

# GATA transcription factors in Testicular Adrenal Rest Tumors (TART)

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## TART is hard to discriminate from Leydig cell tumor (LCT)

### TART:

- Most common cause of male infertility in congenital adrenal hyperplasia (CAH) patients
- Etiology largely unknown

### Similarities between TART and LCT:

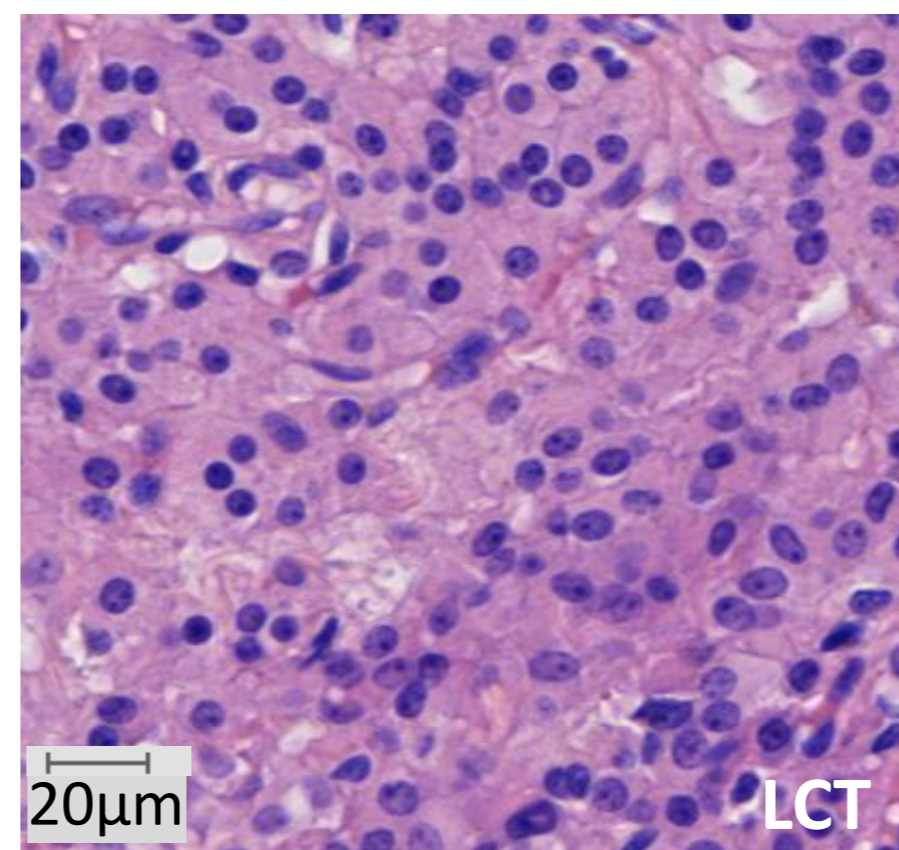
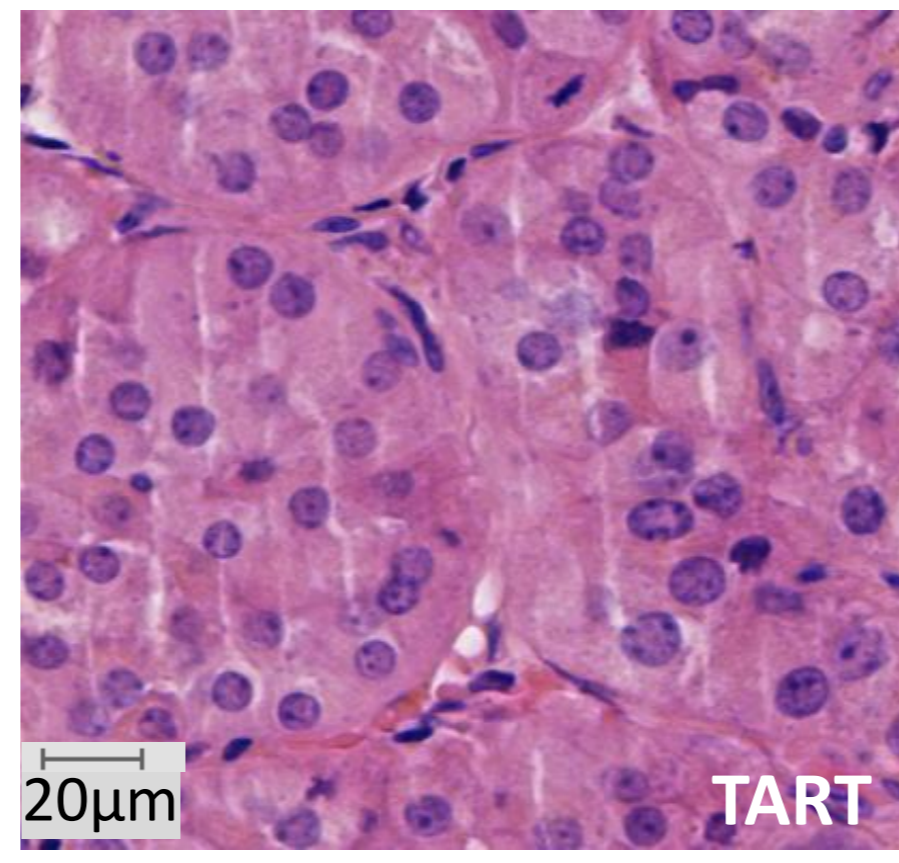
- Testicular tumors
- Causing infertility
- Steroidogenic cells

### Differences (TART – LCT):

- Location (rete testis - interstitial compartment)
- Bilateralism (83% - 3%)
- Reinke crystals (0% - 40%)
- Comorbidity (CAH and TART)

→ Cannot fully discriminate between TART and LCT

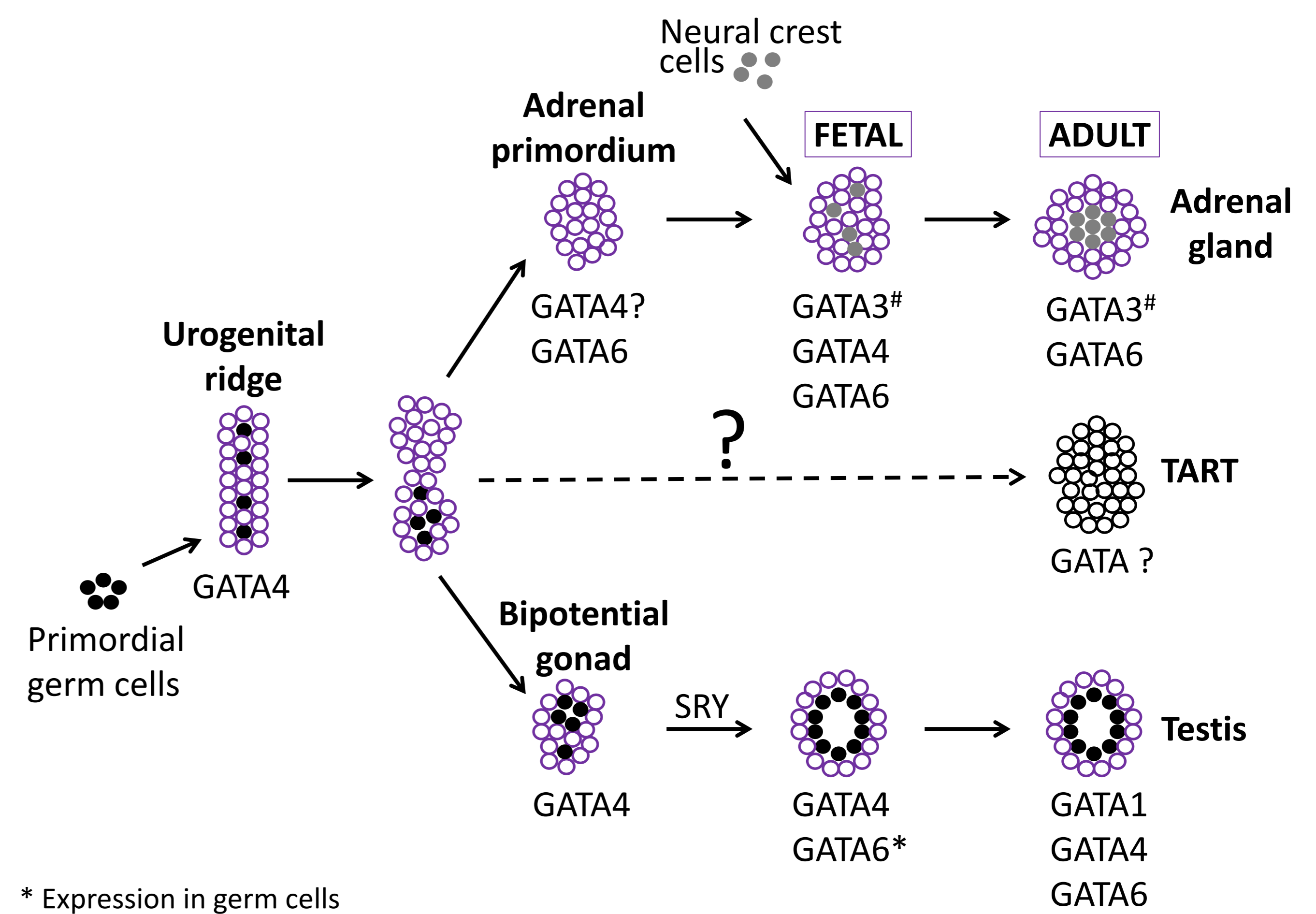
→ Leading to misdiagnosis and incorrect treatment



Steroidogenic cells with abundant pink cytoplasm  
 No marker available yet

## GATA transcription factors

Play an important role in eukaryotic development



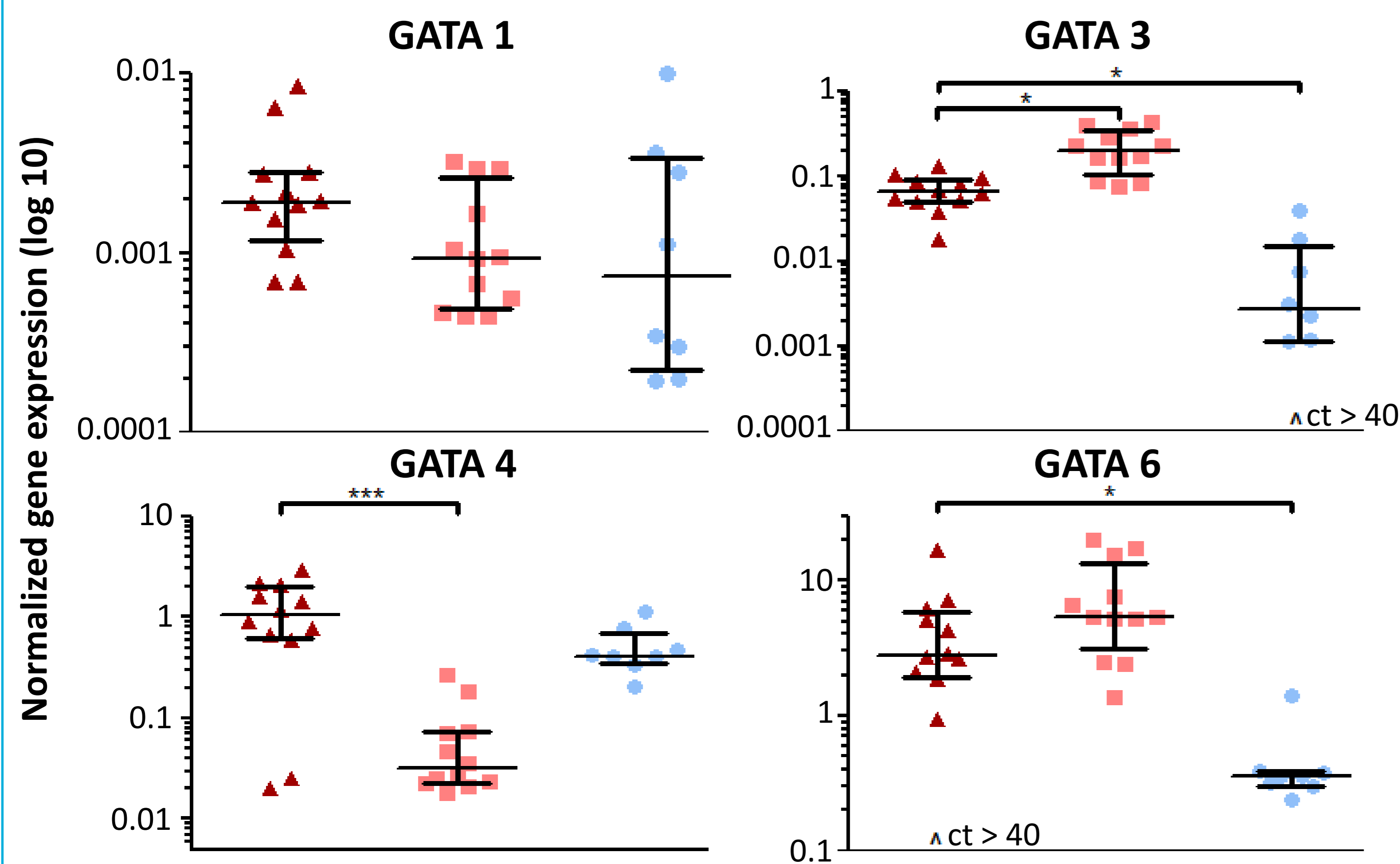
\* Expression in germ cells  
 # Expression specific to cells of the adrenal medulla

Figure adapted from Viger et al. 2008

## Aim: to determine if GATA transcription factors can discriminate TART from testis and LCT

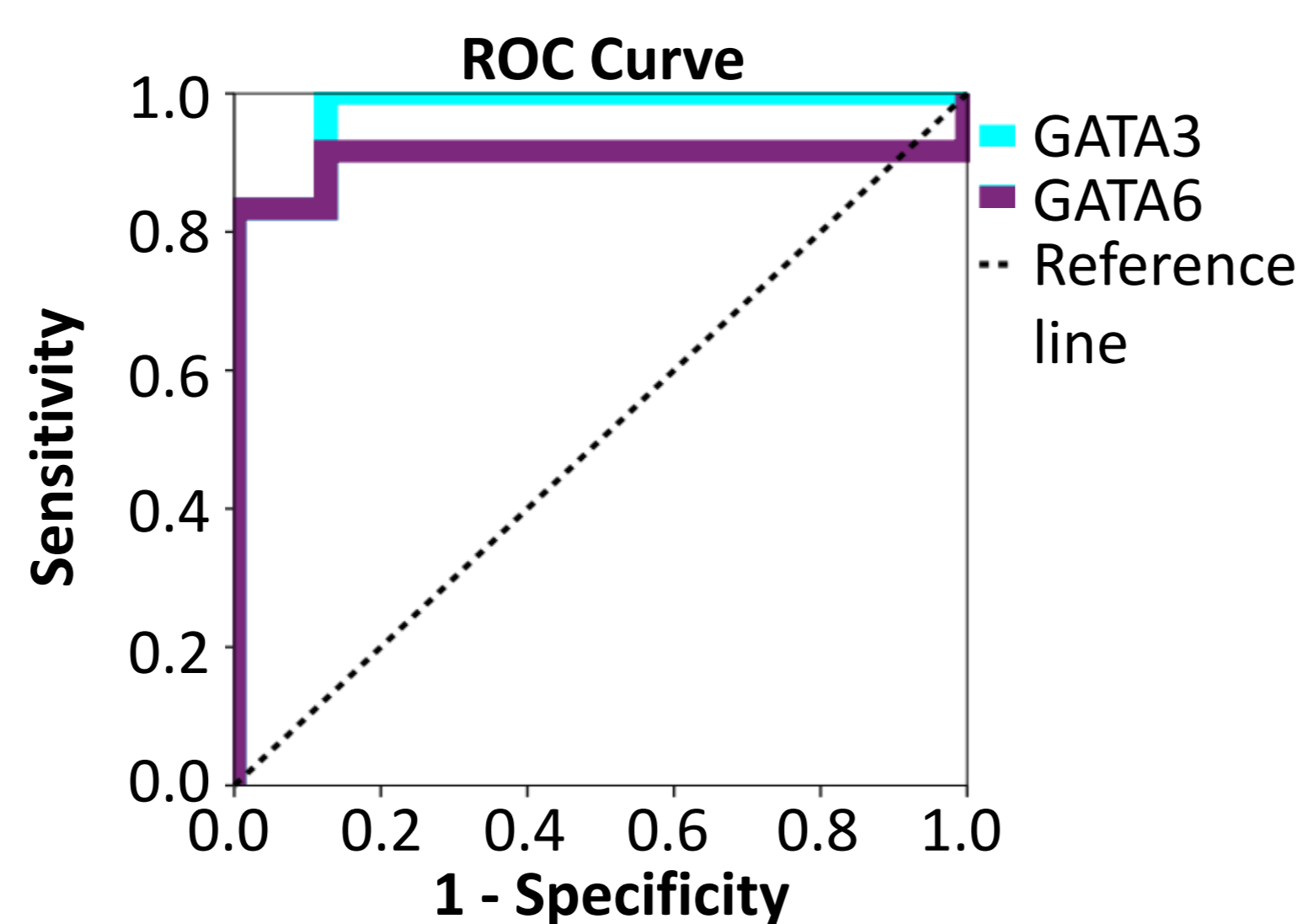
### 1) mRNA expression of GATA 3, 4, and 6 is up-regulated in TART

Gene expression analysis in TART, adrenal, and testis



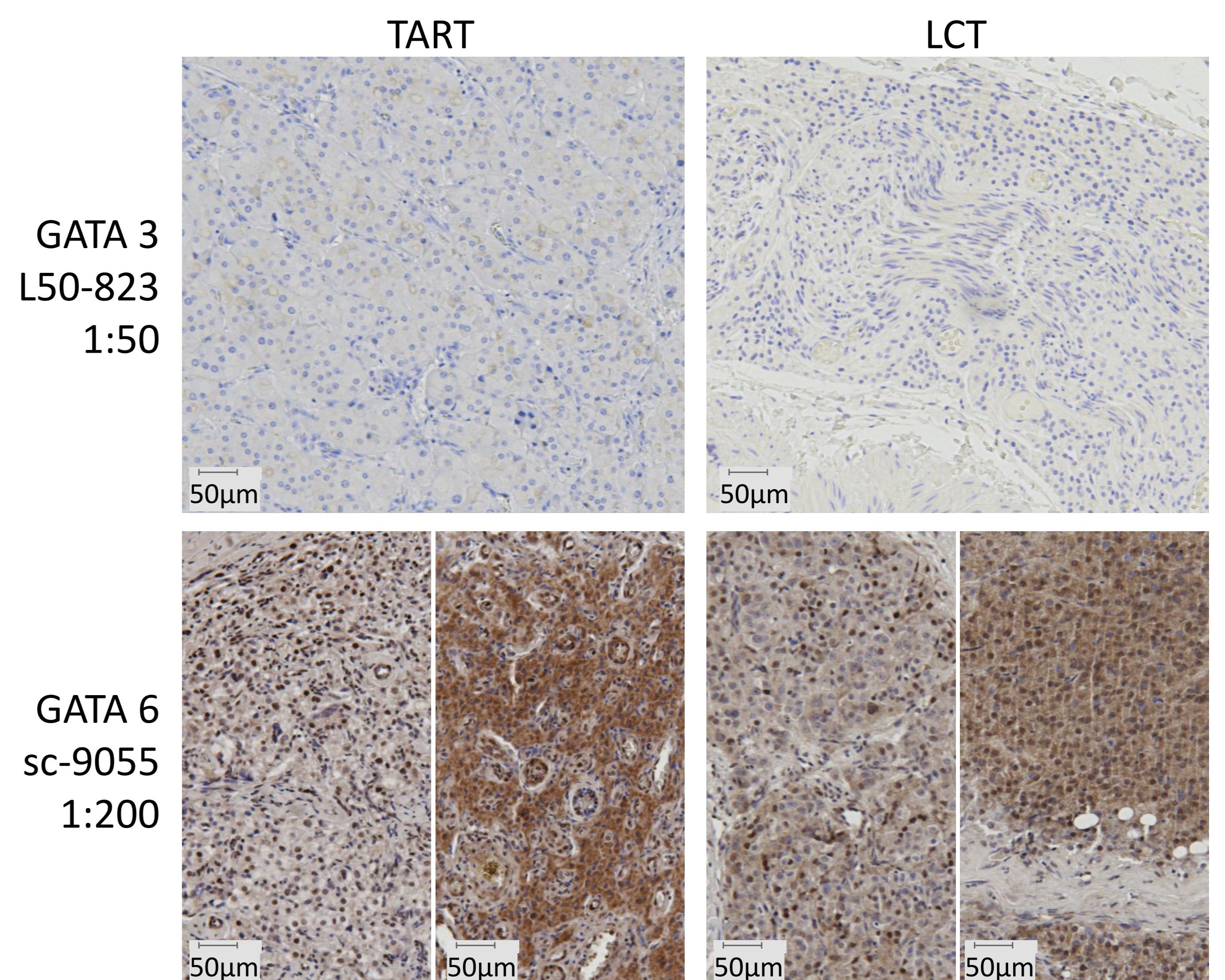
### 2) GATA3 and GATA6 discriminates TART from testis

- GATA3
  - AUC: 0.979
- GATA6
  - AUC: 0.906



### 3) GATA3 and GATA6 cannot discriminate TART from LCT

- 16x TART tissue, 4x benign LCT, 3x malignant LCT
- ABC, DAB with hematoxylin counterstain



## Conclusion

GATA3 and GATA6:

- mRNA can discriminate between testis and TART
- Protein expression (IHC) cannot discriminate between TART and LCT

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 No conflicts of interest

