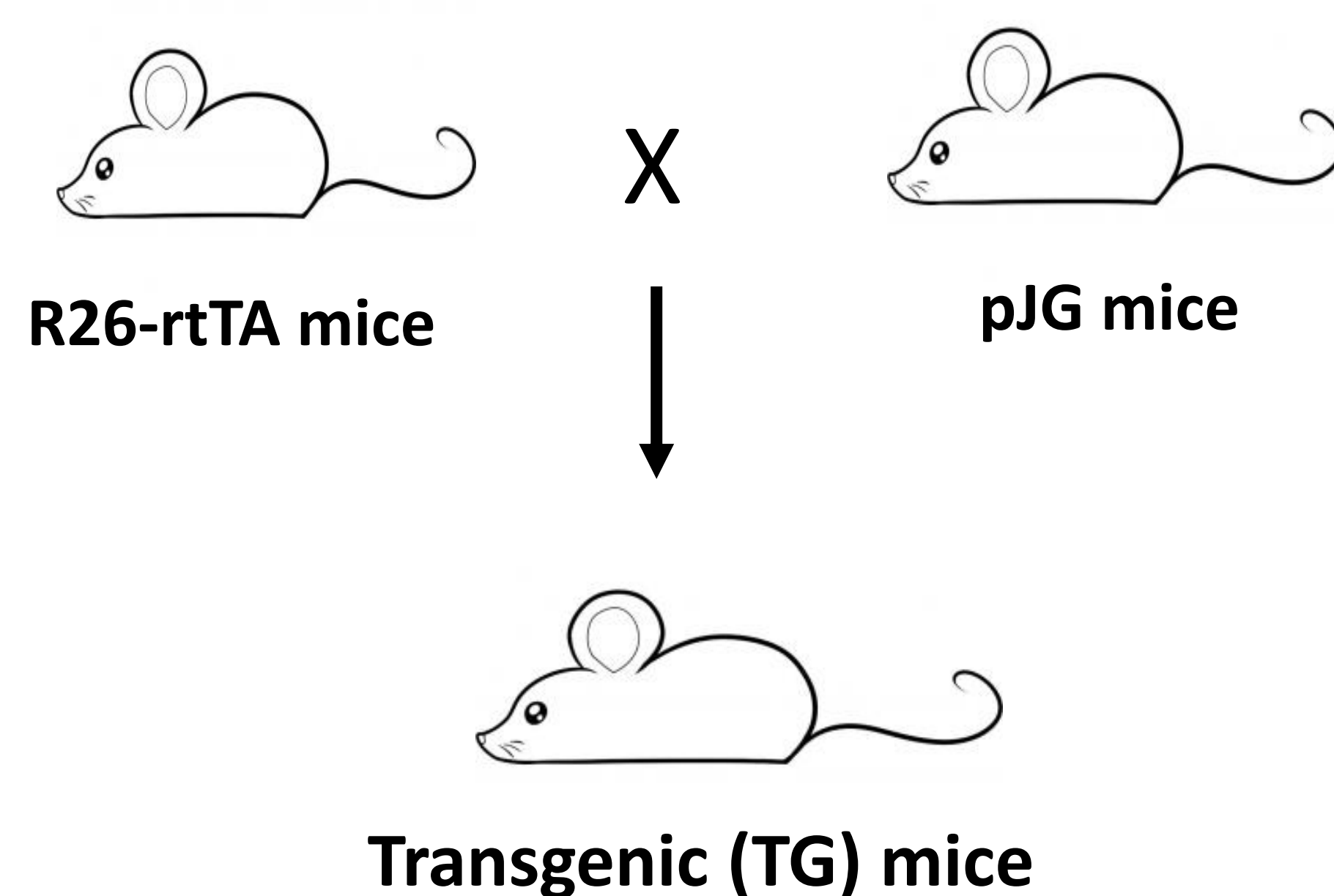
BACKGROUND

- Dilated cardiomyopathy causes a decrease in the blood pumping function of heart.
- It is caused due to the enlargement and weakness of the left ventricle of the heart which can lead to heart failure and death.
- From the previous research done in our lab, we have found that
 - Expression of miRNA 322/503 is higher in neonatal heart but decreases after birth throughout the adulthood and increases again during dilated cardiomyopathy.
 - Overexpression of miRNA- 322/503 causes heart failure.

OBJECTIVE

To monitor heart disease progression over four time points in a month caused due to overexpression of miRNA-322/503.

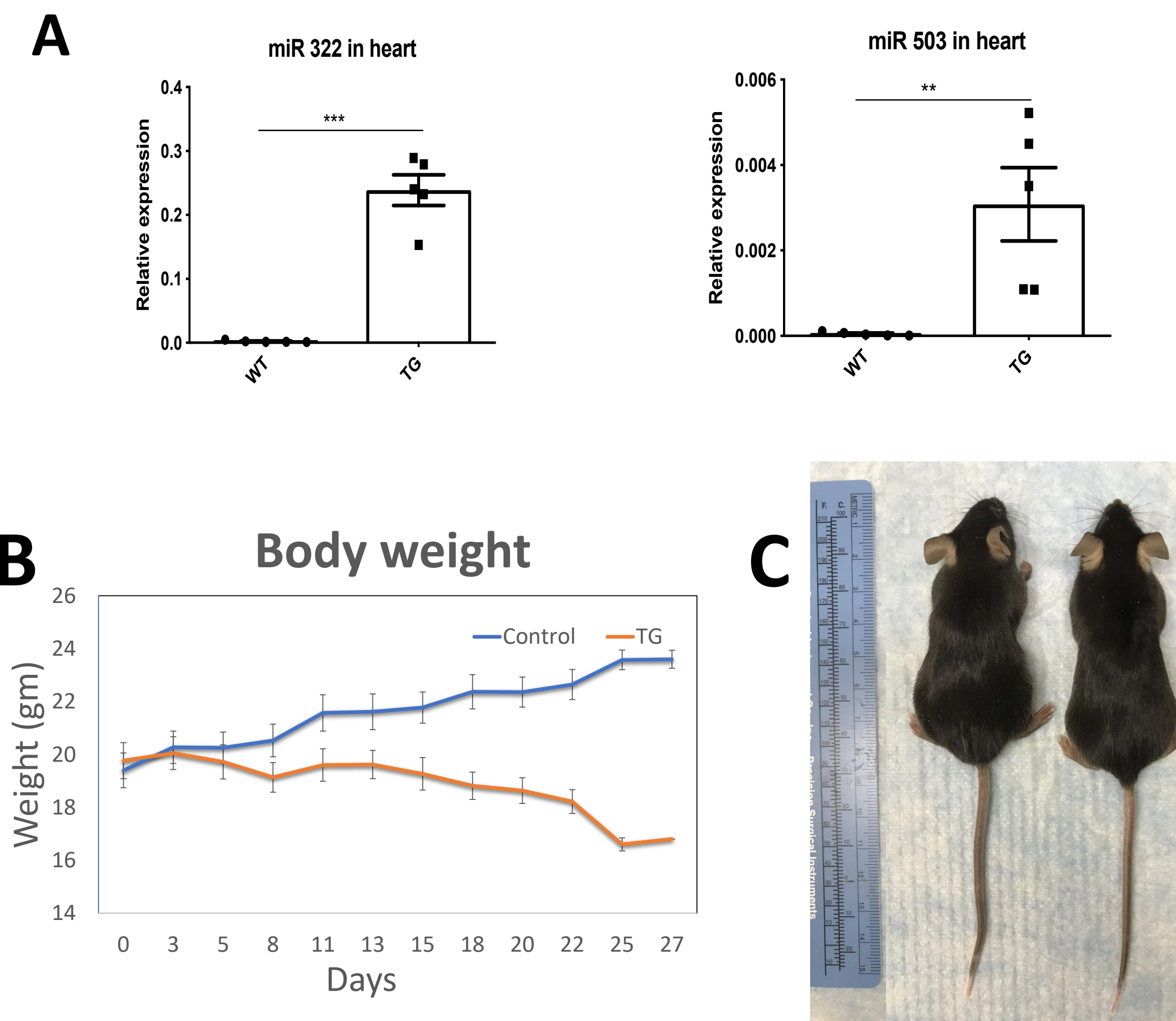
METHODS



- Mice models were given a doxycycline diet to induce the overexpression of miRNA- 322/503 for a month.
- Heart specific tissue were collected at different time point – D0, D7, D14, D21 and D28 for H&E Staining.
- Level of heart failure markers were analyzed through qPCR.

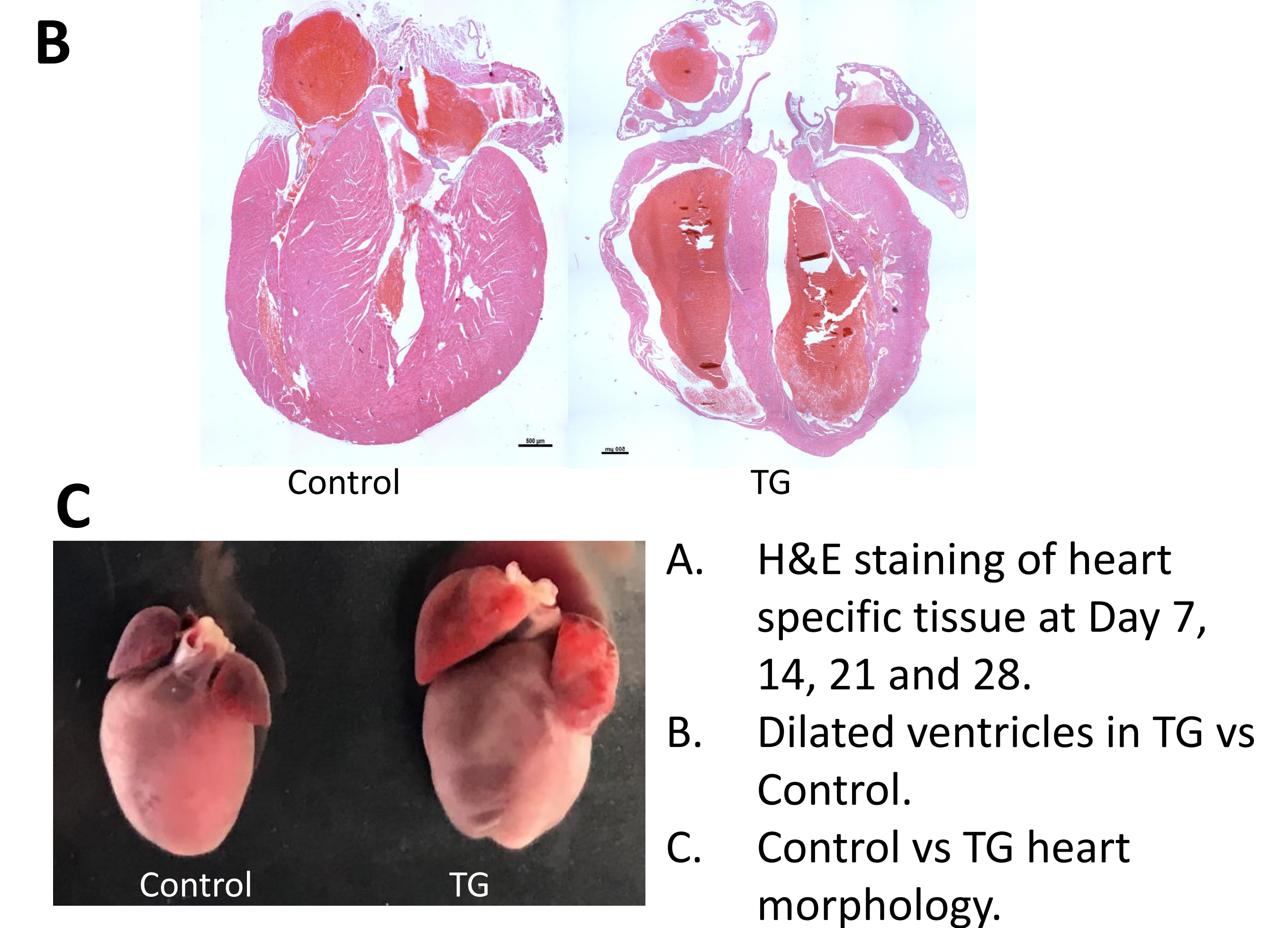
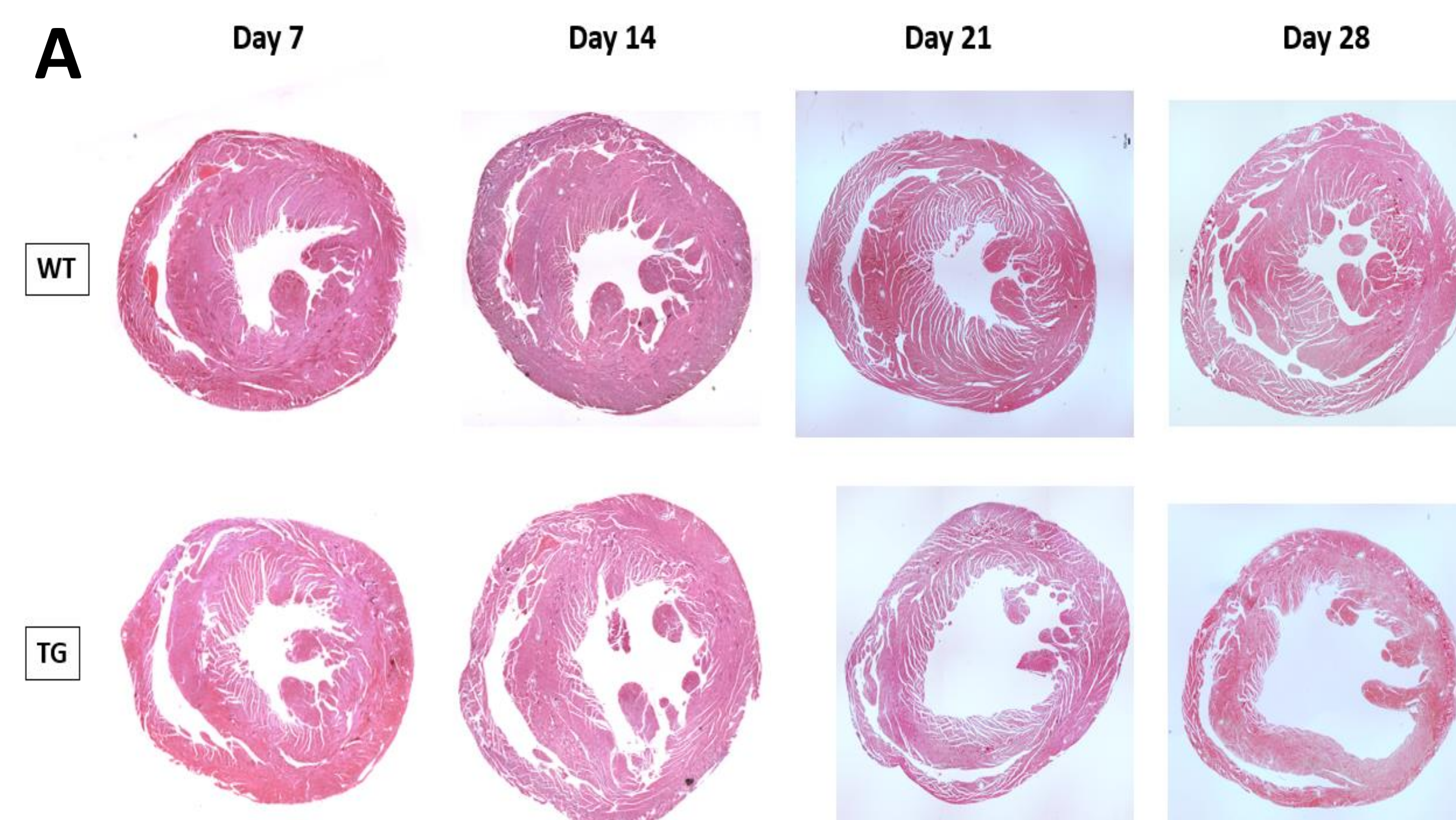
RESULTS

miRNA- 322/503 overexpression causes body weight loss

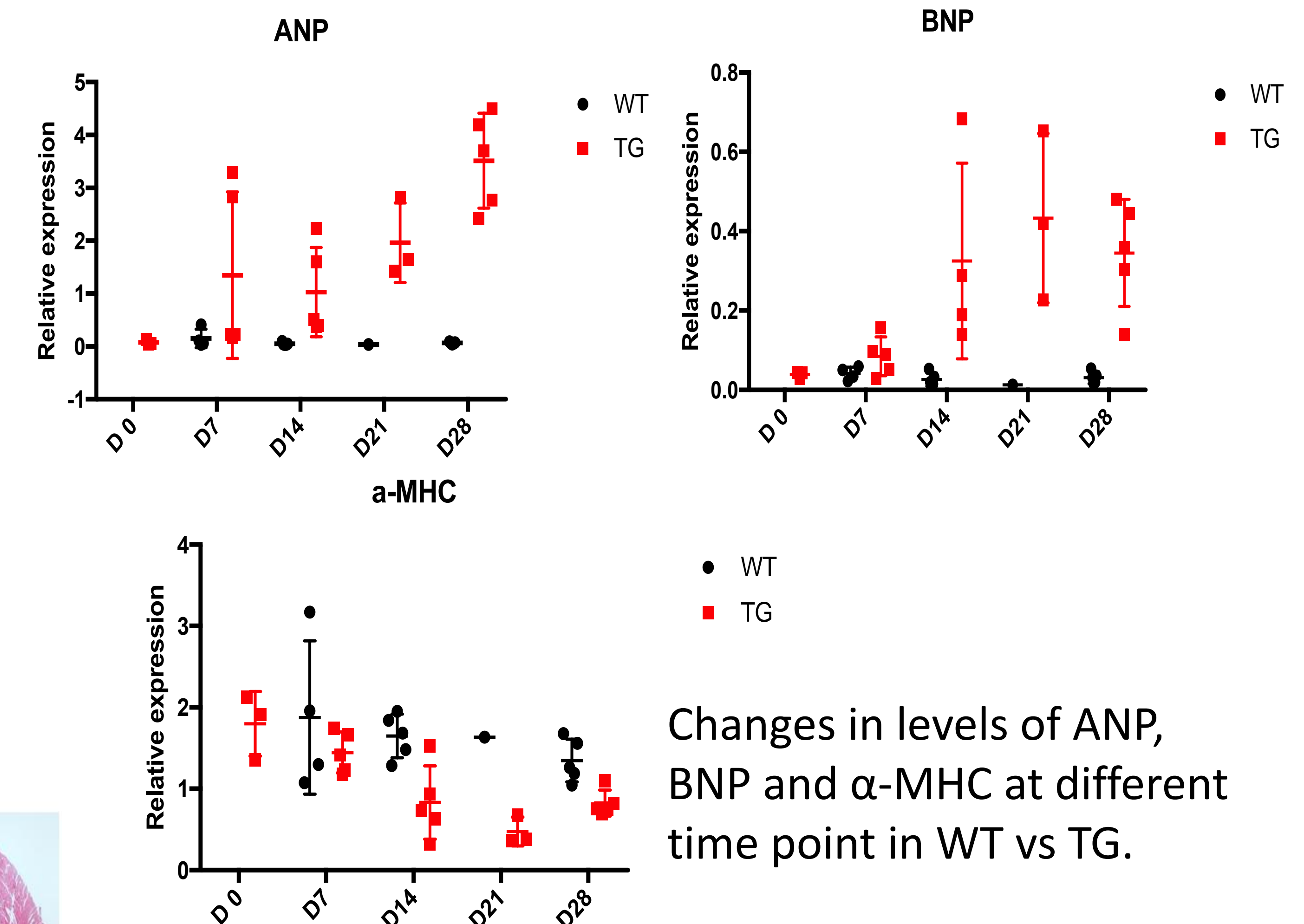


- miRNA- 322/503 levels in WT vs TG.
- Total body weight of control and TG mice during a month of continuous dox induction. WT (n=7), TG (n=6)
- Body appearance of control (left) vs TG (right) after a month of dox treatment.

Change in heart morphology with miRNA- 322/503 overexpression



Changes in heart failure marker levels



Changes in levels of ANP, BNP and α-MHC at different time point in WT vs TG.

CONCLUSION

- Overexpression miRNA- 322/503 leads to loss of cardiac function and body weight.
- It results in the dilation of ventricular chambers and thinning of ventricular walls as the time progresses.
- It leads to an increase in cardiac stress markers (ANP, BNP) and decrease in α-MHC.