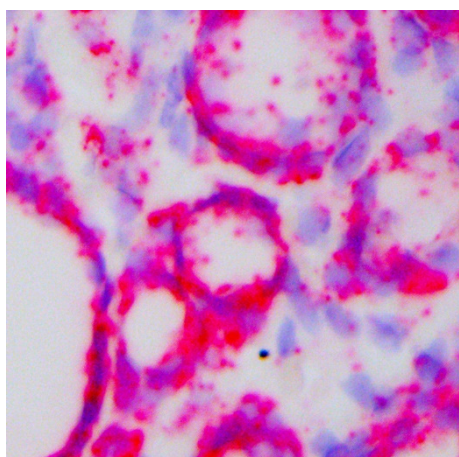


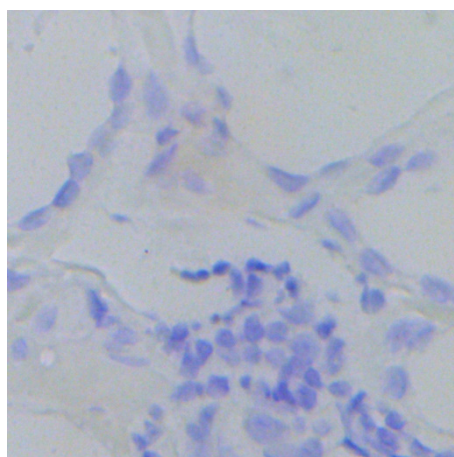
Fig. S1. Quality control verification process for the QCIGISH method.

**A**



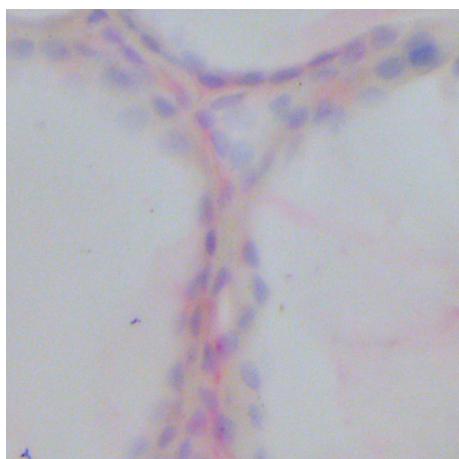
Positive (PPIB) control

**B**



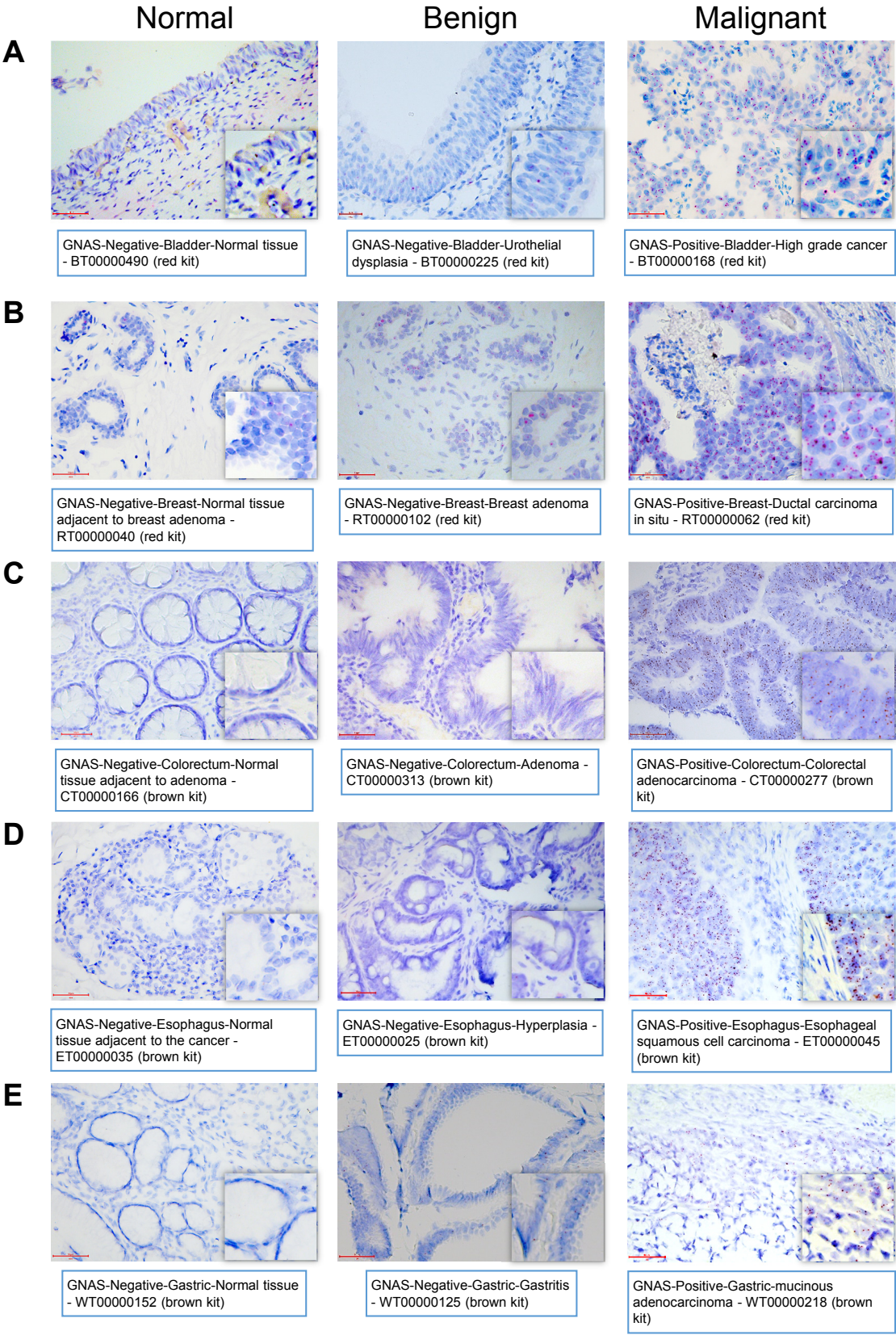
Negative (dapB) control

**C**



PPIB probe staining  
after RNase treatment

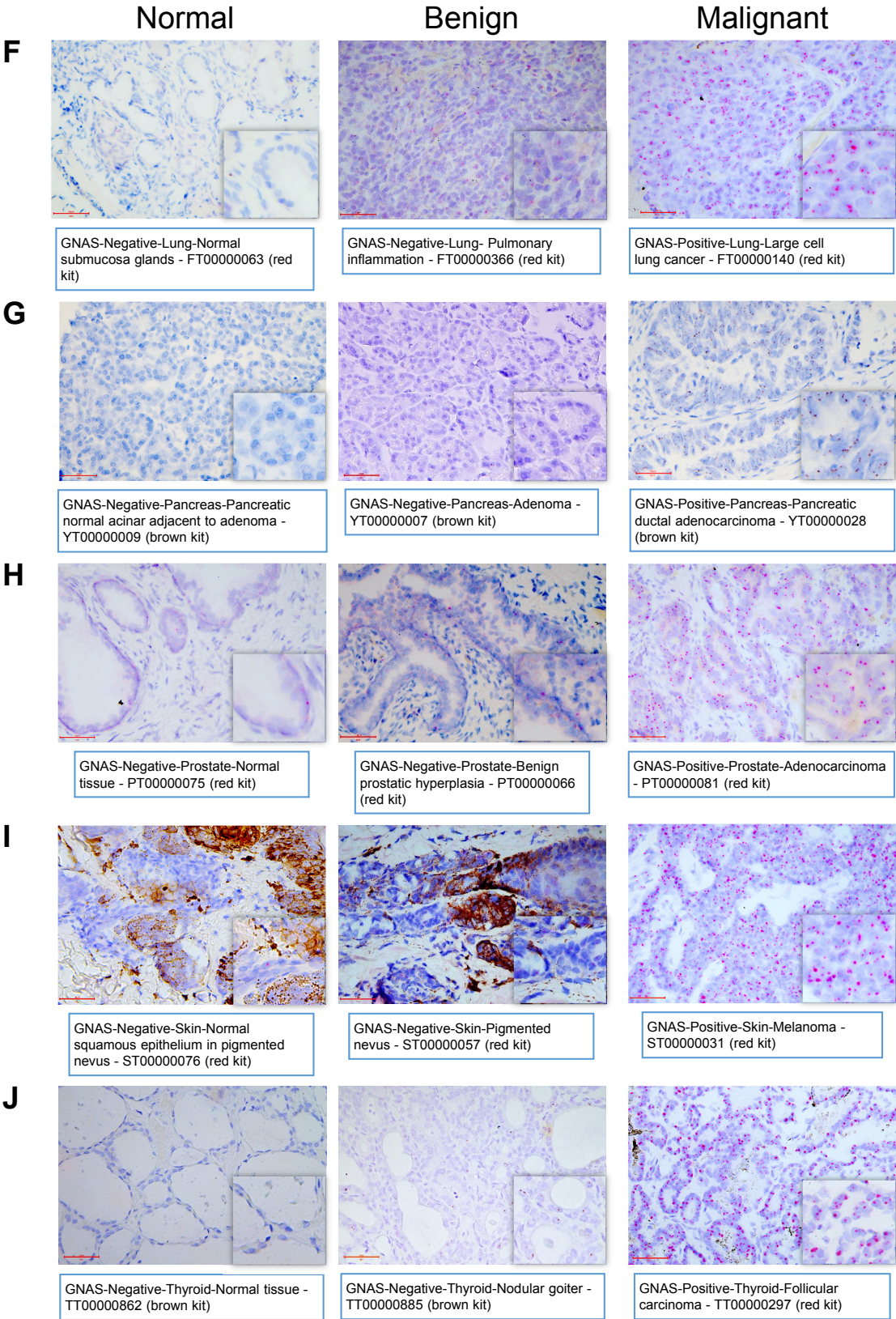
Fig S2. Representative photomicrographs of imprinted gene *GNAS* expression in normal, benign and malignant tumor samples



Different chromogenic kits (red or brown) produce different color of signals, but the results are the same.



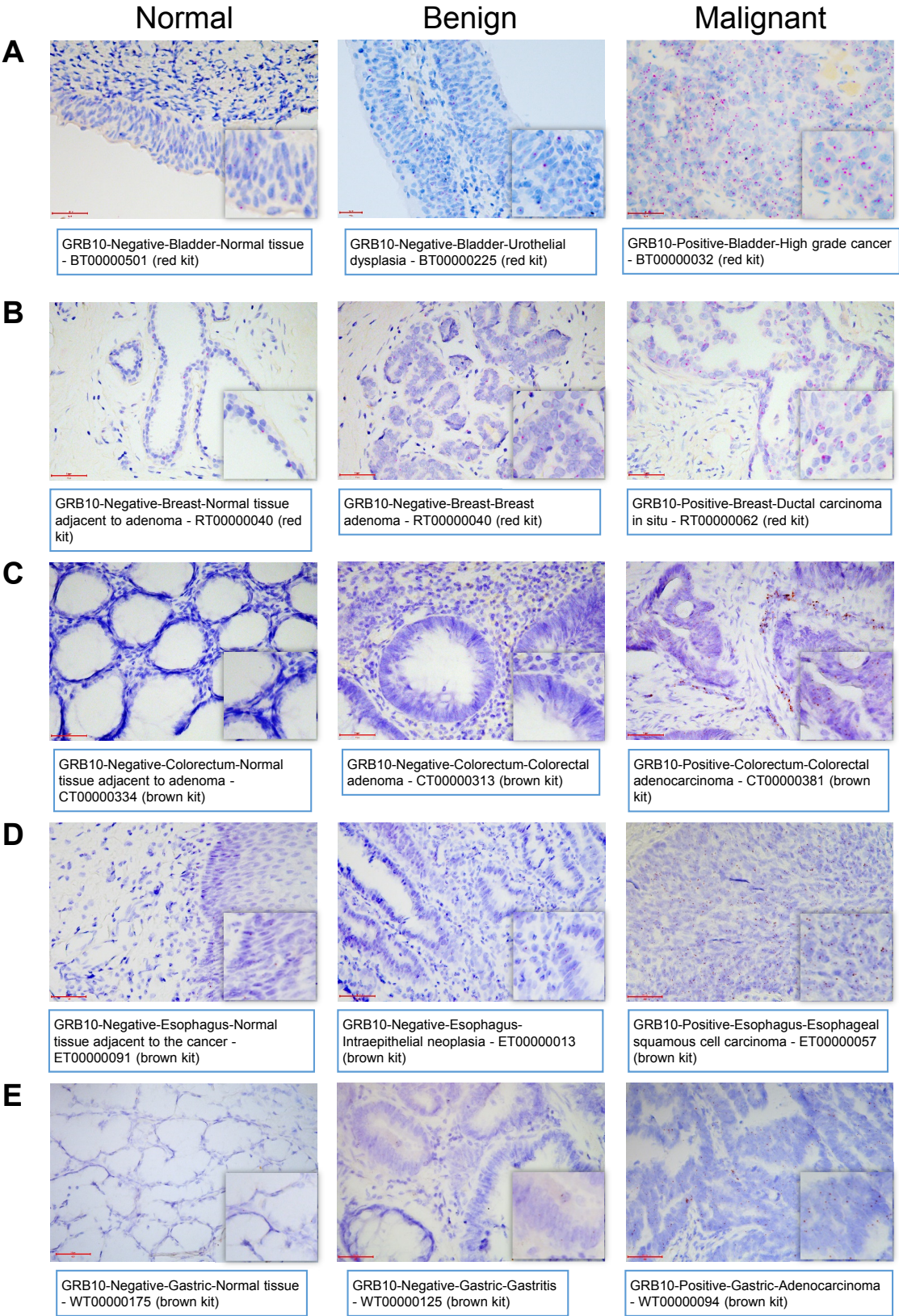
Fig S2. Representative photomicrographs of imprinted gene *GNAS* expression in normal, benign and malignant tumor samples



Different chromogenic kits (red or brown) produce different color of signals, but the results are the same.



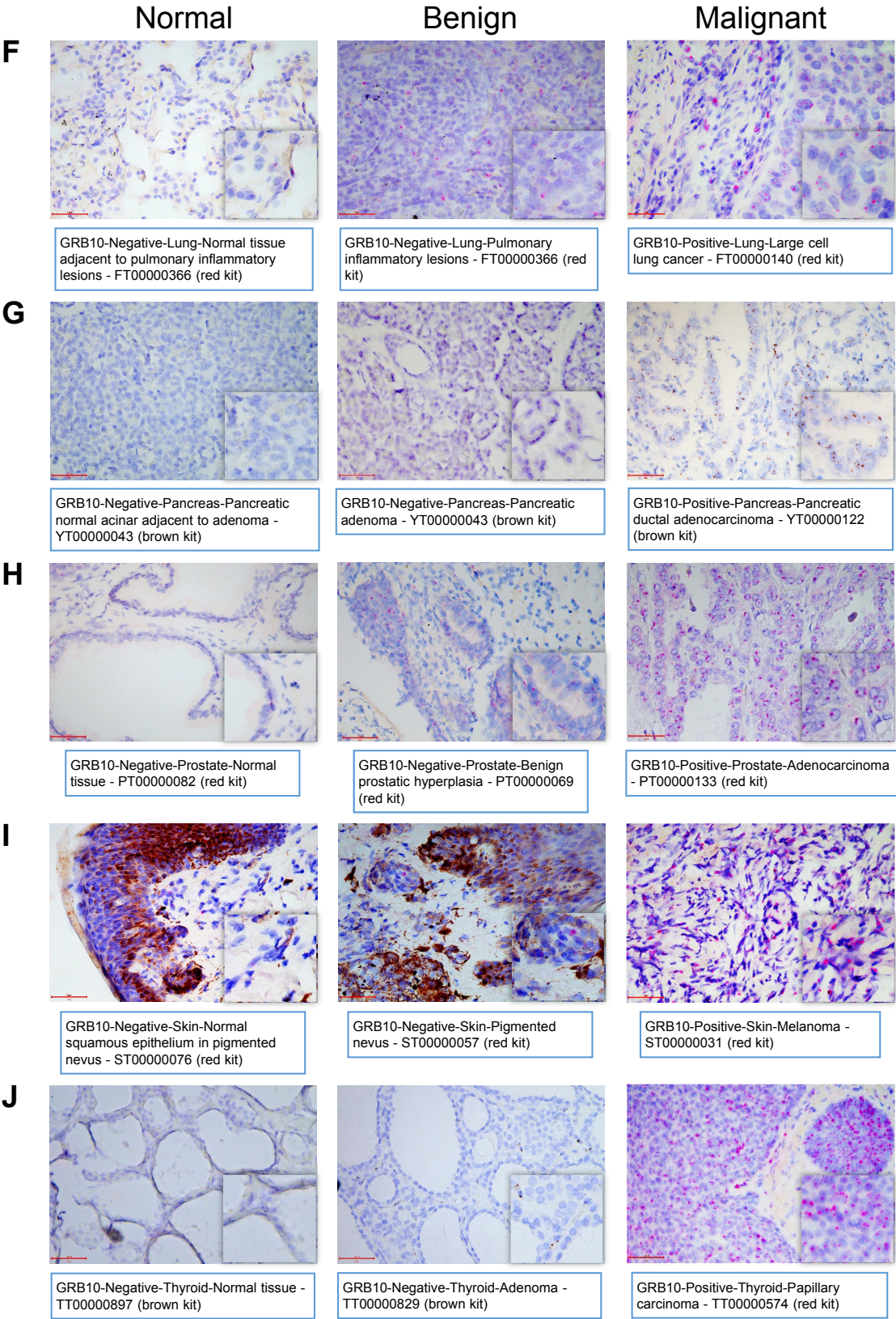
Fig S3. Representative photomicrographs of imprinted gene *GRB10* expression in normal, benign and malignant tumor samples



Different chromogenic kits (red or brown) produce different color of signals, but the results are the same.



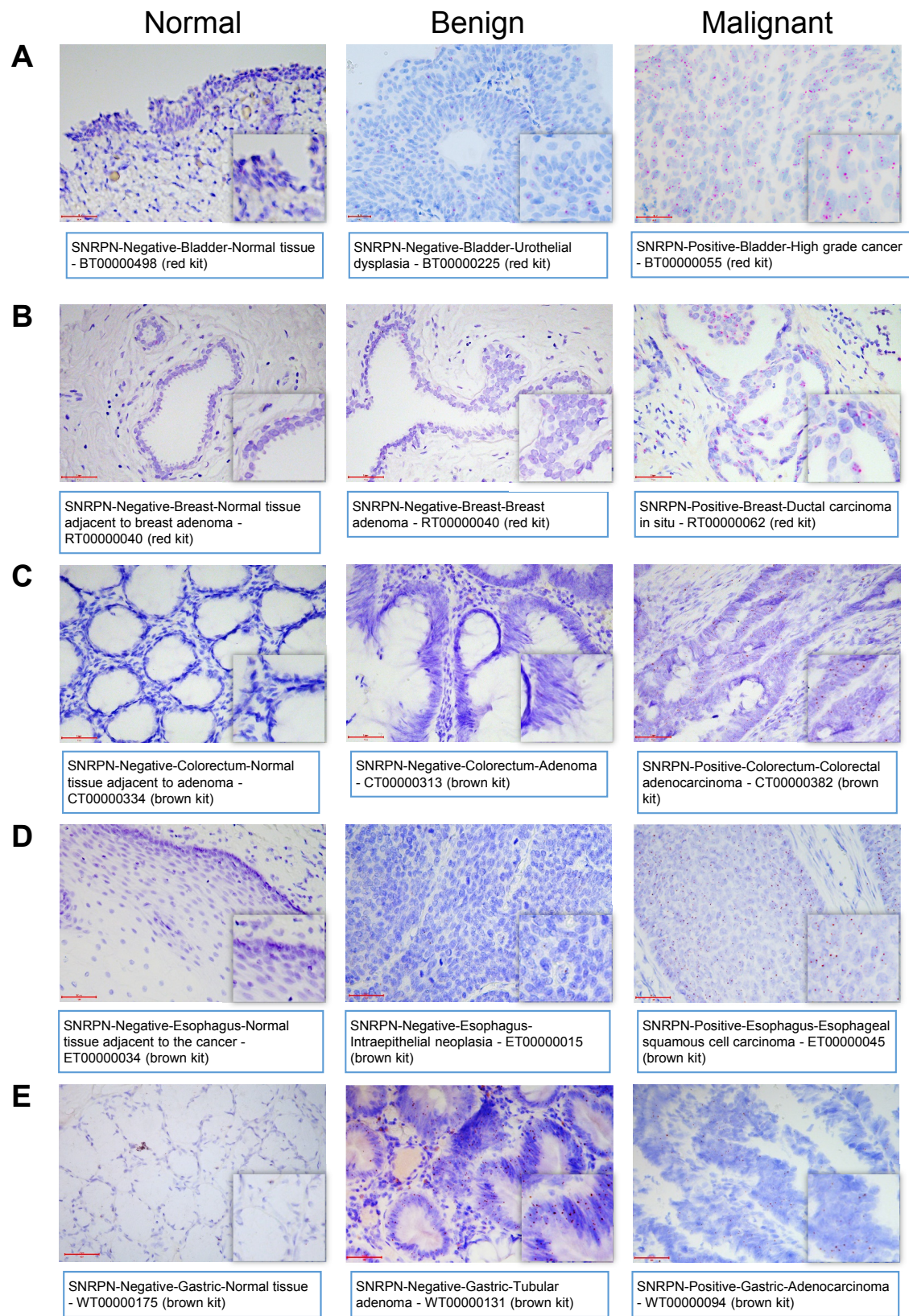
Fig S3. Representative photomicrographs of imprinted gene *GRB10* expression in normal, benign and malignant tumor samples



Different chromogenic kits (red or brown) produce different color of signals, but the results are the same.



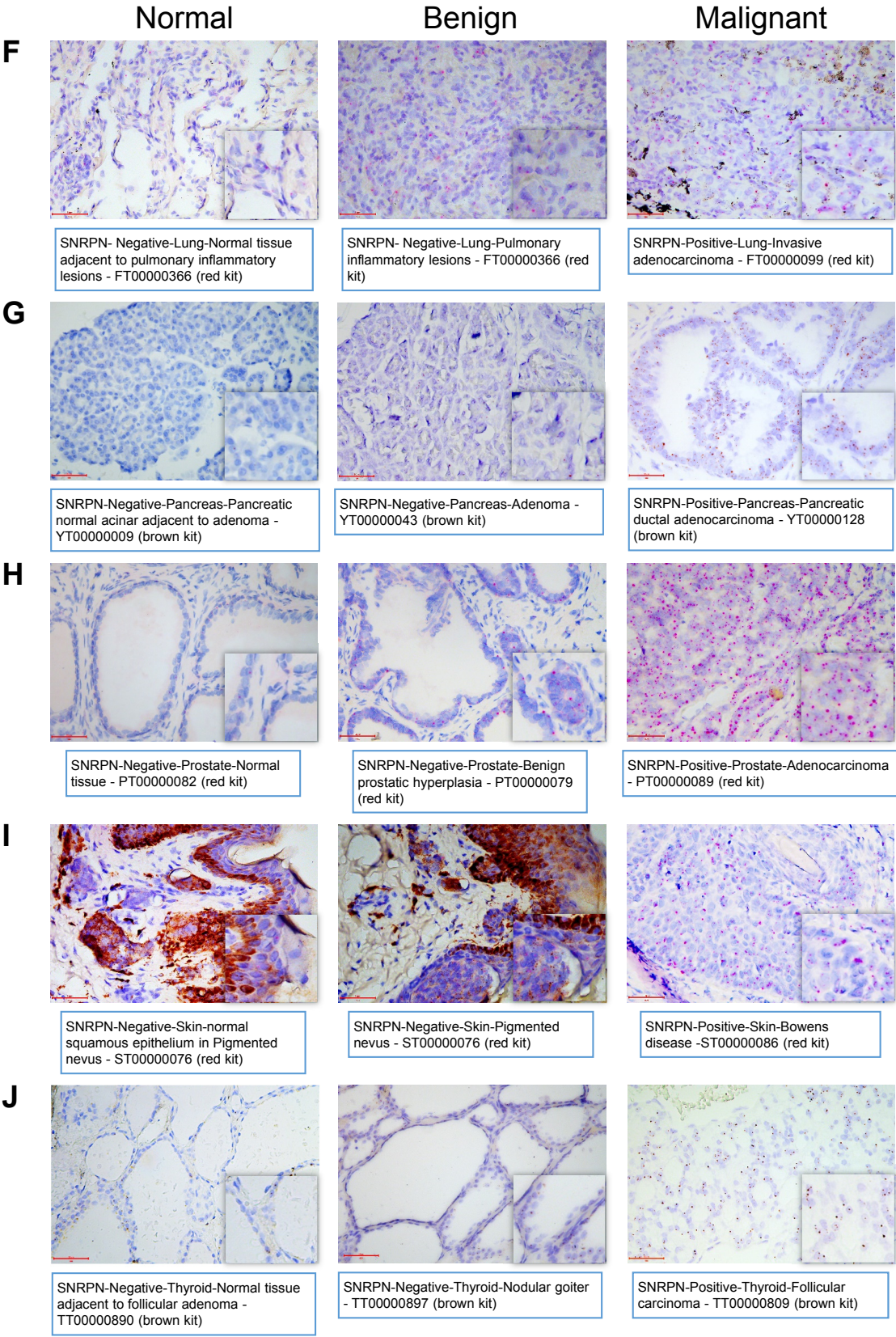
Fig S4. Representative photomicrographs of imprinted gene *SNRPN* expression in normal, benign and malignant tumor samples



Different chromogenic kits (red or brown) produce different color of signals, but the results are the same.



Fig S4. Representative photomicrographs of imprinted gene *SNRPN* expression in normal, benign and malignant tumor samples



Different chromogenic kits (red or brown) produce different color of signals, but the results are the same.

Fig. S5. ROC curves for gene screening set.

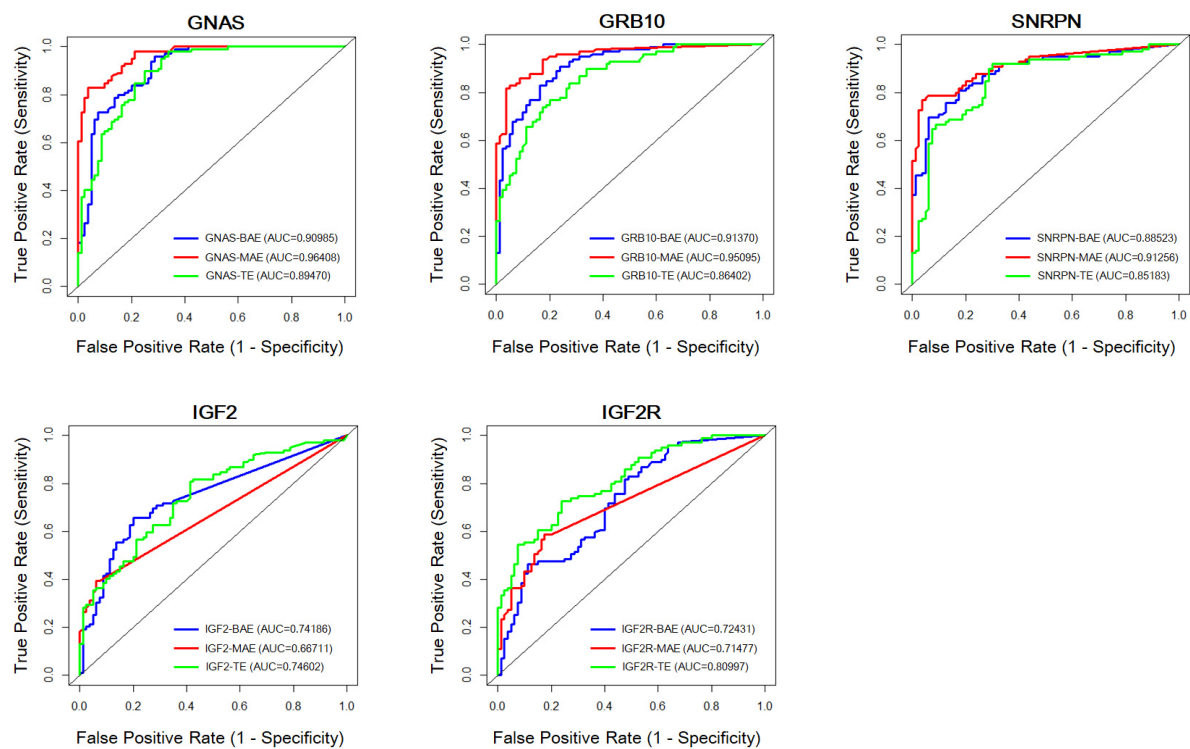
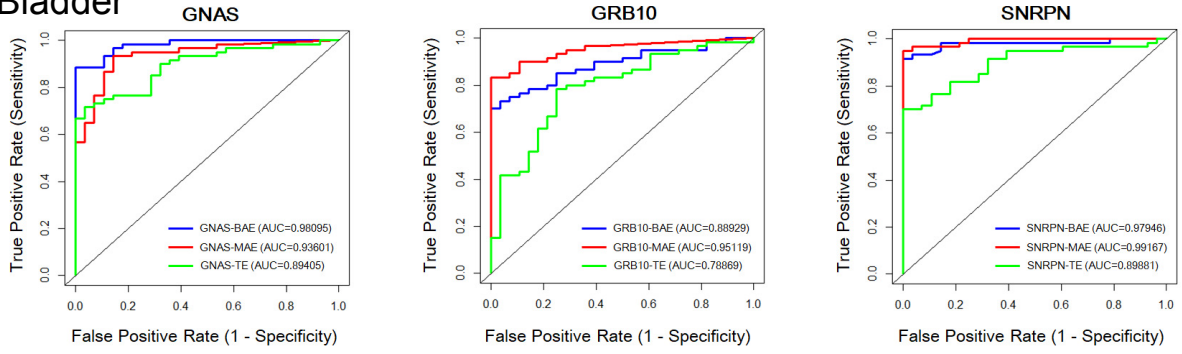


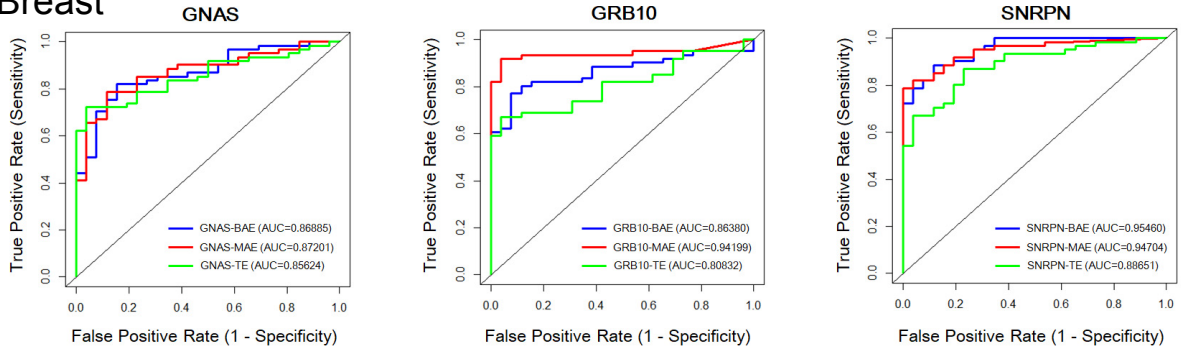


Fig. S6. ROC curves for cancer-specific diagnostic model building set.

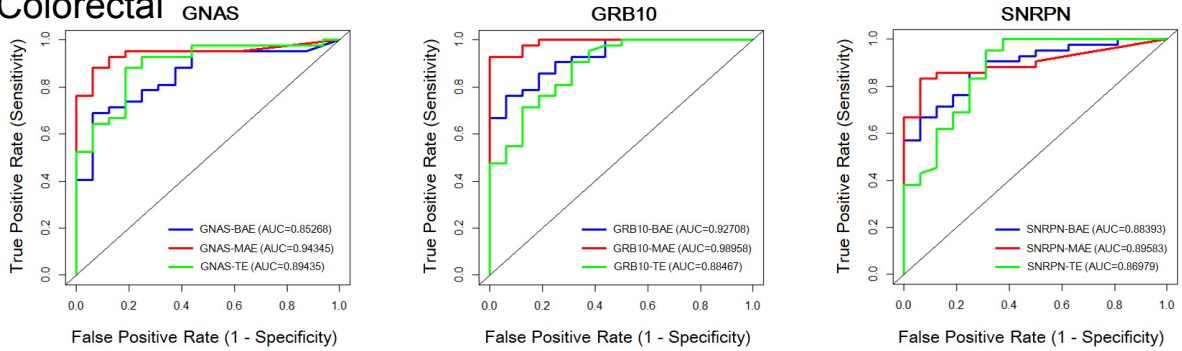
### A. Bladder



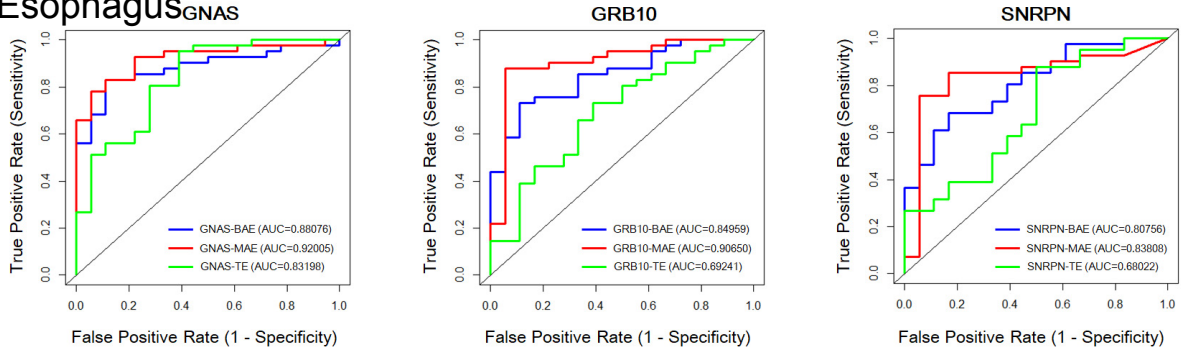
### B. Breast



### C. Colorectal



### D. Esophagus



### E. Gastric

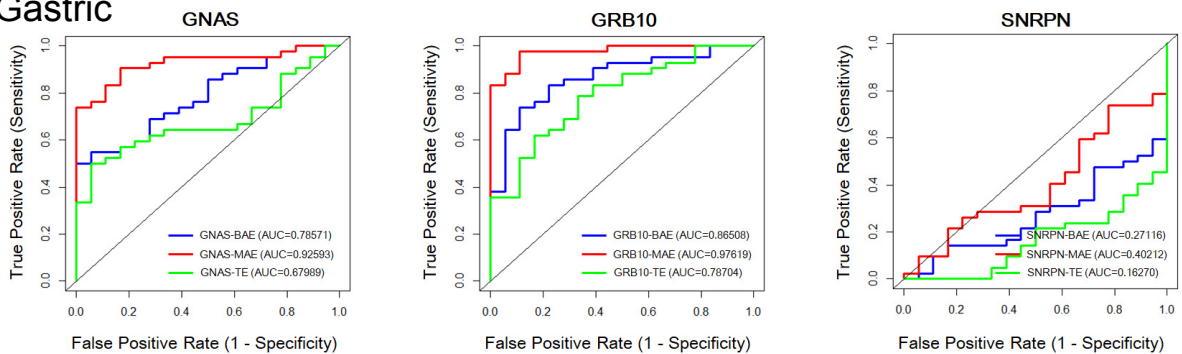
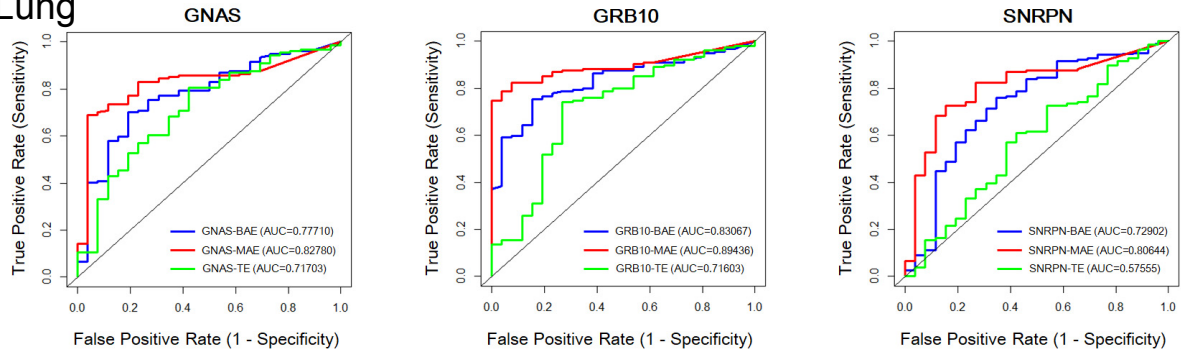
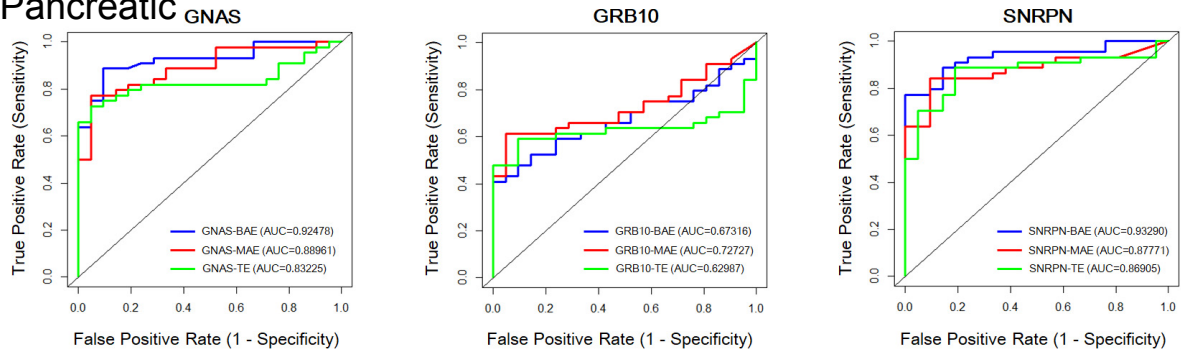


Fig. S6. ROC curves for cancer-specific diagnostic model building set.

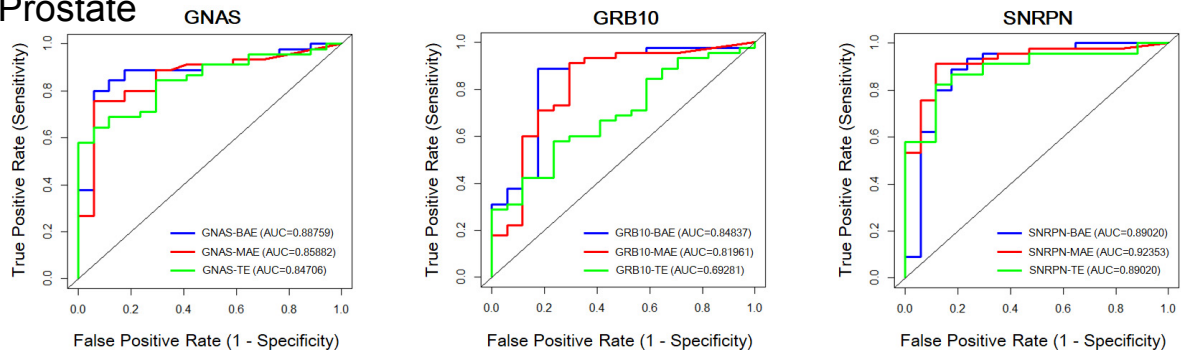
## F. Lung



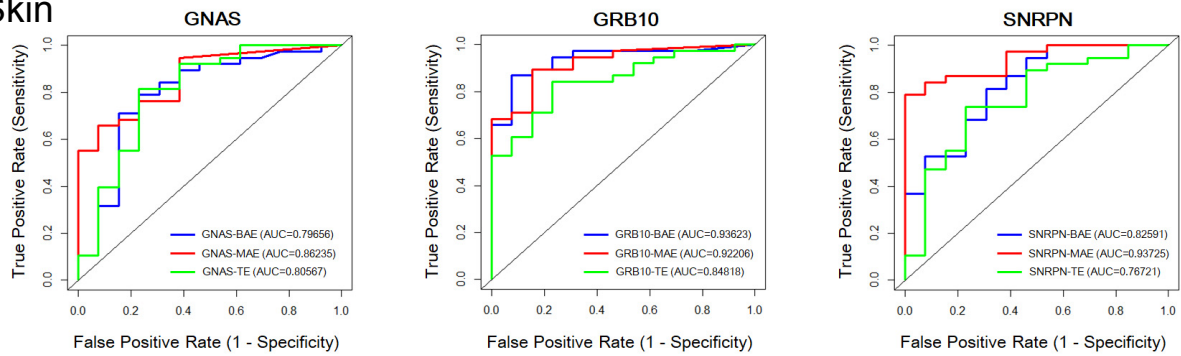
## G. Pancreatic



## H. Prostate



## I. Skin



## J. Thyroid

