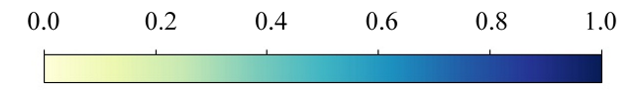
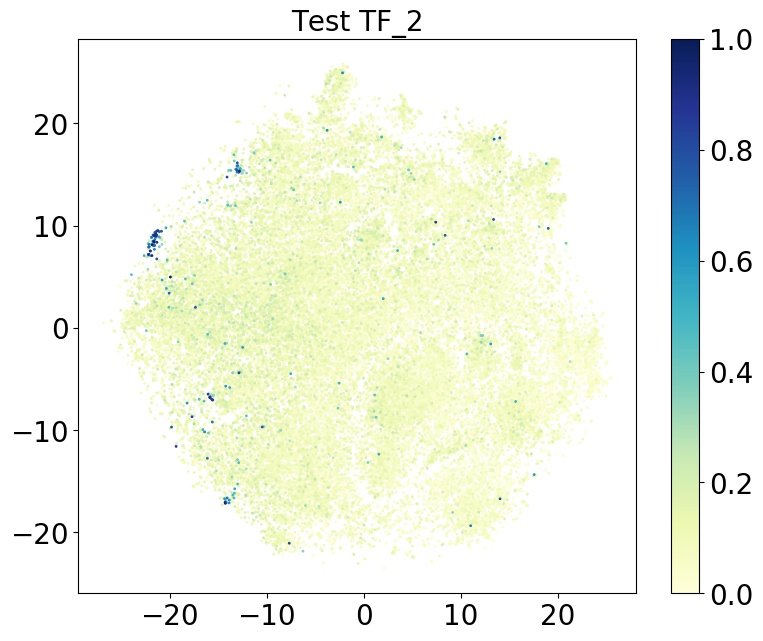
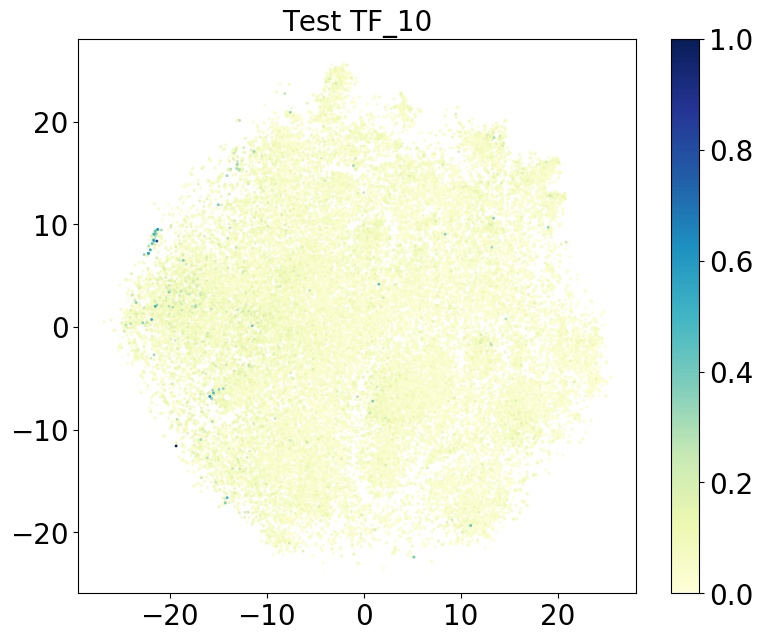
**Clustering the target scatter plots according to TFs’ family and Pearson correlation coefficient**

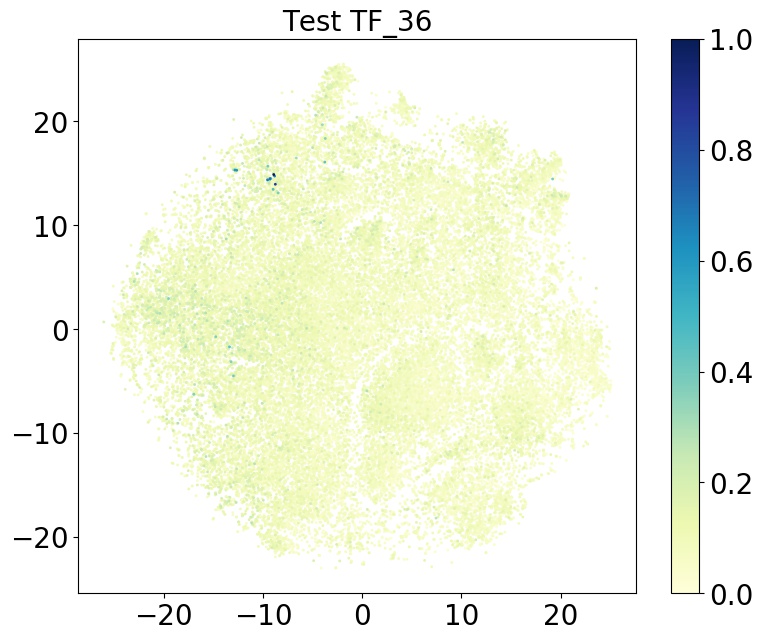
The bold text above plots indicates the family to which these TFs belong. Plots outlined by blue lines are selected to be the representative of family to constitute PBM\_20. The TF name and Pearson correlation coefficient of binding intensities of paired TF are listed below plots.

All 66 TFs from the PBM data set were grouped by their families in general. In particular, TFs in the family, C2H2 ZF, were further divided into subgroups according to the Pearson correlation coefficient. Some TFs in different families with high PCC also clustered in the same group. The general cutoff of Pearson correlation coefficient is 0.4. As we can see, plots of TFs in different TF families has different patterns. In general, PBM\_20 is the subset of PBM\_66 without homologs.

The indicator of plots is below:

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**bZIP**

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**TF\_2: Dbp TF\_10: Nfil3 TF\_27: Xbp1 TF\_35: Atf3 TF\_36: Atf4**

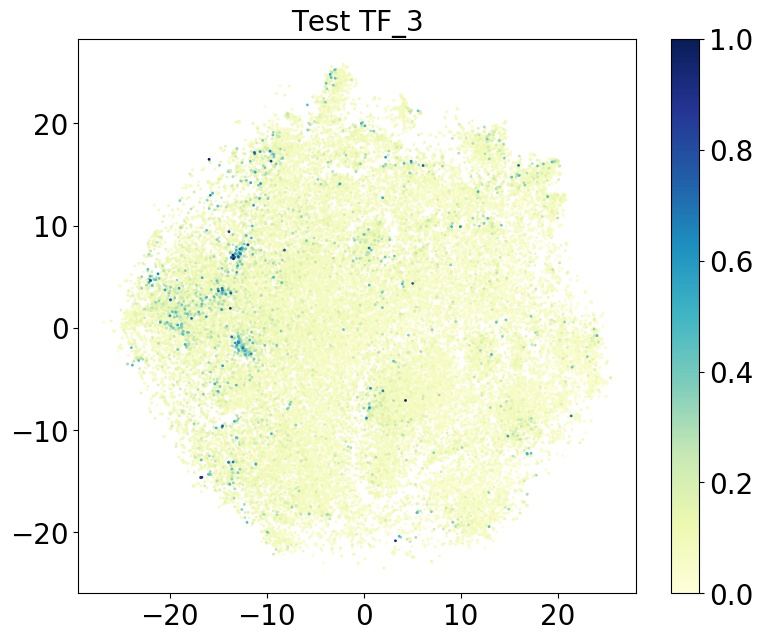
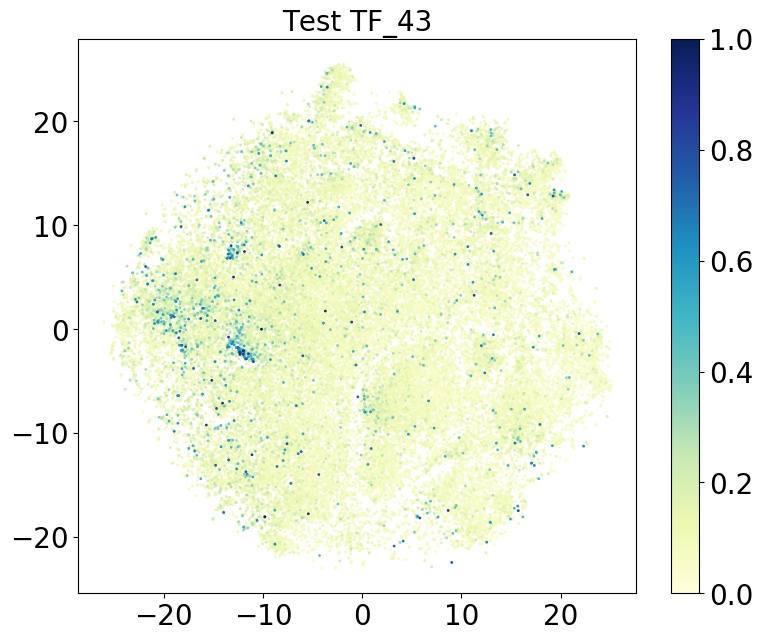
TF\_2, TF\_35: 0.420 TF\_2, TF\_36: 0.506 TF\_2, TF\_10: 0.685

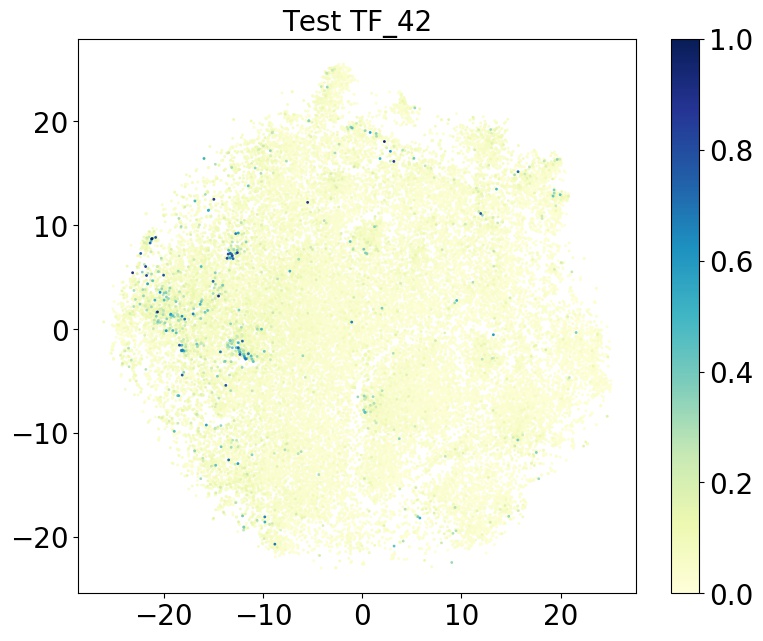
TF\_2, TF\_27: 0.342 TF\_35, TF\_36: 0.636 TF\_10, TF\_35: 0.462

TF\_27, TF\_35: 0.519 TF\_10, TF\_36: 0.586 TF\_27, TF\_36: 0.497

TF\_10, TF\_27: 0.339

**Forkhead**

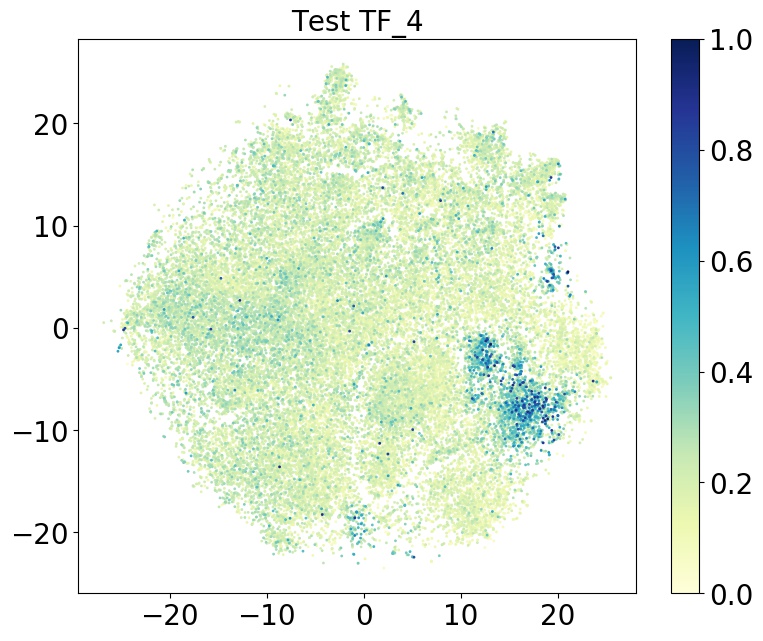
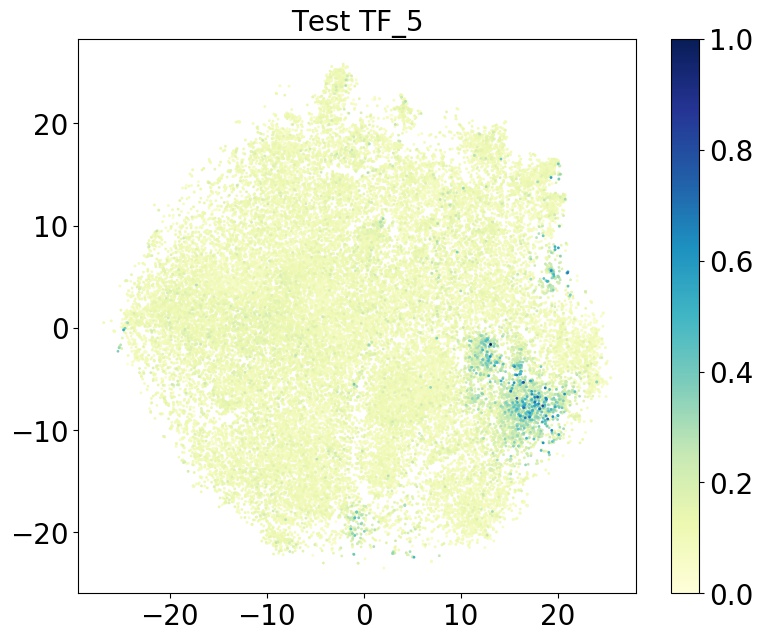
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**TF\_3: Foxo6 TF\_42: Foxc2 TF\_43: Foxg1**

TF\_3, TF\_42: 0.720 TF\_3, TF\_43: 0.784 TF\_42, TF\_43: 0.727

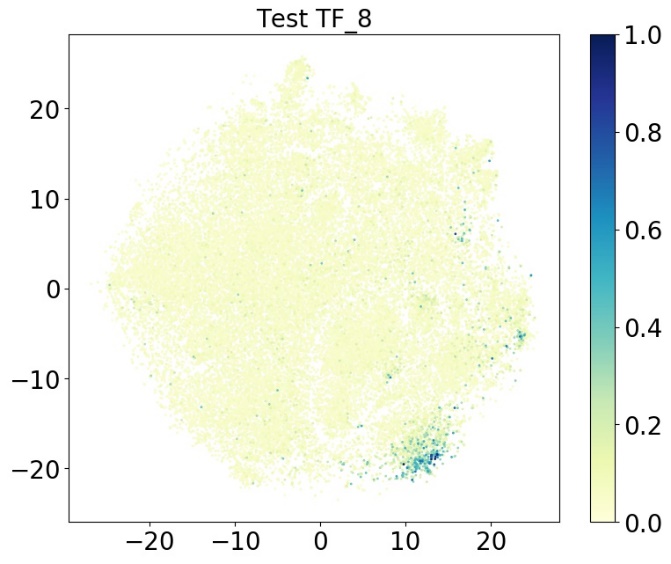
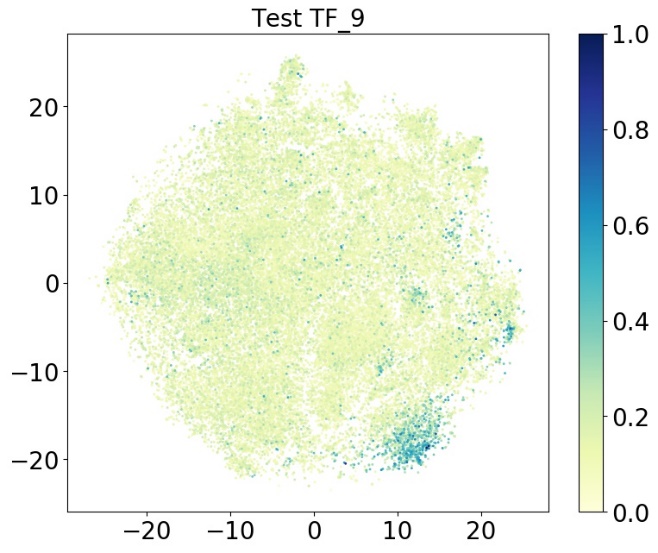
**C2H2 ZF**

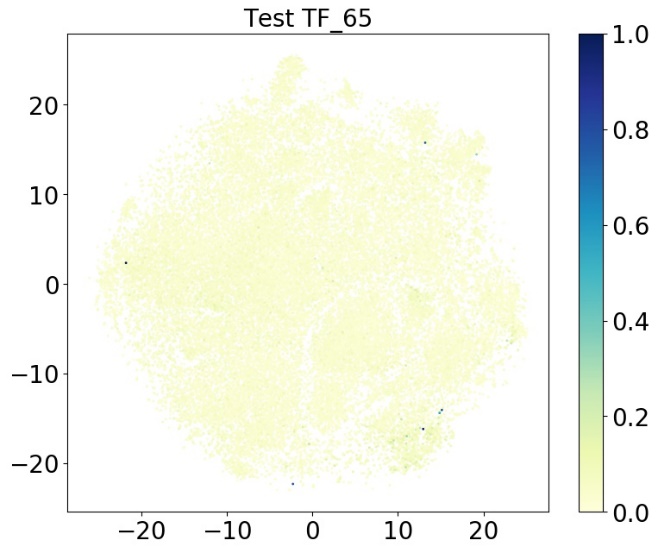
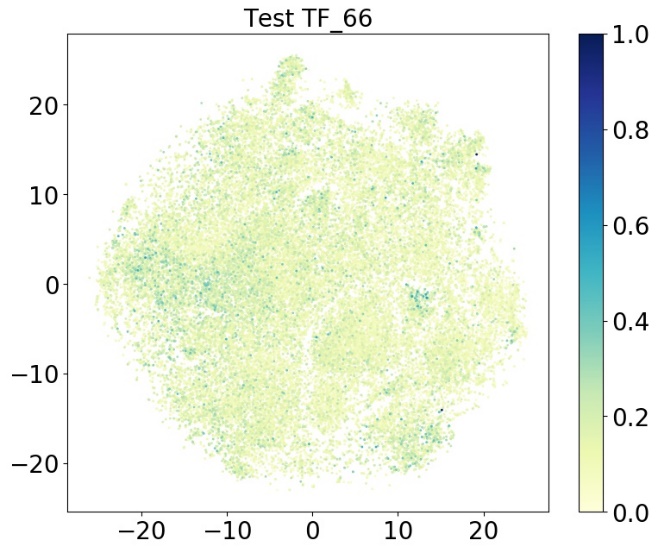
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**TF\_4: Klf12 TF\_5: Klf8**

TF\_4, TF\_5: 0.707

**C2H2 ZF**

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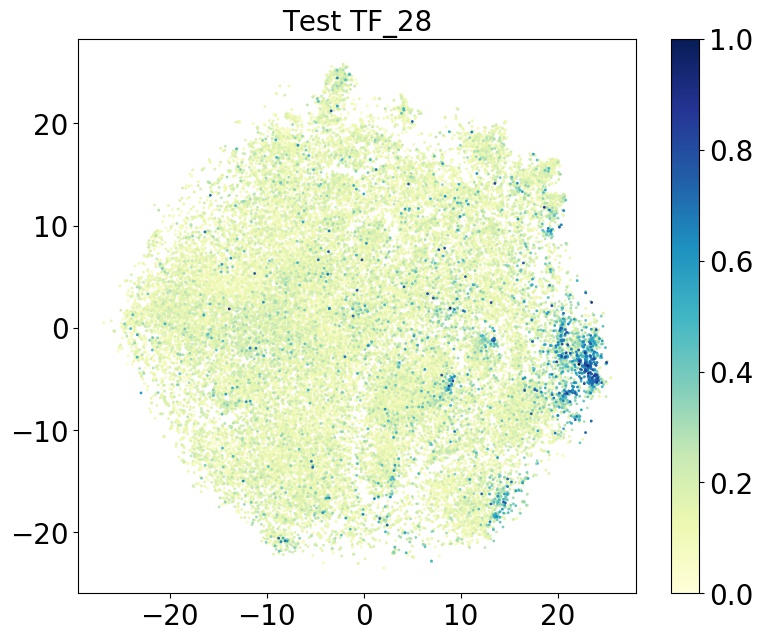
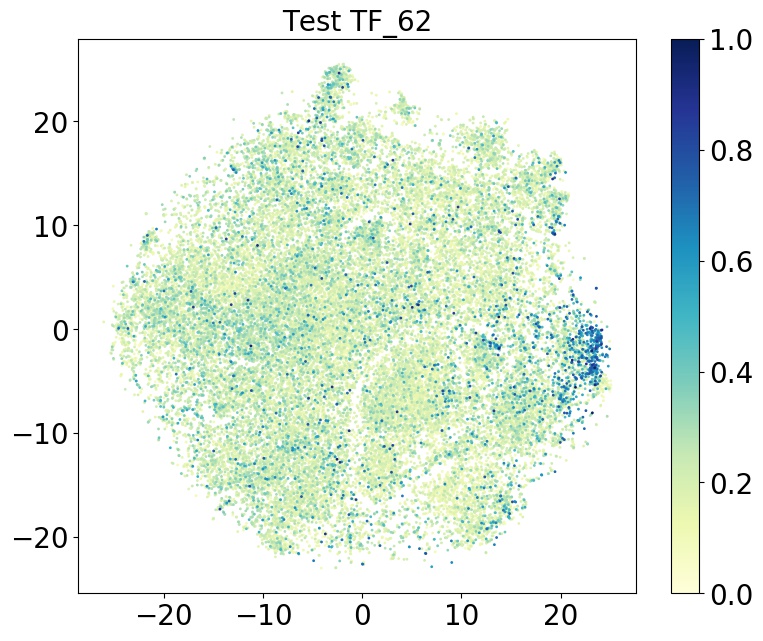
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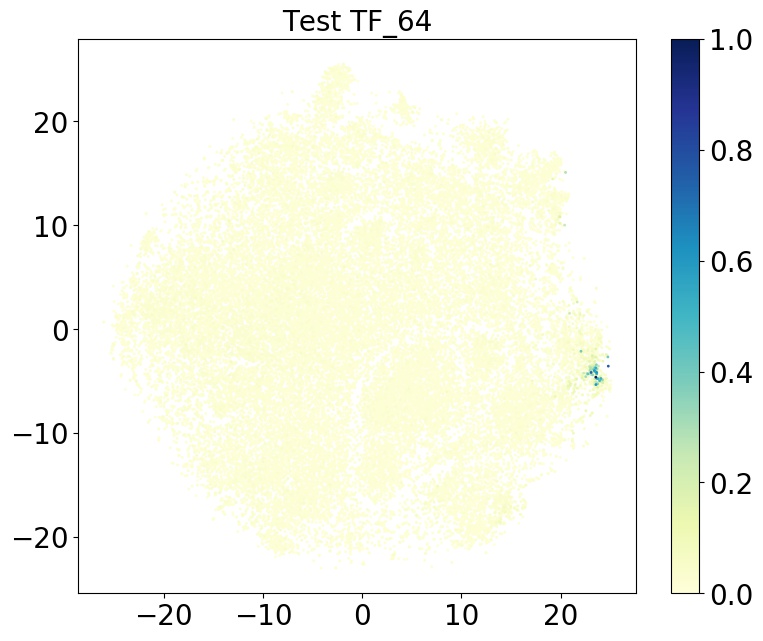
**TF\_8: Mzf1 TF\_9: Mzf1 TF\_65: Zscan10 TF\_66: Zscan10**

TF\_8, TF\_9: 0.728 TF\_8, TF\_65: 0.430 TF\_8, TF\_66: 0.480

TF\_9, TF\_65: 0.563 TF\_9, TF\_66: 0.692 TF\_65, TF\_66: 0.734

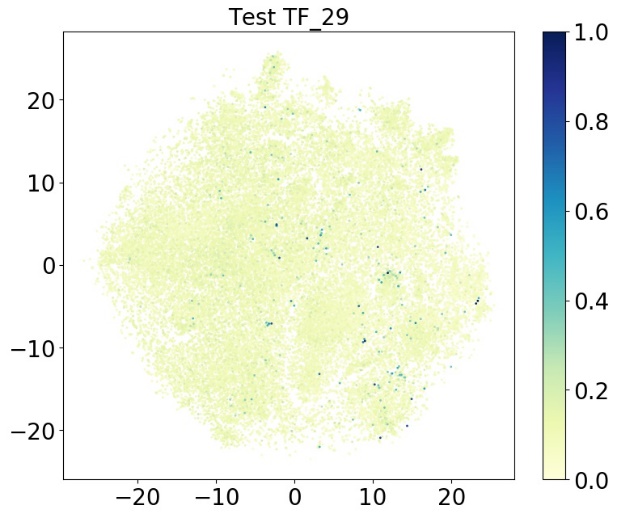
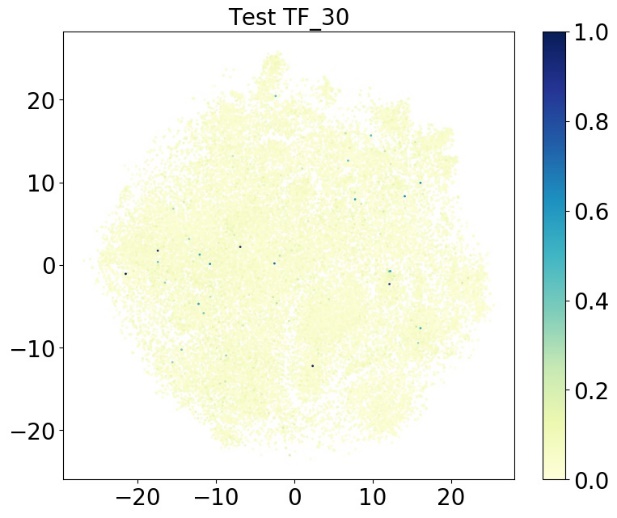
**C2H2 ZF**

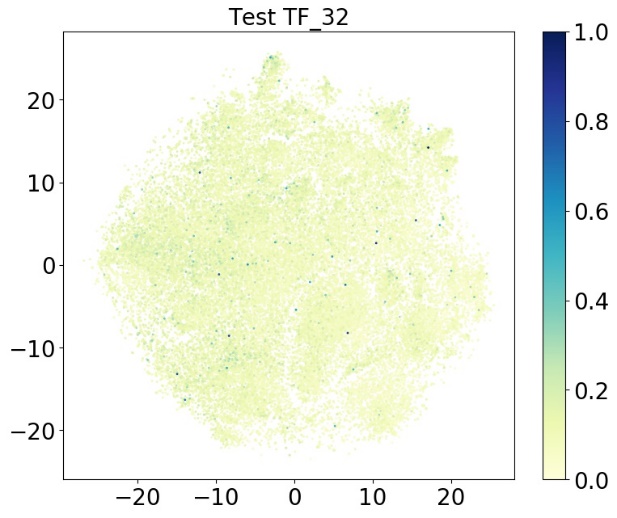
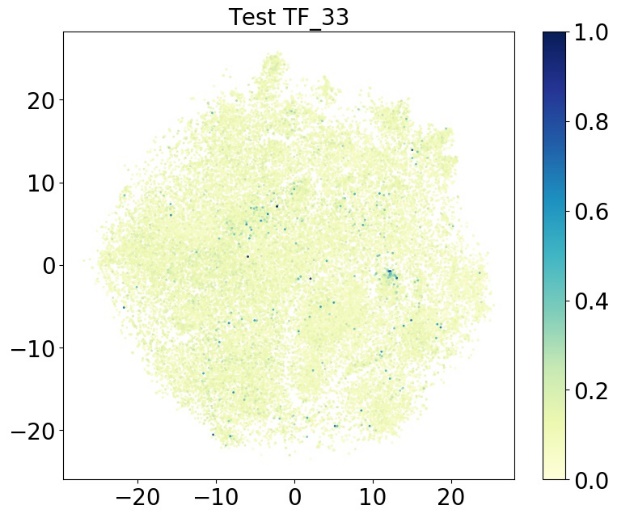
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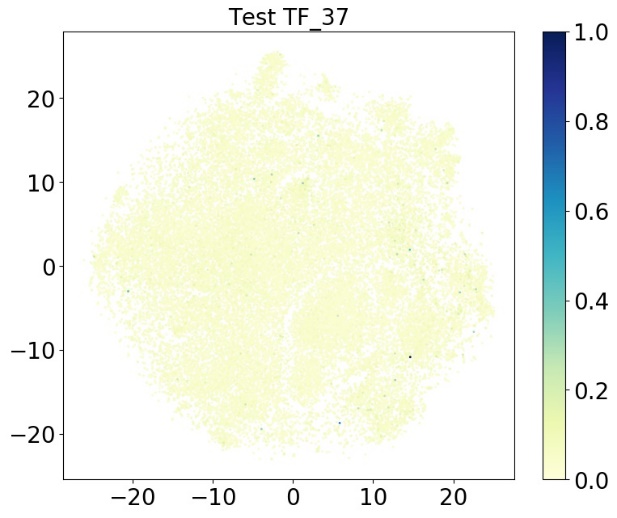
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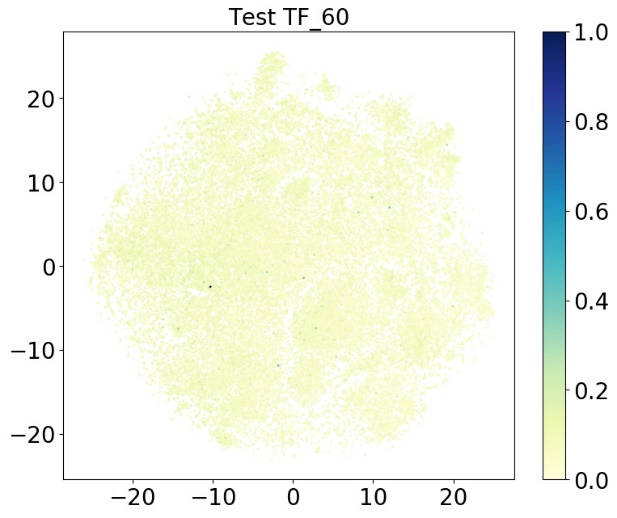
**TF\_28: Zfp202 TF\_62: Zic5 TF\_64: Znf740**

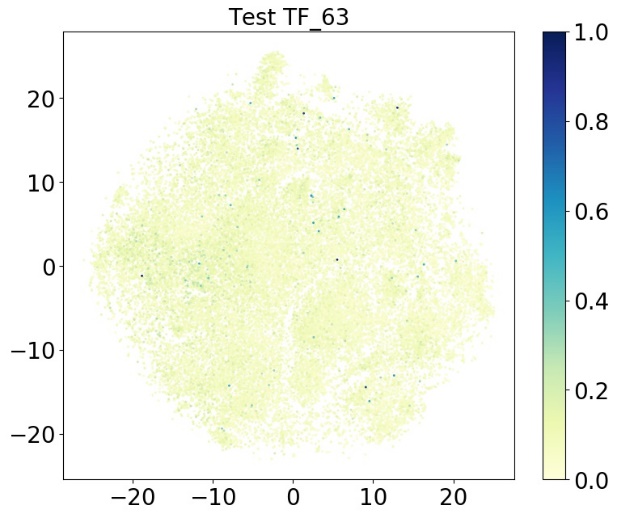
TF\_28, TF\_62: 0.331 TF\_28, TF\_64: 0.512 TF\_62, TF\_64: 0.249

**C2H2 ZF**

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**TF\_29 Zfp263 TF\_30 Zfp3 TF\_32 Zkscan1 TF\_33 Zscan10**

**TF\_37 chr15-10391820-10399583 TF\_60 Zfp300 TF\_63 Zkscan5**

TF\_33, TF\_37: 0.273 TF\_33, TF\_60: 0.566 TF\_29, TF\_33: 0.343

TF\_30, TF\_33: 0.467 TF\_33, TF\_63: 0.559 TF\_32, TF\_33: 0.465

TF\_37, TF\_60: 0.248 TF\_29, TF\_37: 0.170 TF\_30, TF\_37: 0.205

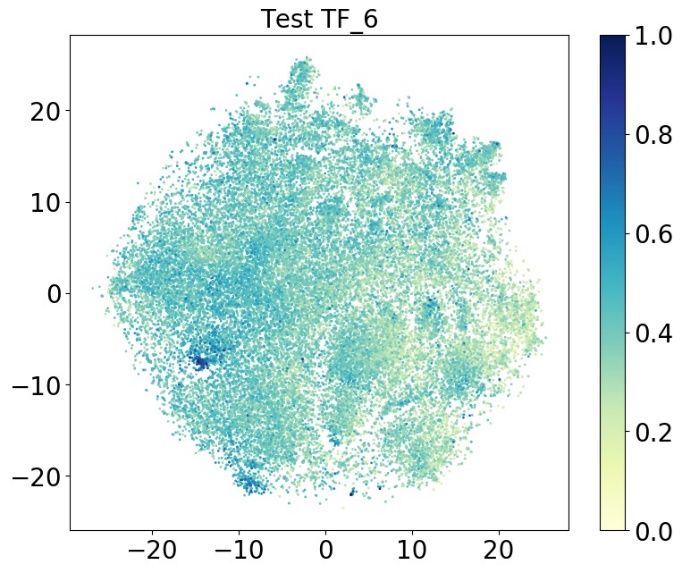
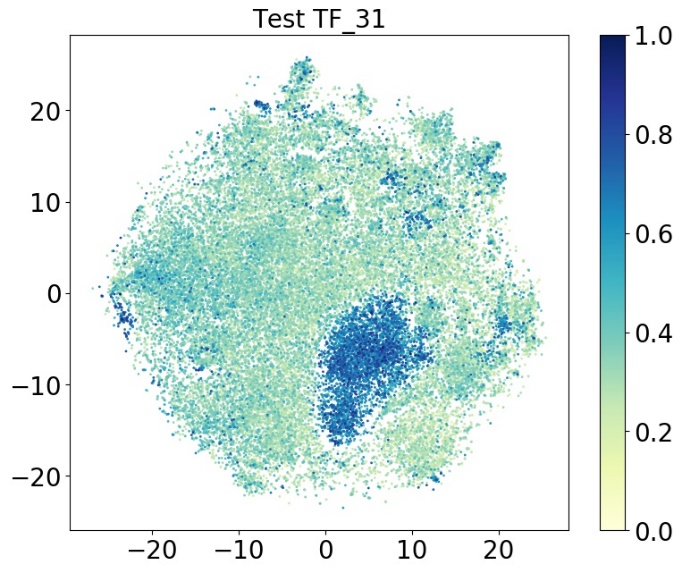
TF\_37, TF\_63: 0.278 TF\_32, TF\_37: 0.152 TF\_29, TF\_60: 0.283

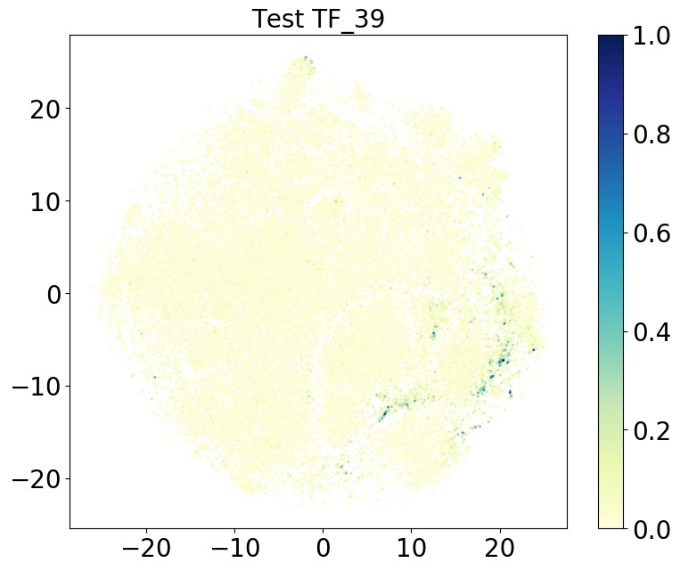
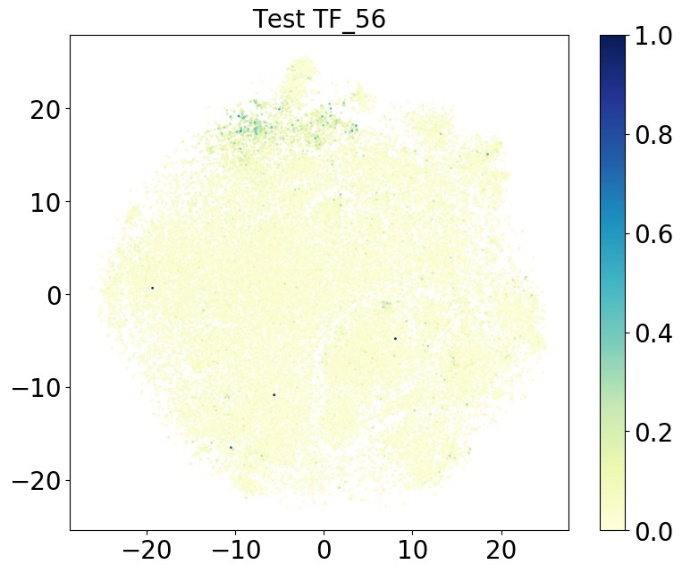
TF\_30, TF\_60: 0.444 TF\_60, TF\_63: 0.634 TF\_32, TF\_60: 0.514

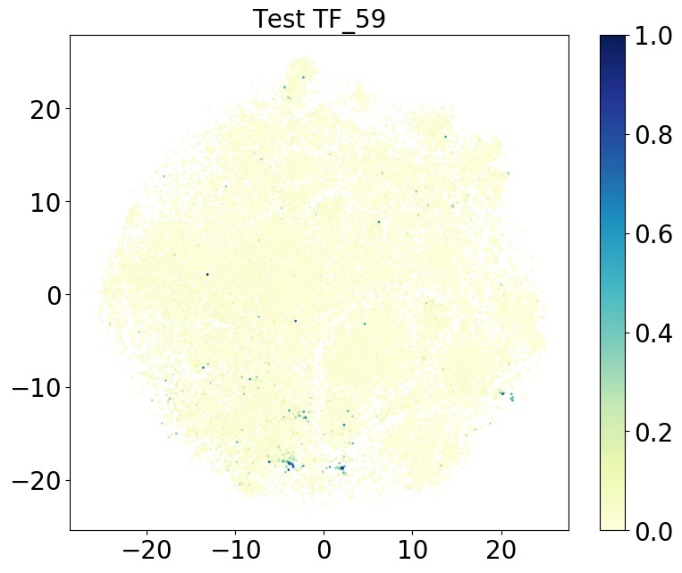
TF\_29, TF\_30: 0.222 TF\_29, TF\_63: 0.304 TF\_29, TF\_32: 0.240

TF\_30, TF\_63: 0.407 TF\_30, TF\_32: 0.371 TF\_32, TF\_63: 0.514

**C2H2 ZF (low similarity with others)**

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**TF\_6: Klf9**

**TF\_31: Zfx**

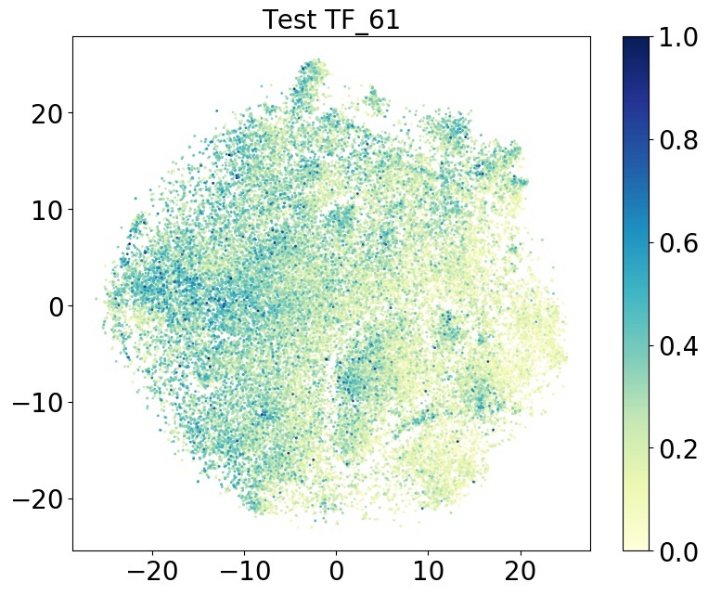
**TF\_39: Egr3**

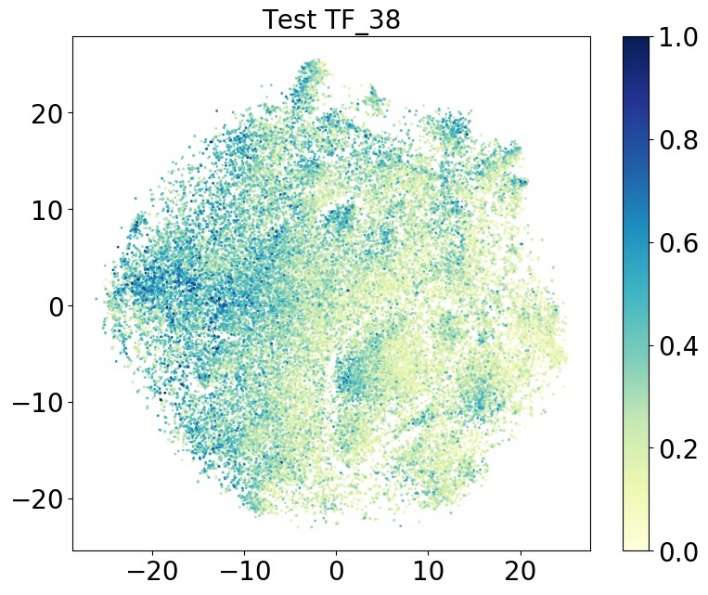
**TF\_56: Snai1**

**TF\_59: Zbtb1**

**Similar but in different families**

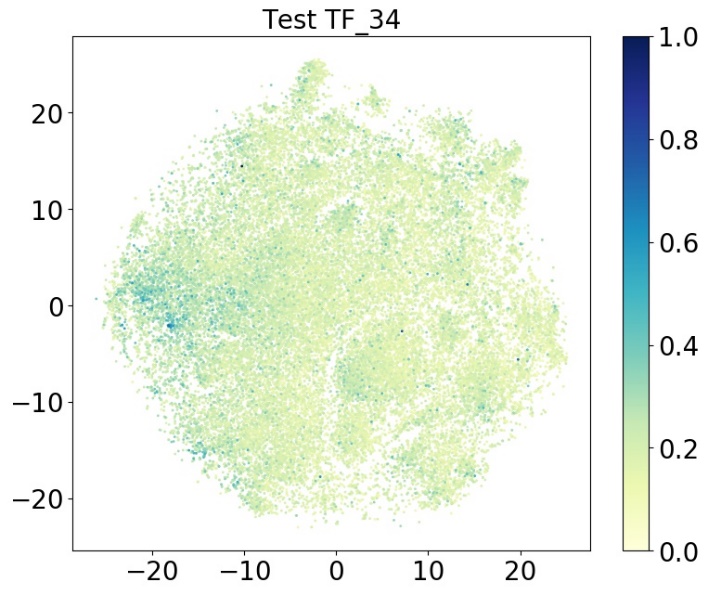
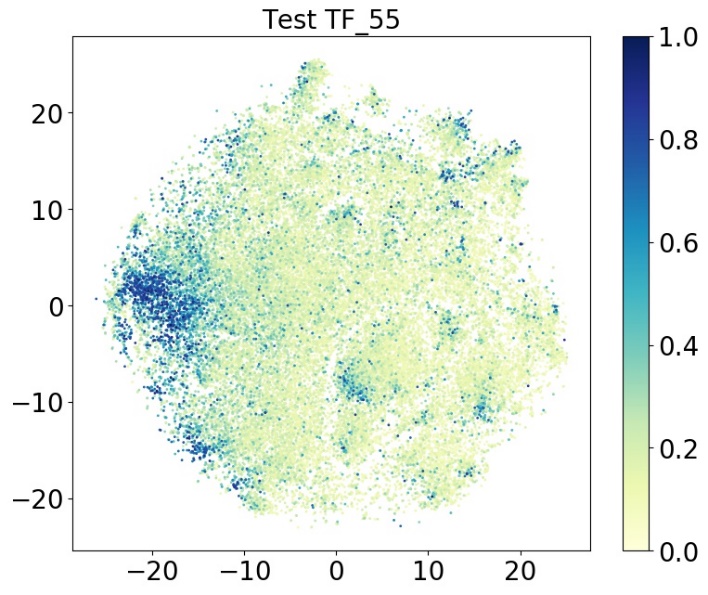
**C2H2 ZF SAND**

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**DM**

**AT hook**

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**DM**

**TF\_38: Dmrtc2 TF\_57: Sp140 TF\_61: Zfp637**

**TF\_34: Ahctf1 TF\_55: Sdccag8**

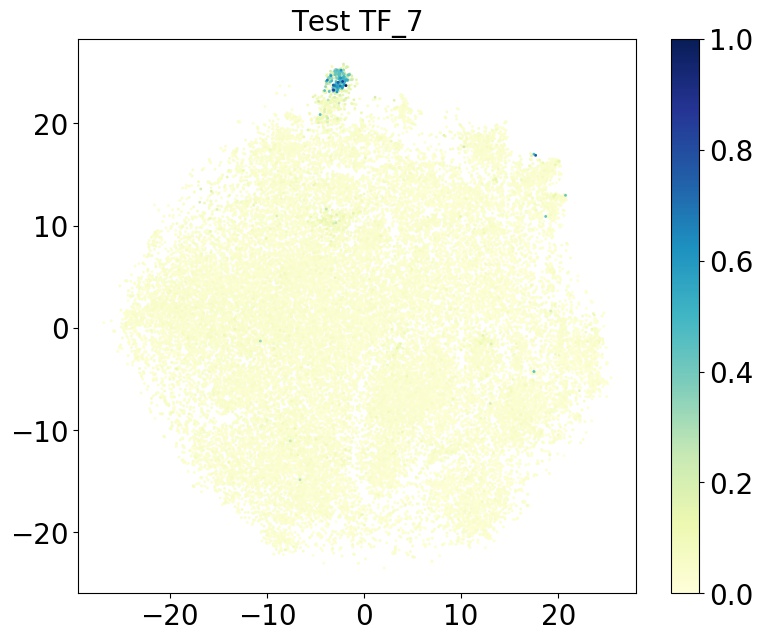
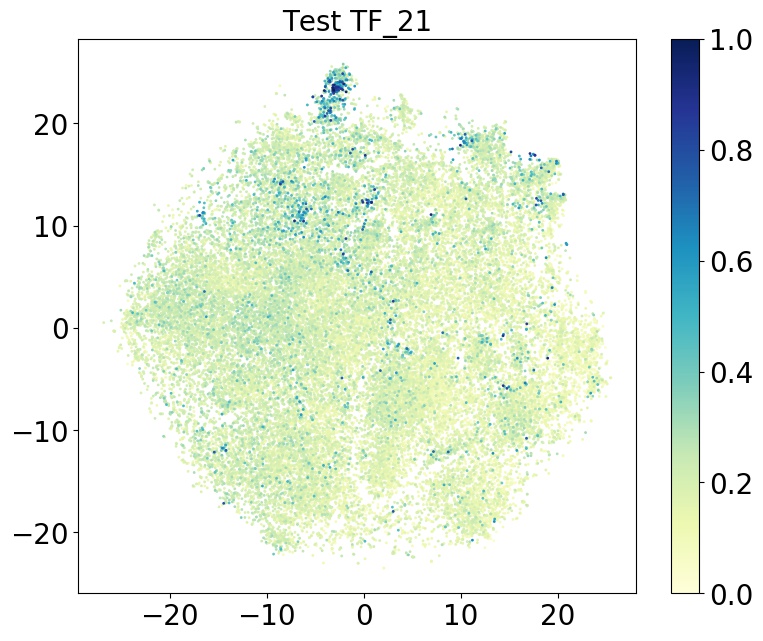
TF\_34, TF\_38: 0.626 TF\_34, TF\_55: 0.667 TF\_34, TF\_57: 0.514

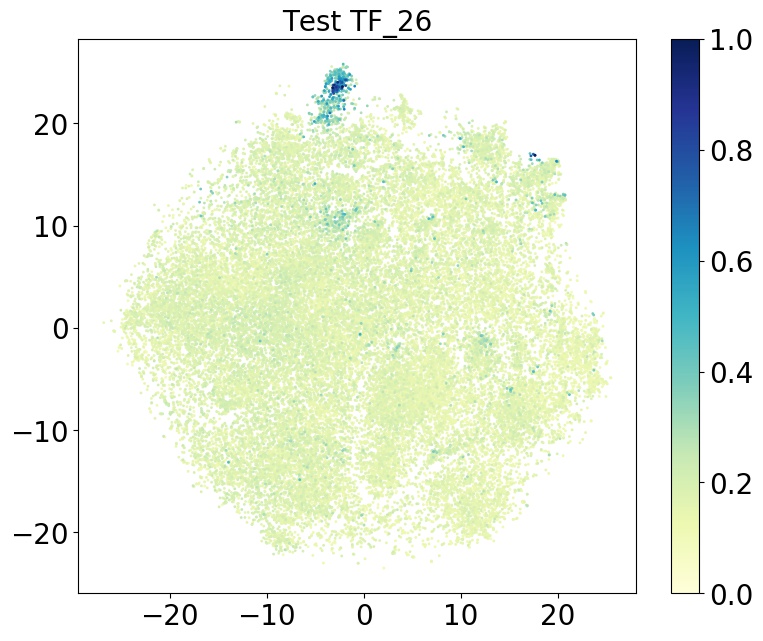
TF\_34, TF\_61: 0.488 TF\_38, TF\_55: 0.507 TF\_38, TF\_57: 0.644

TF\_38, TF\_61: 0.644 TF\_55, TF\_57: 0.502 TF\_55, TF\_61: 0.456

TF\_57, TF\_61: 0.688

**bHLH**

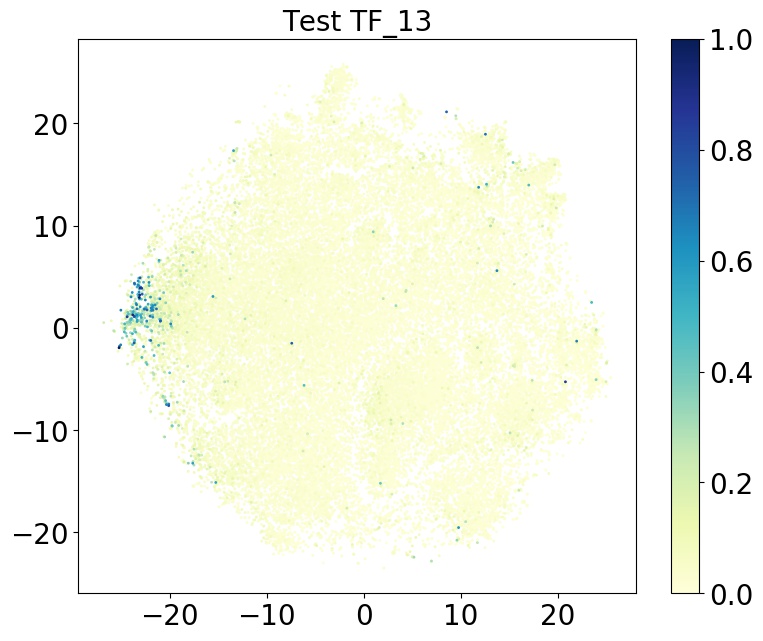
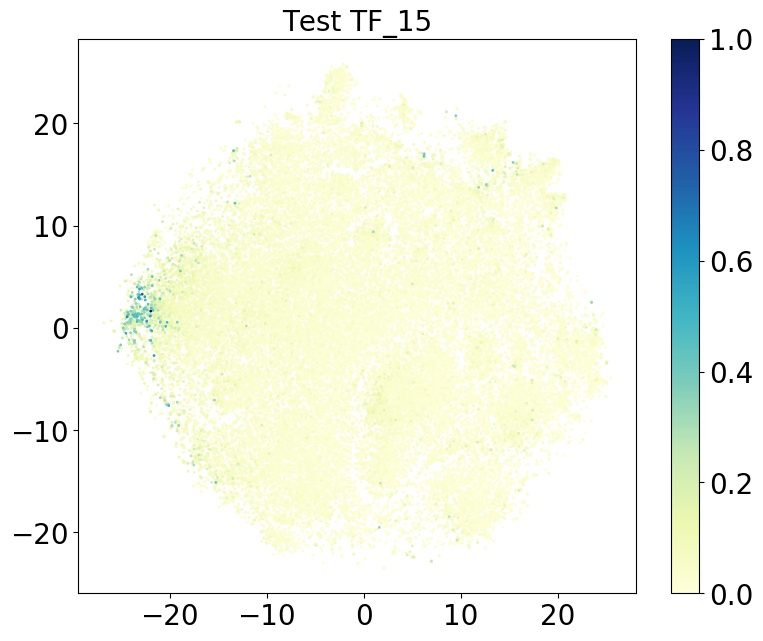
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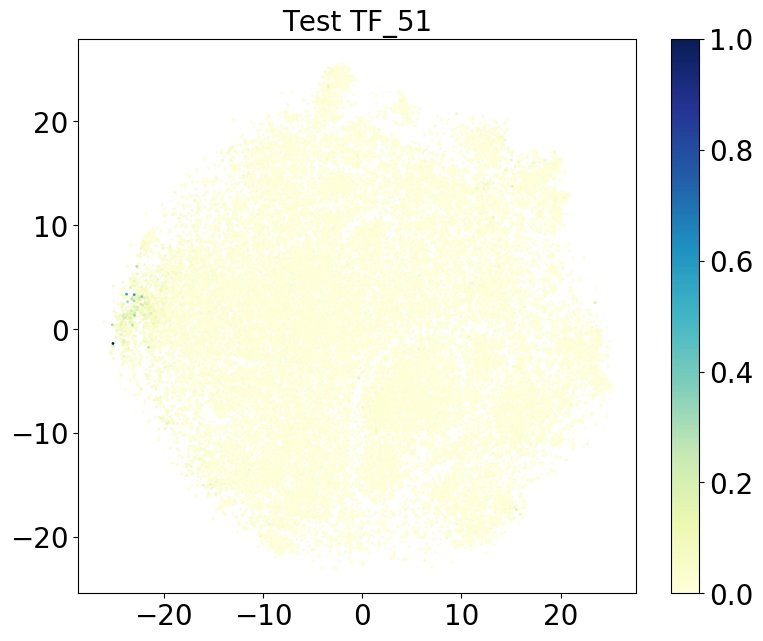
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**TF\_7: Mlx TF\_21: Srebf1 TF\_26: Tfec**

TF\_7, TF\_21: 0.370 TF\_7, TF\_26: 0.699 TF\_21, TF\_26: 0.500

**POU**

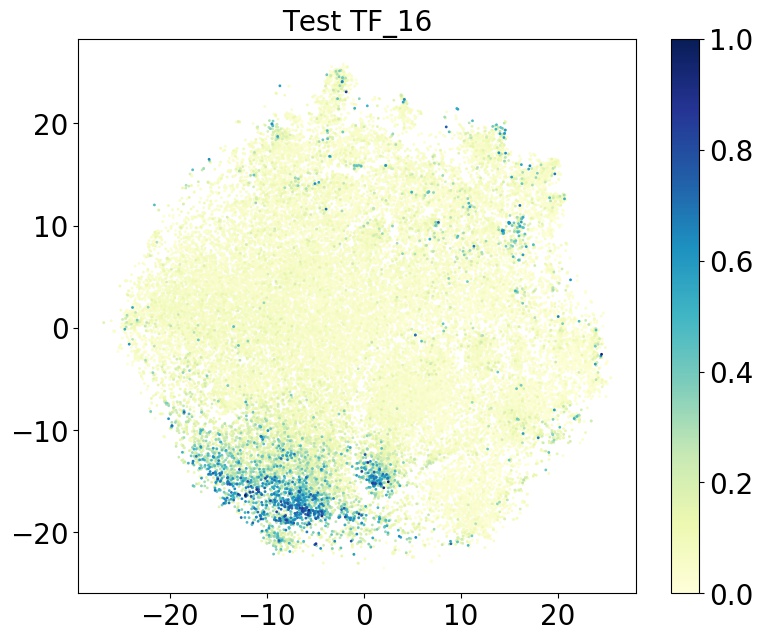
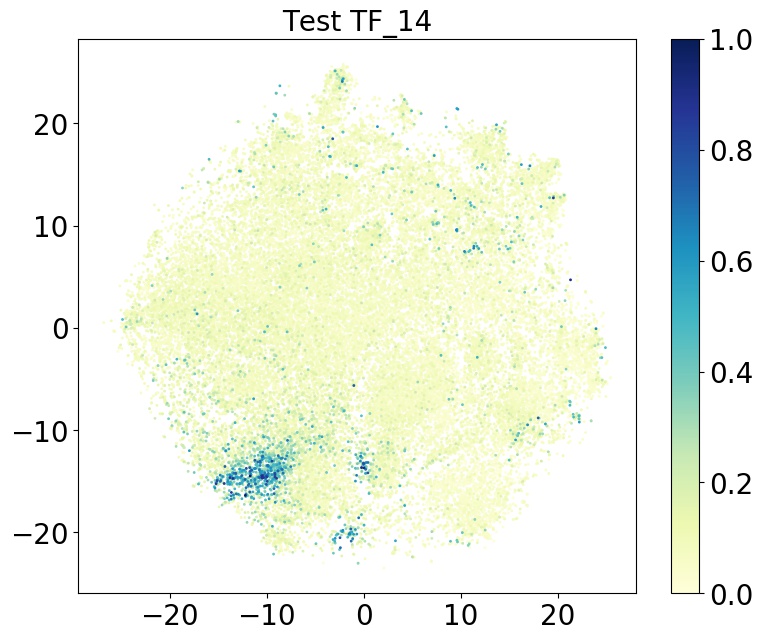
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**TF\_13: Oct-1 TF\_15: Pit1 TF\_51: Pou1f1**

TF\_13, TF\_15: 0.811 TF\_13, TF\_51: 0.778 TF\_15, TF\_51: 0.853

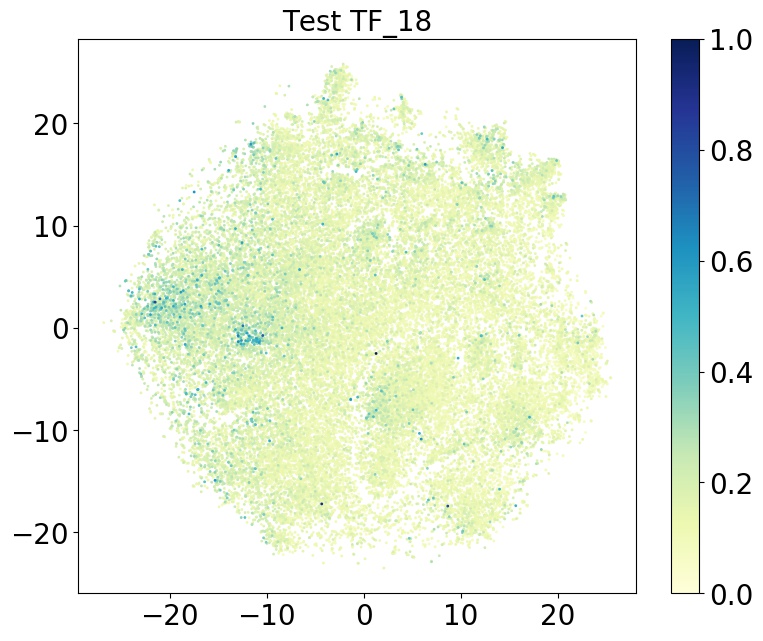
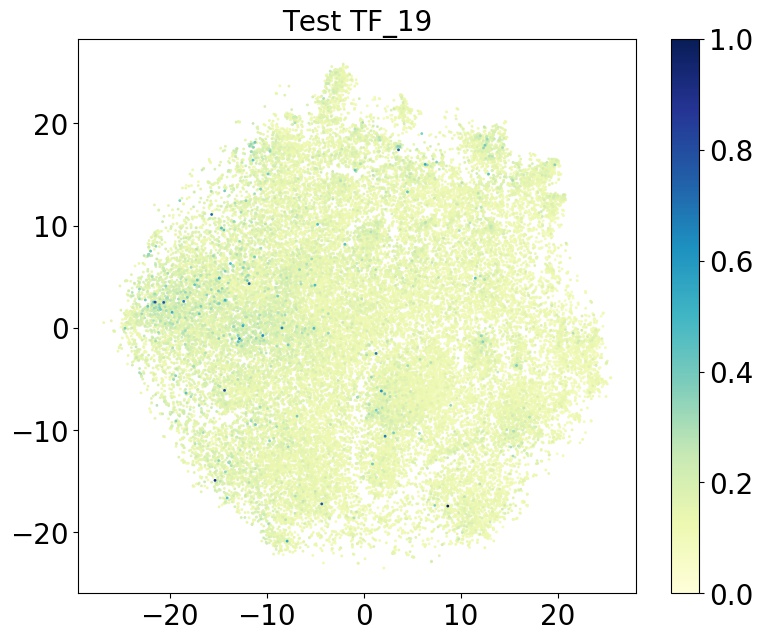
**Myb/SANT**

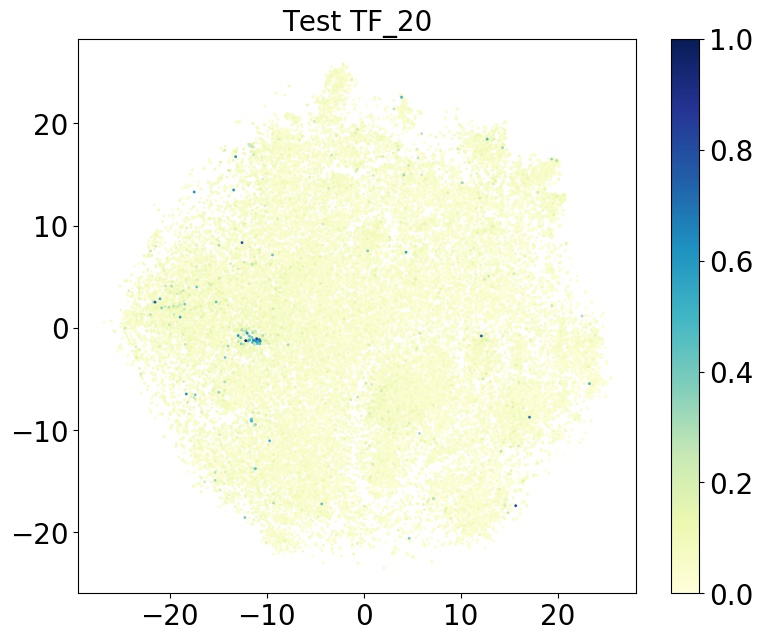
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**TF\_14: P42pop TF\_16: Prdm11**

TF\_14, TF\_16: 0.414

**Sox**

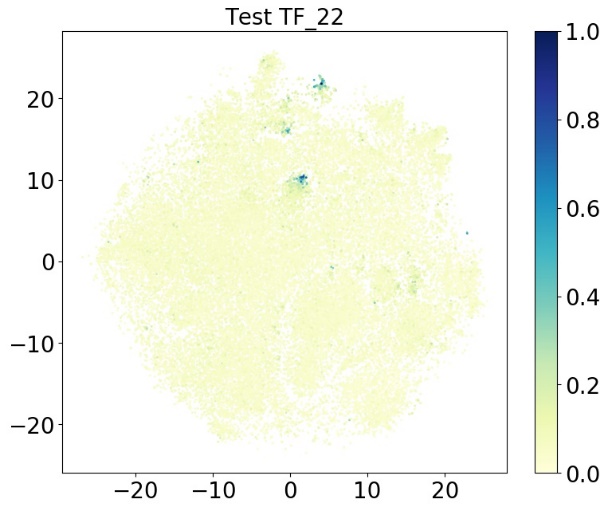
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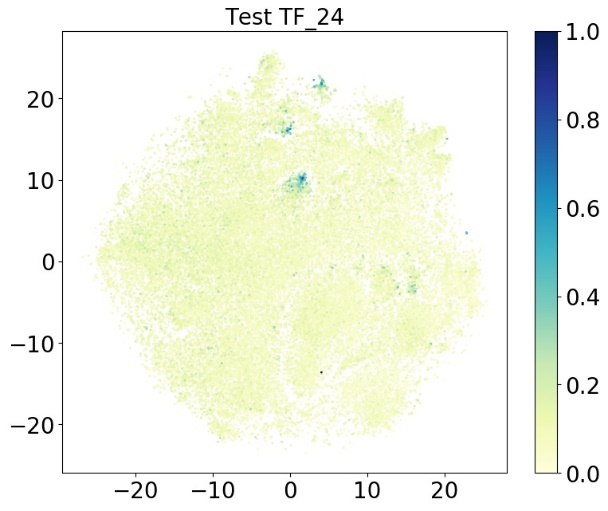
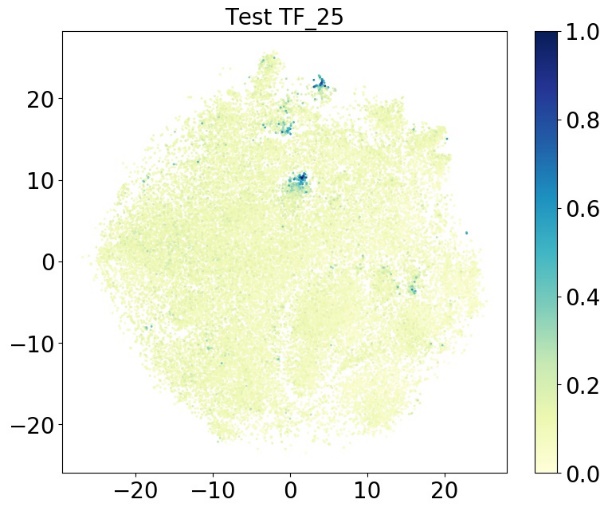
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**TF\_18: Sox10 TF\_19: Sox3 TF\_20: Sox6**

TF\_18, TF\_19: 0.747 TF\_18, TF\_20: 0.639 TF\_19, TF\_20: 0.541

**T-box**

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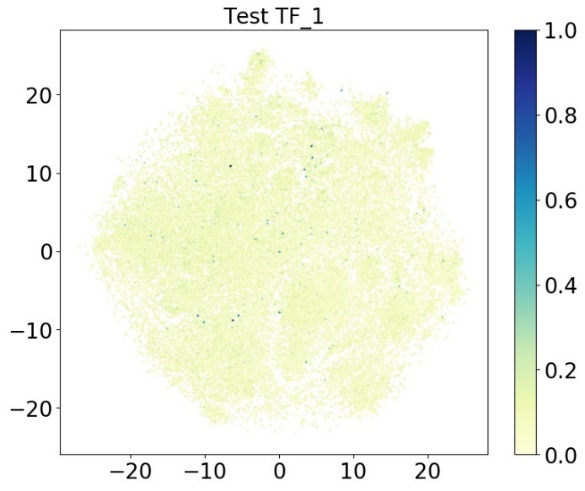
**TF\_22: Tbx2 TF\_23: Tbx20 TF\_24: Tbx4 TF\_25: Tbx5 TF\_58: Tbx1**

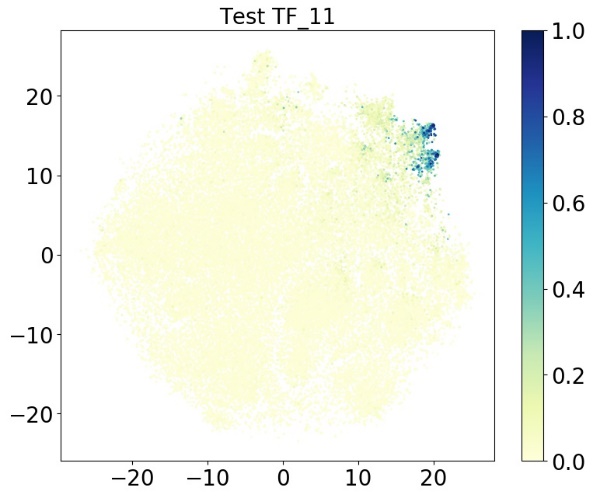
TF\_22, TF\_23: 0.692 TF\_22, TF\_24: 0.788 TF\_22, TF\_25: 0.800

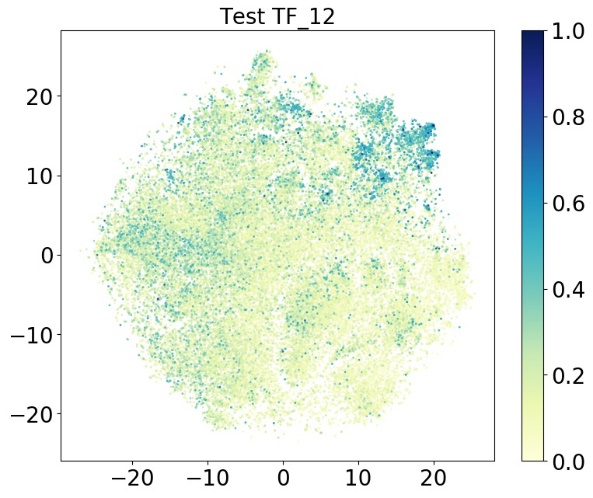
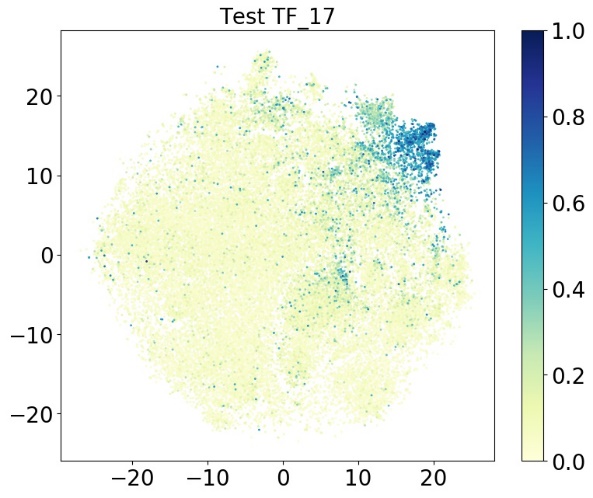
TF\_22, TF\_58: 0.499 TF\_23, TF\_24: 0.597 TF\_23, TF\_25: 0.626

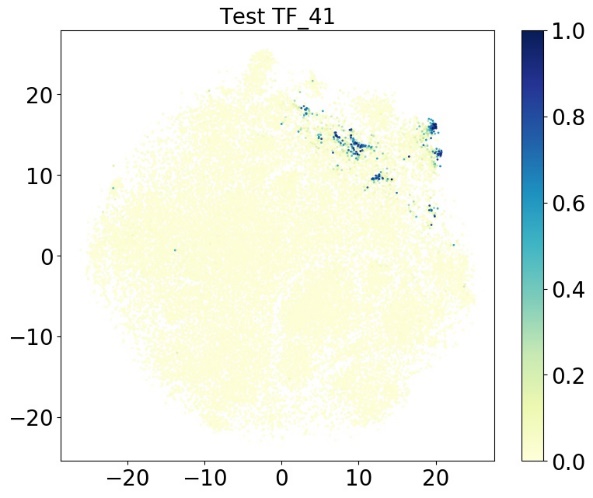
TF\_23, TF\_58: 0.366 TF\_24, TF\_25: 0.913 TF\_24, TF\_58: 0.481

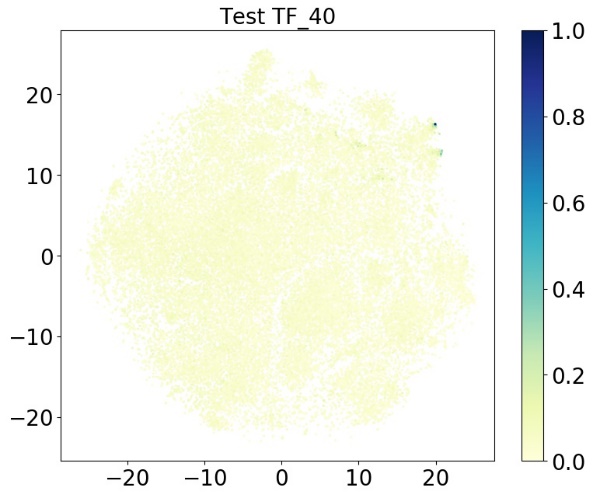
TF\_25, TF\_58: 0.421

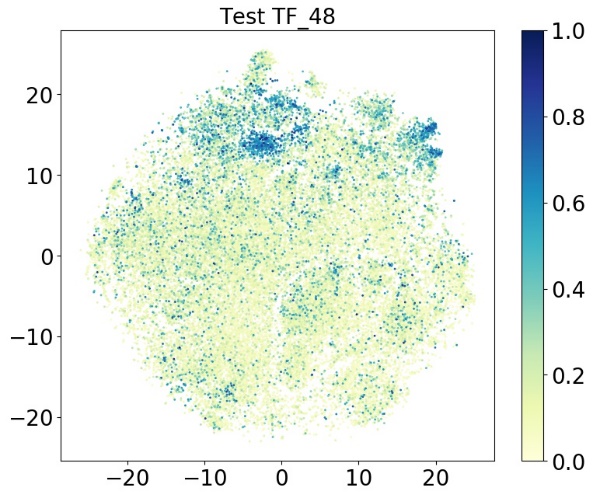
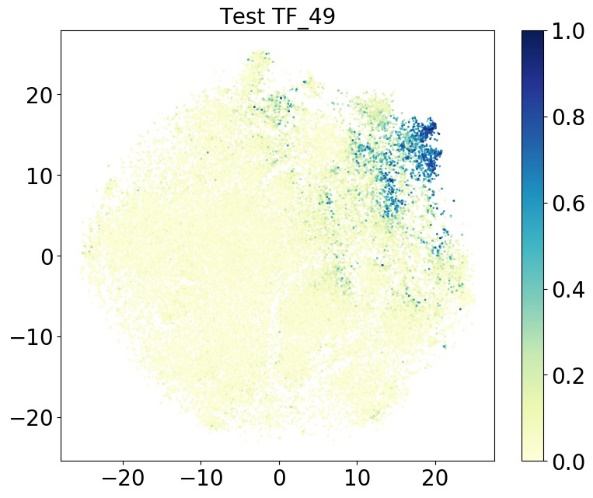
**Nuclear receptor**

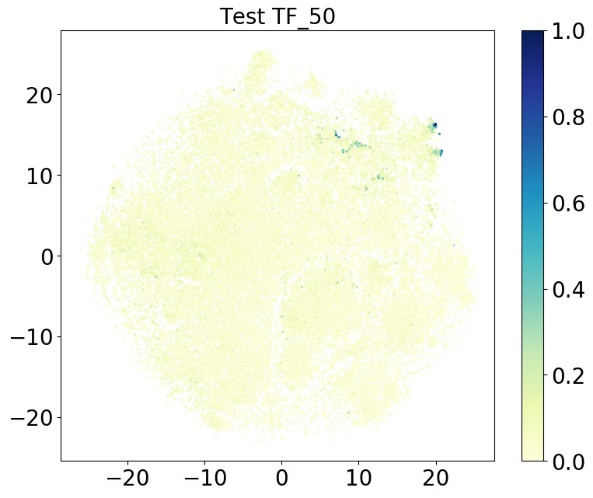
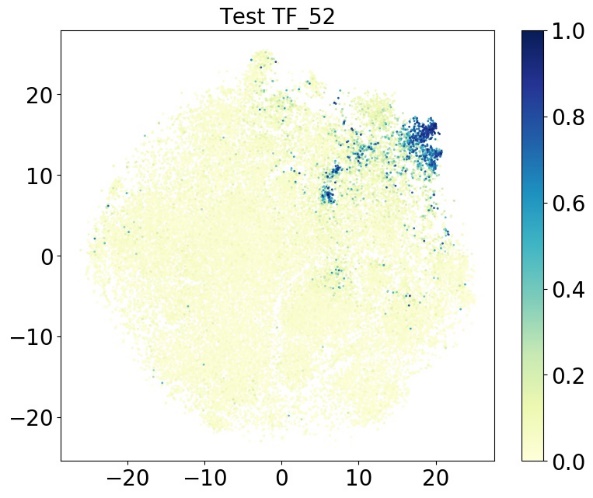
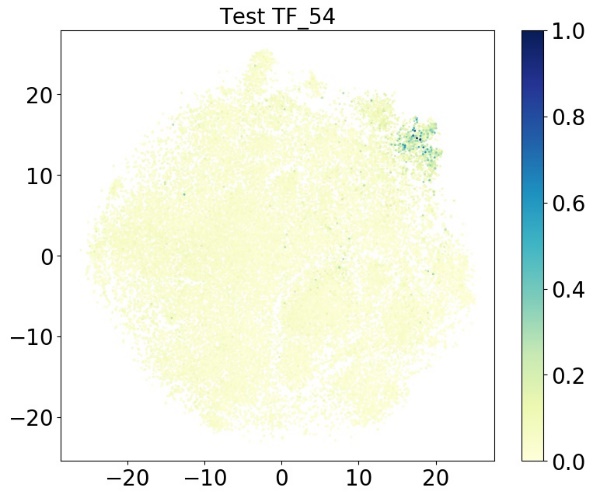
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**TF\_1: Ar TF\_11: Nr2f6 TF\_12: Nr4a2**

**TF\_17: Rorb TF\_40: Esrrb TF\_41: Esrrg**

**TF\_48: Nr2e1 TF\_49: Nr2f1 TF\_50: Nr5a2**

**TF\_52: Rarg TF\_54: Rora**

TF\_1, TF\_40: 0.457 TF\_1, TF\_41: 0.0545 TF\_1, TF\_11: 0.0203

TF\_1, TF\_12: 0.280 TF\_1, TF\_48: 0.157 TF\_1, TF\_17: 0.0397

TF\_1, TF\_49: -0.0251 TF\_1, TF\_50: 0.262 TF\_1, TF\_52: 0.136

TF\_1, TF\_54: 0.256 TF\_40, TF\_41: 0.290 TF\_11, TF\_40: 0.266

TF\_12, TF\_40: 0.482 TF\_40, TF\_48: 0.336 TF\_17, TF\_40: 0.204

TF\_40, TF\_49: 0.118 TF\_40, TF\_50: 0.606 TF\_40, TF\_52: 0.357

TF\_40, TF\_54: 0.431 TF\_11, TF\_41: 0.451 TF\_12, TF\_41: 0.285

TF\_41, TF\_48: 0.207 TF\_17, TF\_41: 0.375 TF\_41, TF\_49: 0.409

TF\_41, TF\_50: 0.508 TF\_41, TF\_52: 0.457 TF\_41, TF\_54: 0.282

TF\_11, TF\_12: 0.386 TF\_11, TF\_48: 0.280 TF\_11, TF\_17: 0.651

TF\_11, TF\_49: 0.610 TF\_11, TF\_50: 0.400 TF\_11, TF\_52: 0.720

TF\_11, TF\_54: 0.507 TF\_12, TF\_48: 0.389 TF\_12, TF\_17: 0.362

TF\_12, TF\_49: 0.337 TF\_12, TF\_50: 0.437 TF\_12, TF\_52: 0.508

TF\_12, TF\_54: 0.477 TF\_17, TF\_48: 0.251 TF\_48, TF\_49: 0.262

TF\_48, TF\_50: 0.263 TF\_48, TF\_52: 0.376 TF\_48, TF\_54: 0.309

TF\_17, TF\_49: 0.640 TF\_17, TF\_50: 0.326 TF\_17, TF\_52: 0.681

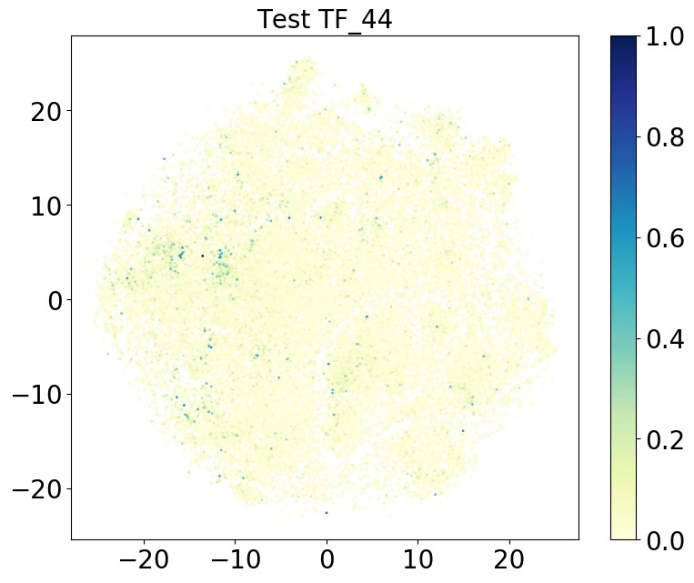
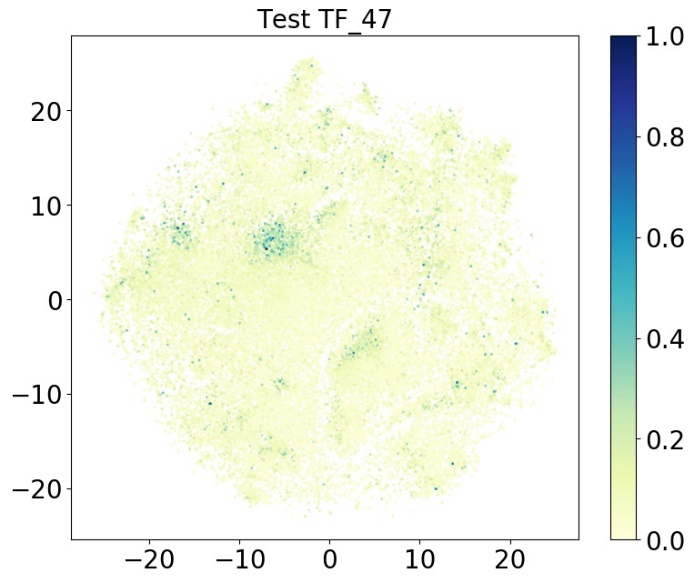
TF\_17, TF\_54: 0.750 TF\_49, TF\_50: 0.266 TF\_49, TF\_52: 0.659

TF\_49, TF\_54: 0.449 TF\_50, TF\_52: 0.433 TF\_50, TF\_54: 0.453

TF\_52, TF\_54: 0.607

**Others**

**GATA Homeodomain**

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**RFX**

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**TF\_44: Gata4 TF\_47: Nkx2-9 TF\_53: Rfx7**