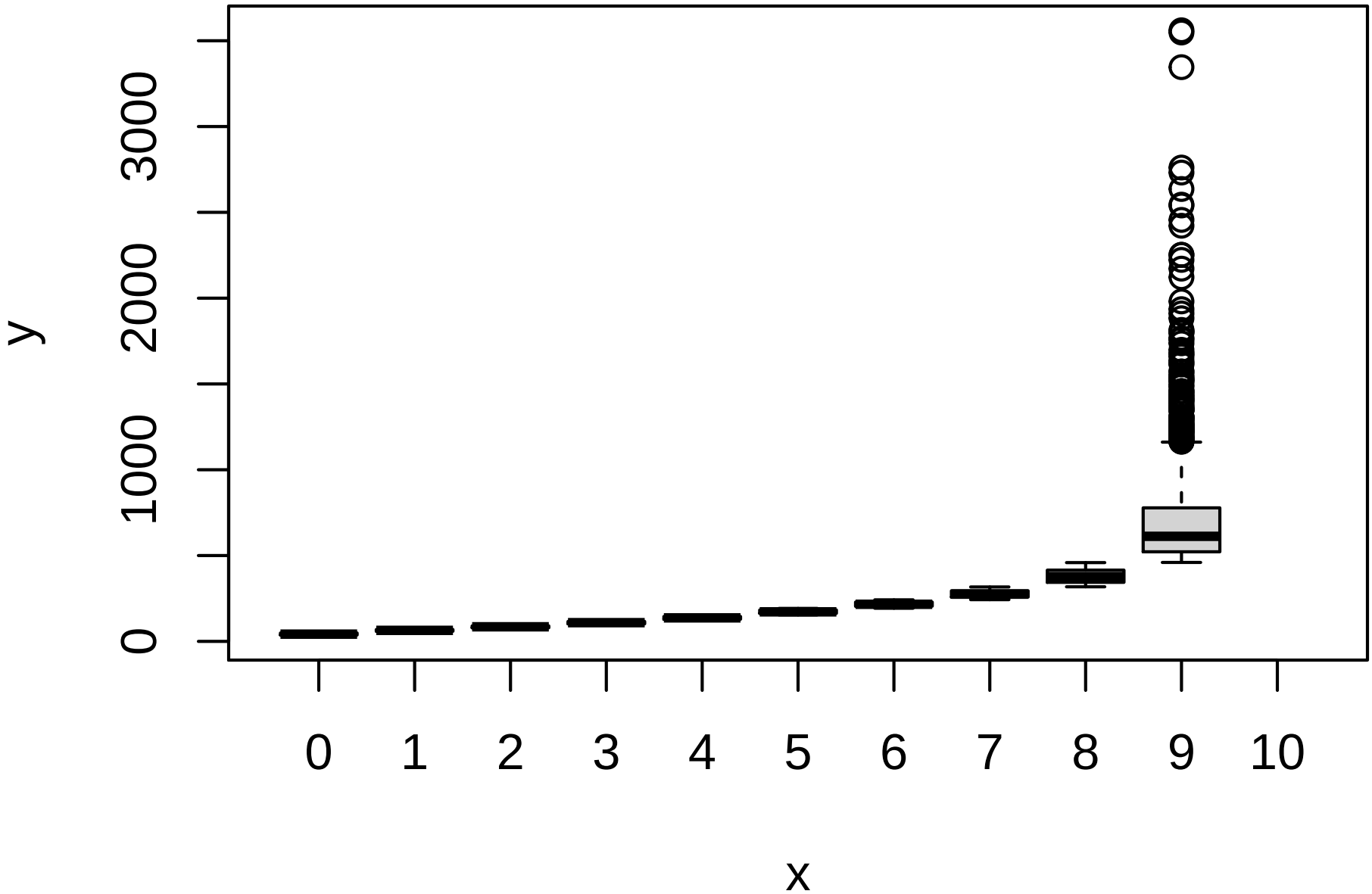
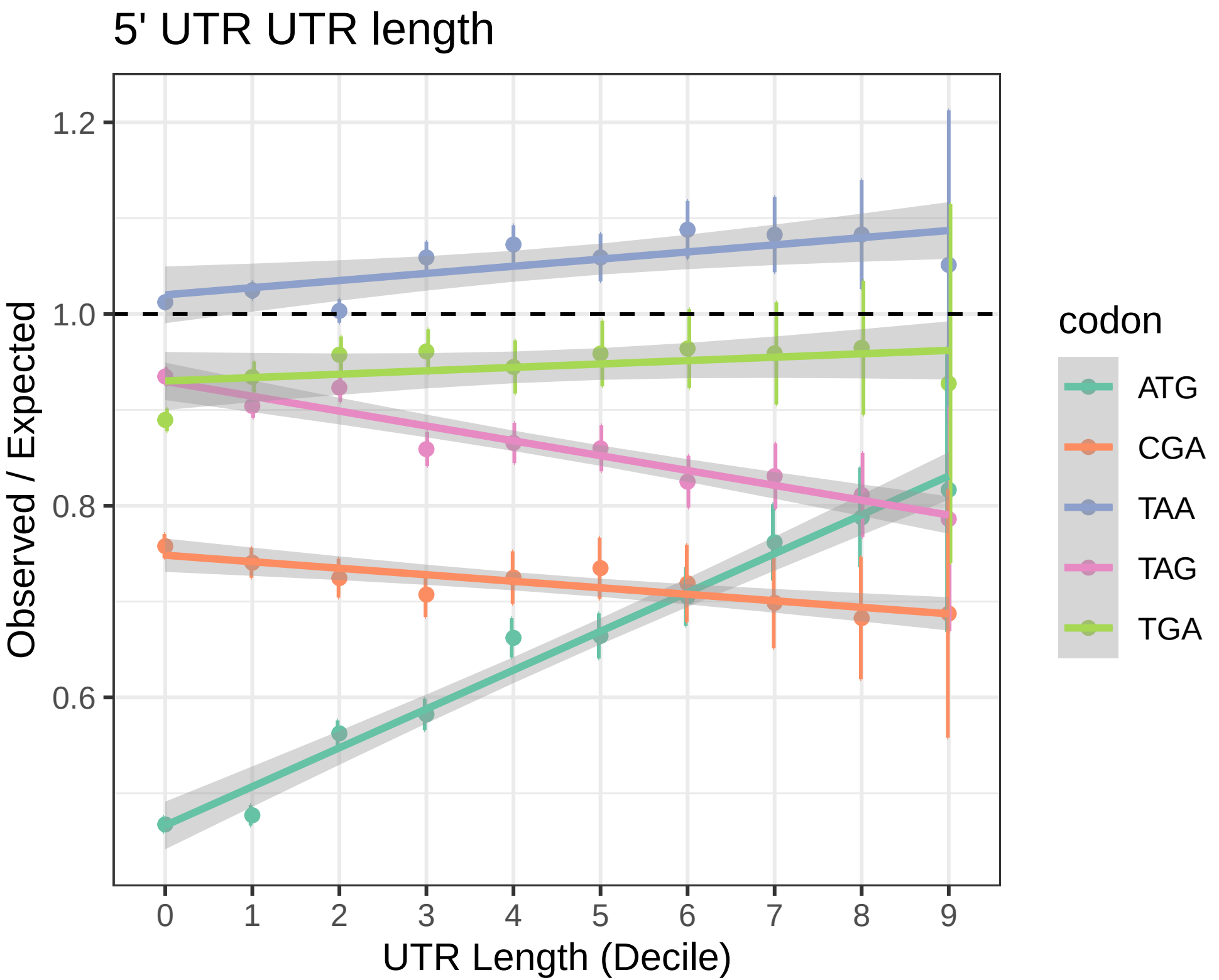
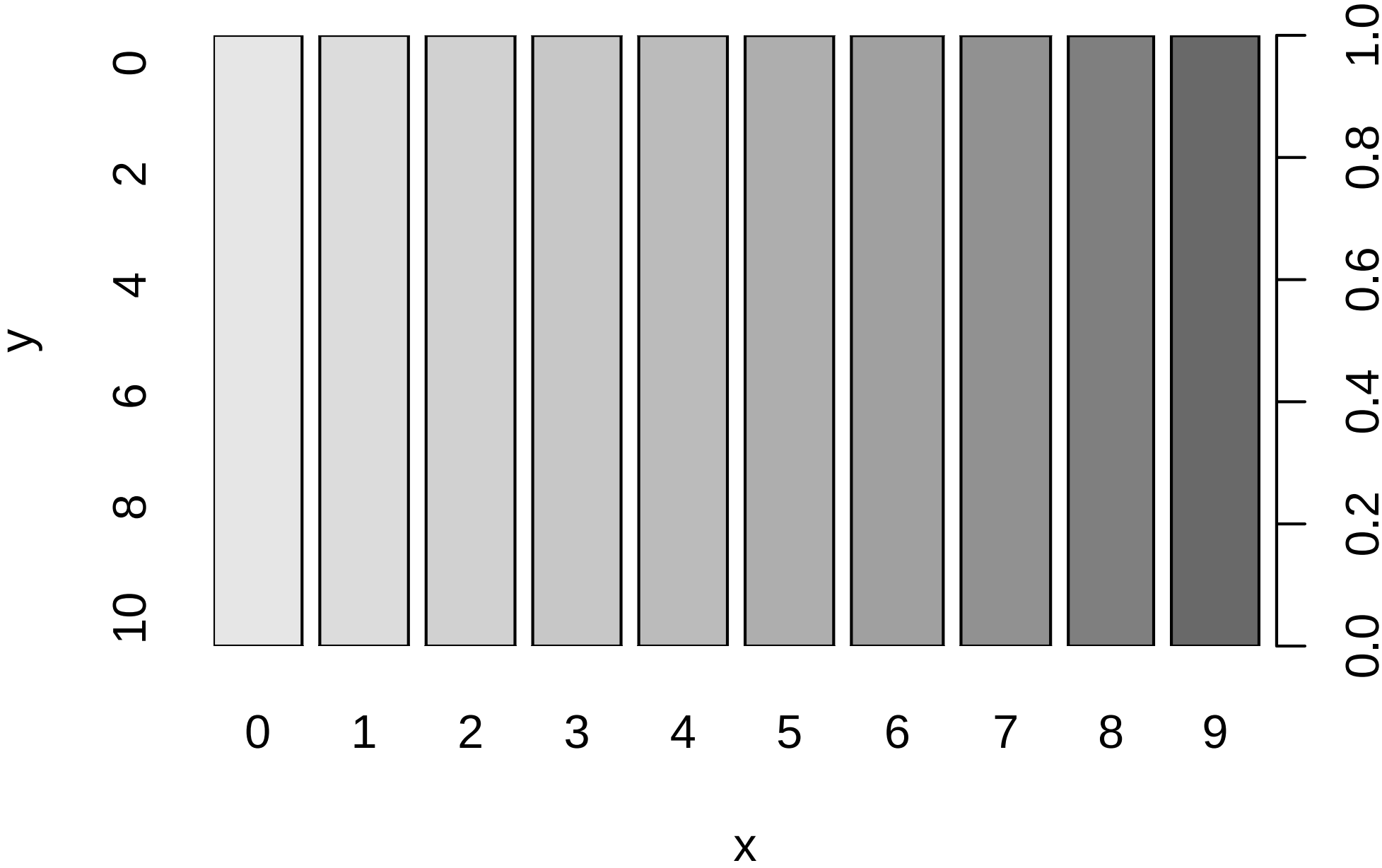
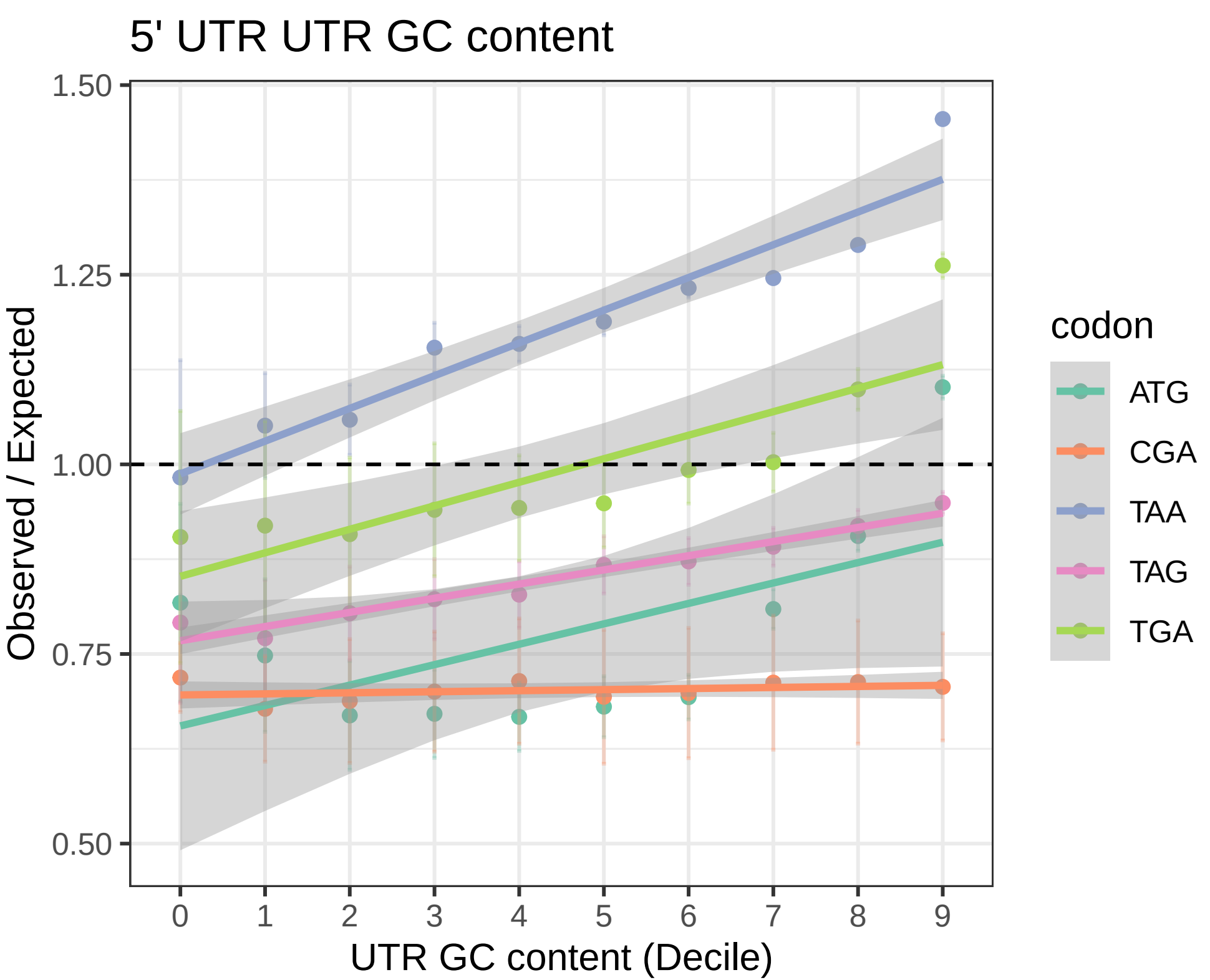
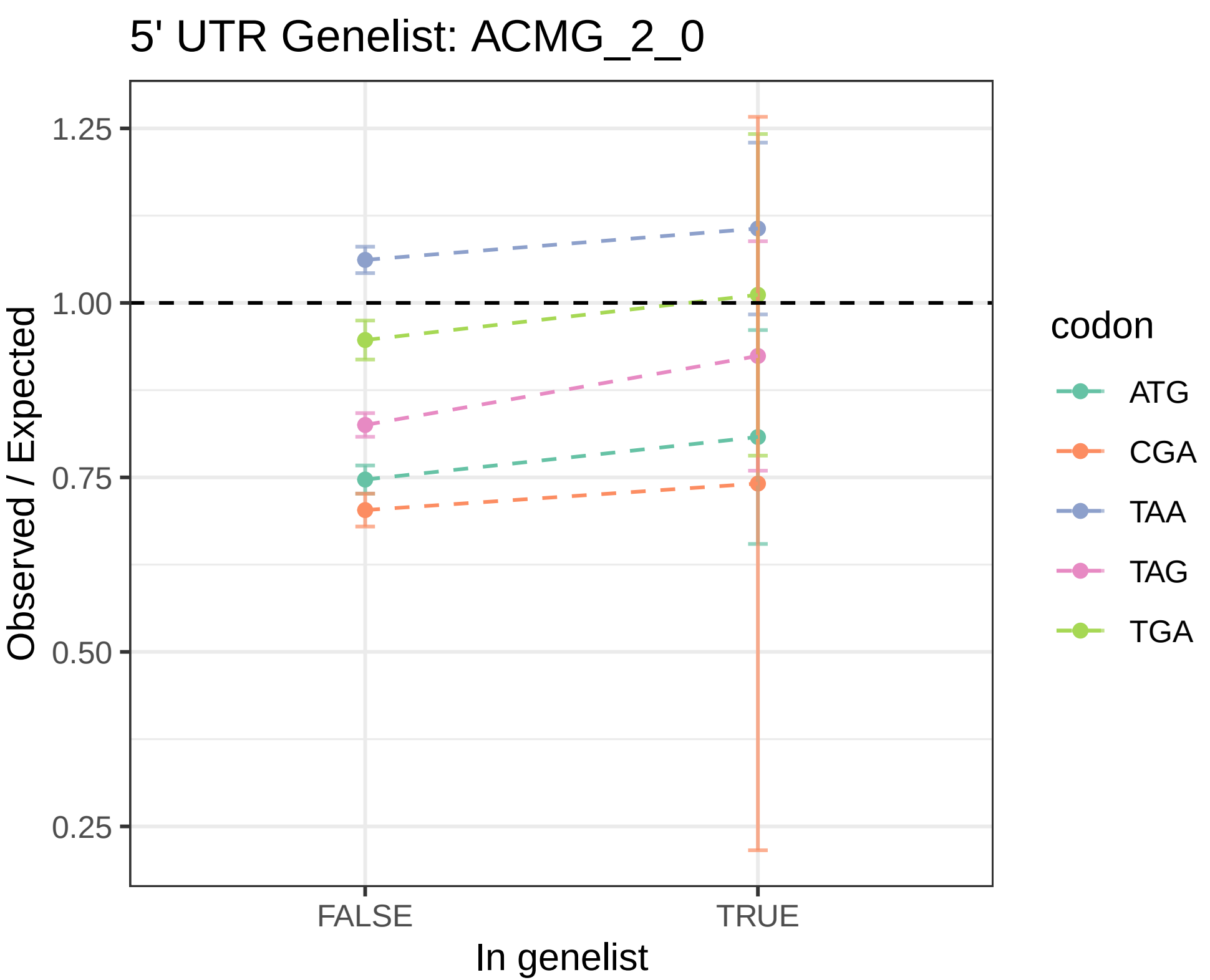
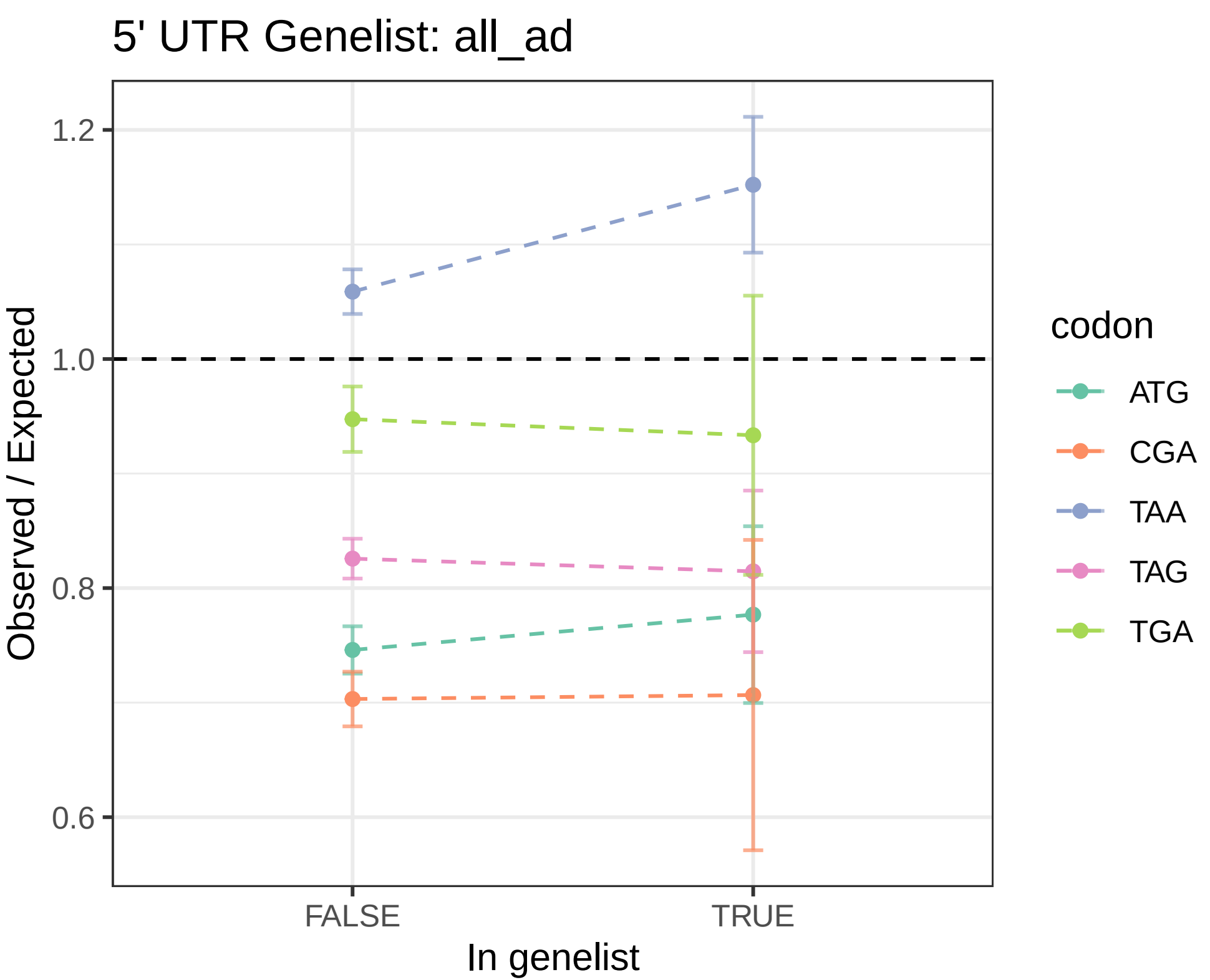

y
0
1000
2000
3000
0
1
2
3
4
5
6
7
8
9
10
x

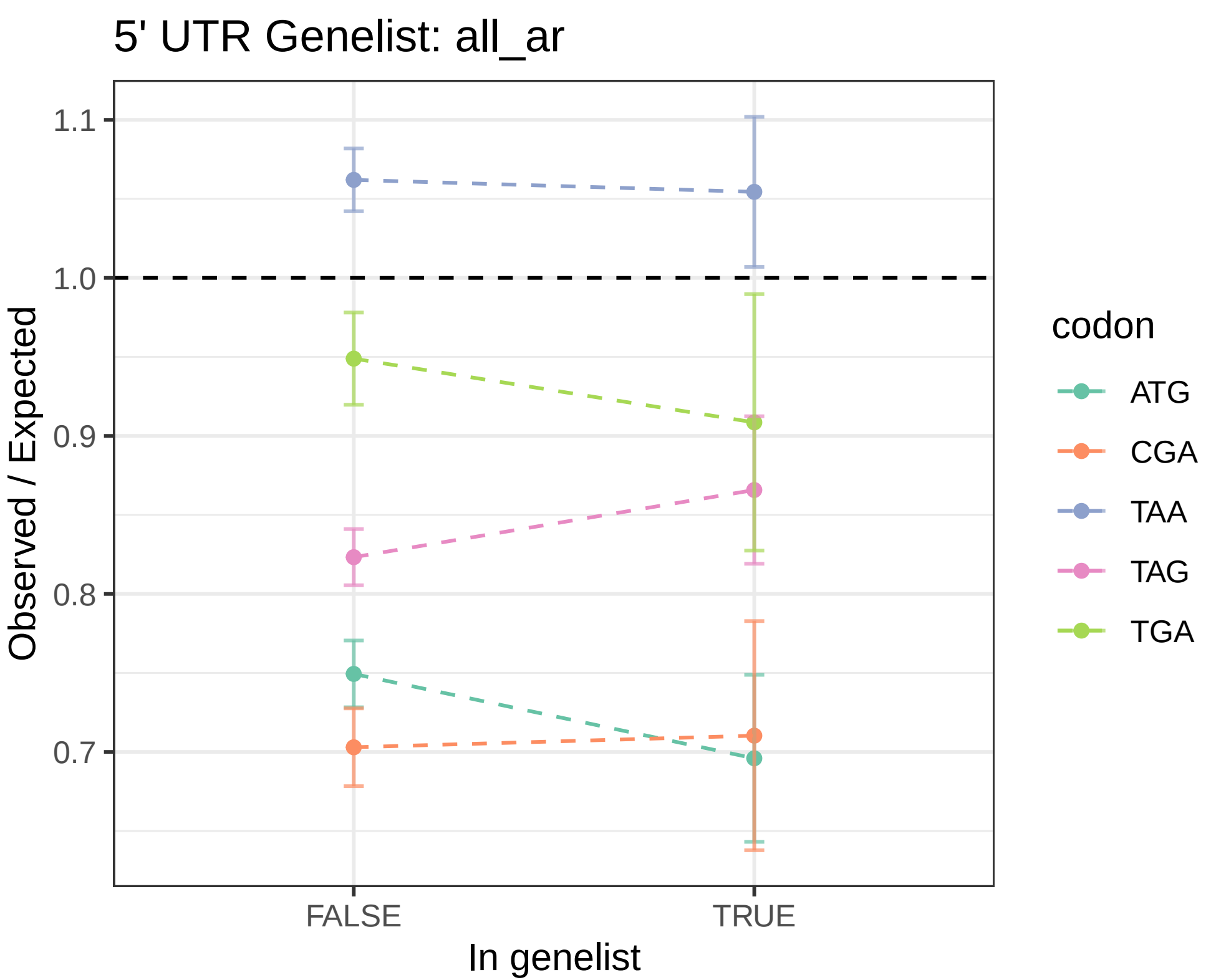

5' UTR UTR length
Observed / Expected
1.2
1.0
0.8
0.6
0
1
2
3
4
5
6
7
8
9
UTR Length (Decile)
codon
ATG
CGA
TAA
TAG
TGA

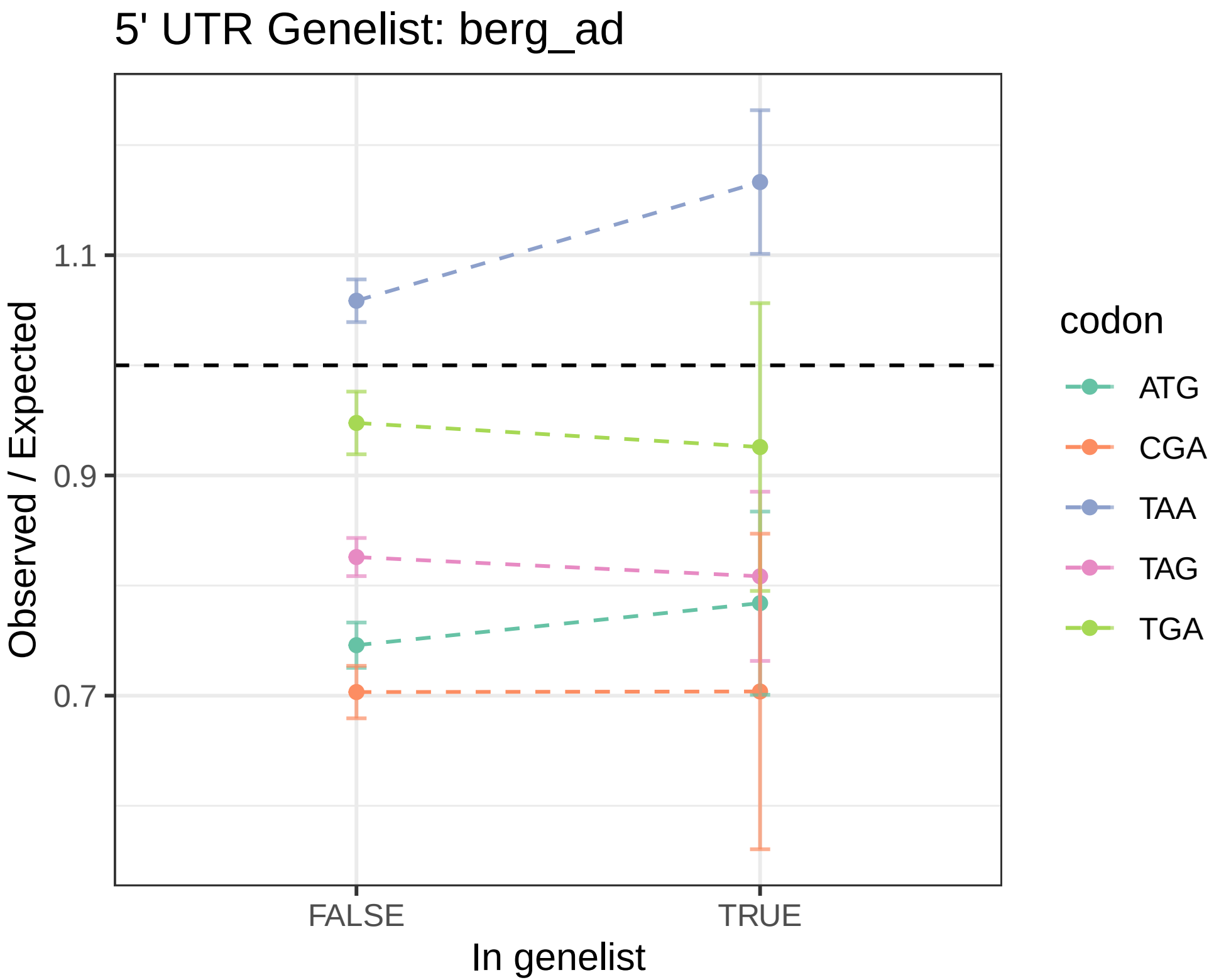

y
0
2
4
6
8
10
0.0
0.2
0.4
0.6
0.8
1.0
0
1
2
3
4
5
6
7
8
9
x

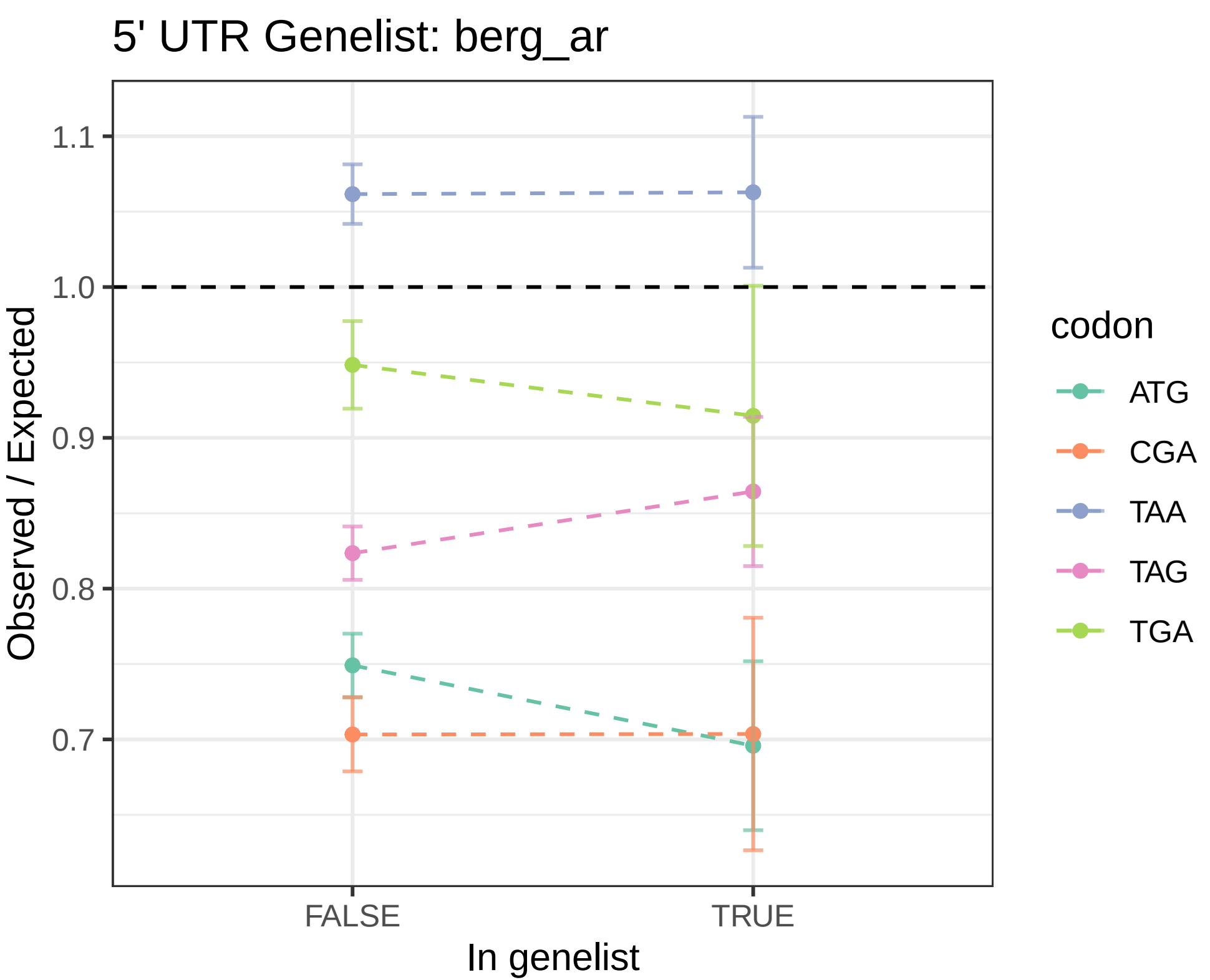

5' UTR UTR GC content
1.50
1.25
1.00
0.75
0.50
Observed / Expected
0
1
2
3
4
5
6
7
8
9
UTR GC content (Decile)
codon
ATG
CGA
TAA
TAG
TGA

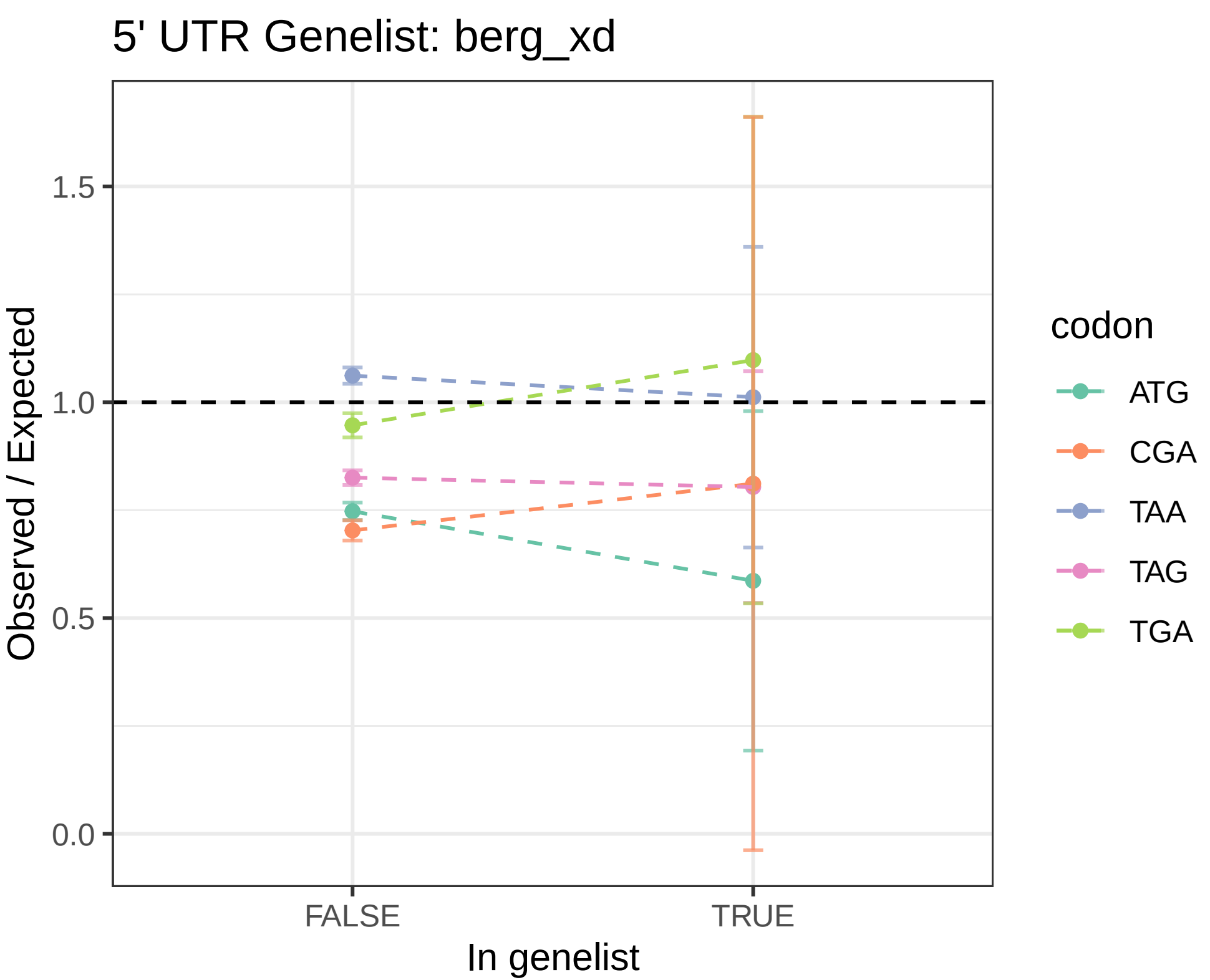

5' UTR Genelist: ACMG_2_0
1.25
1.00
0.75
0.50
0.25
Observed / Expected
FALSE
TRUE
In genelist
codon
ATG
CGA
TAA
TAG
TGA

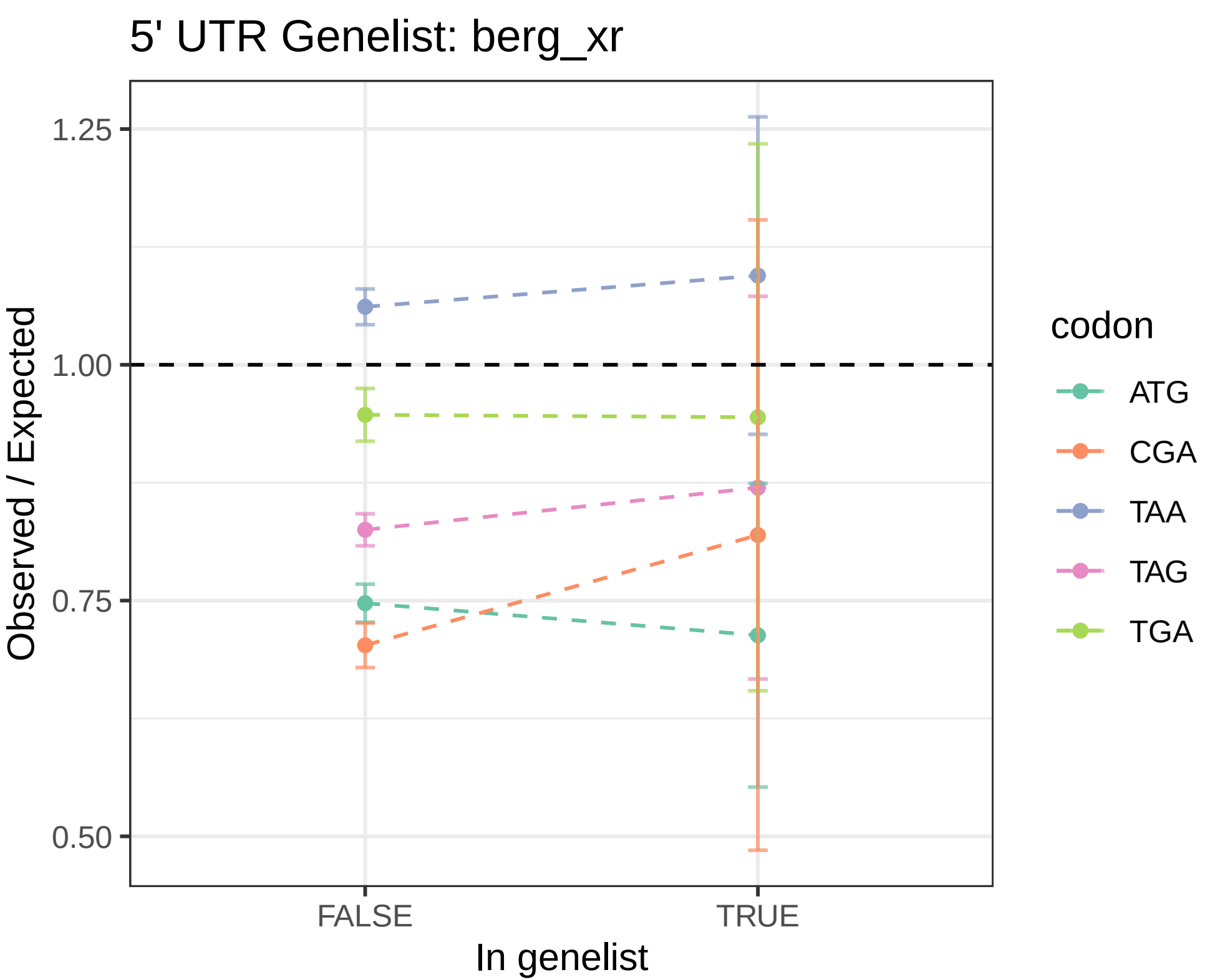

5' UTR Genelist: all_ad
1.2
1.0
0.8
0.6
Observed / Expected
FALSE
TRUE
In genelist
codon
ATG
CGA
TAA
TAG
TGA

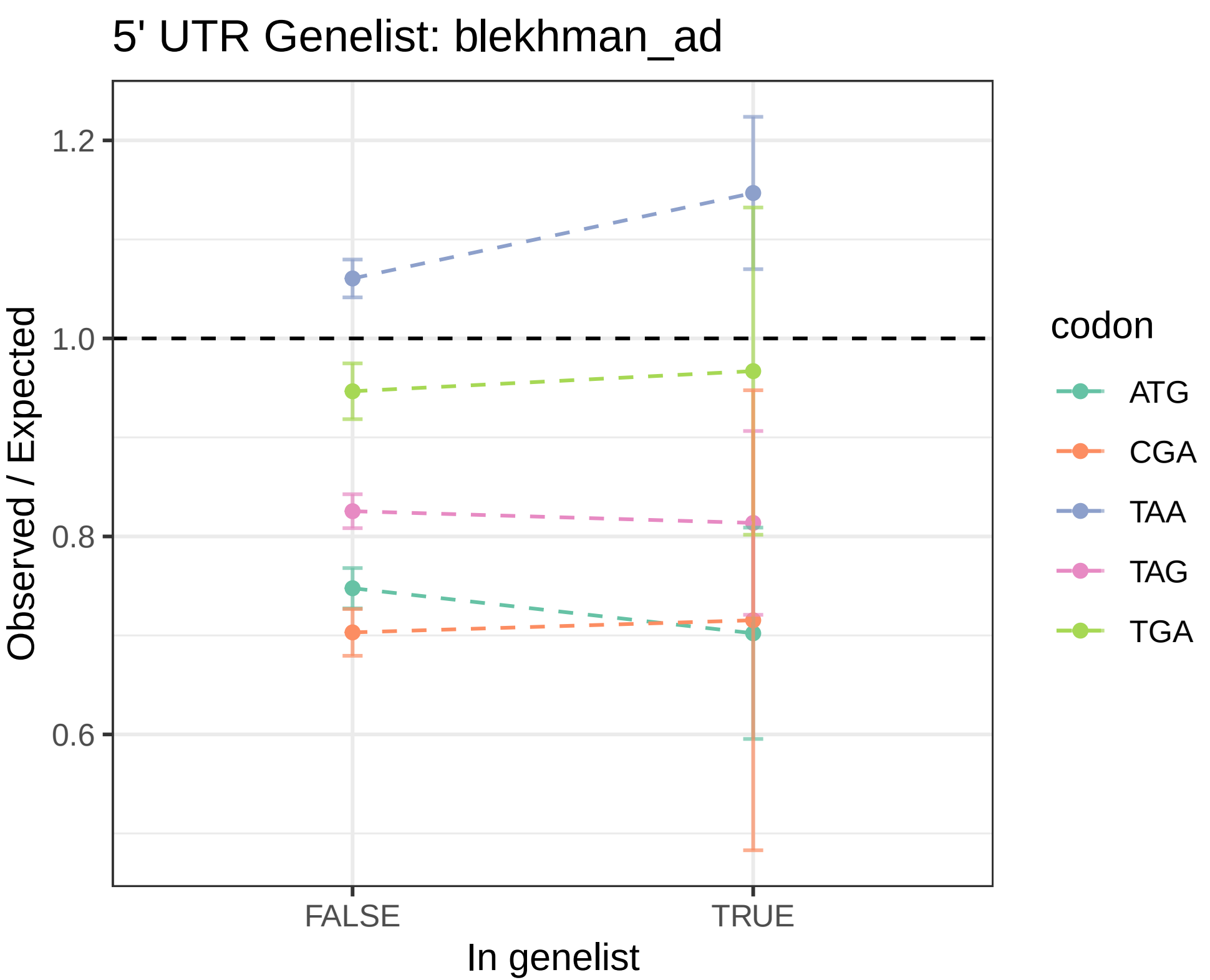

5' UTR Genelist: all_ar
1.1
1.0
0.9
0.8
0.7
Observed / Expected
FALSE
TRUE
In genelist
codon
ATG
CGA
TAA
TAG
TGA

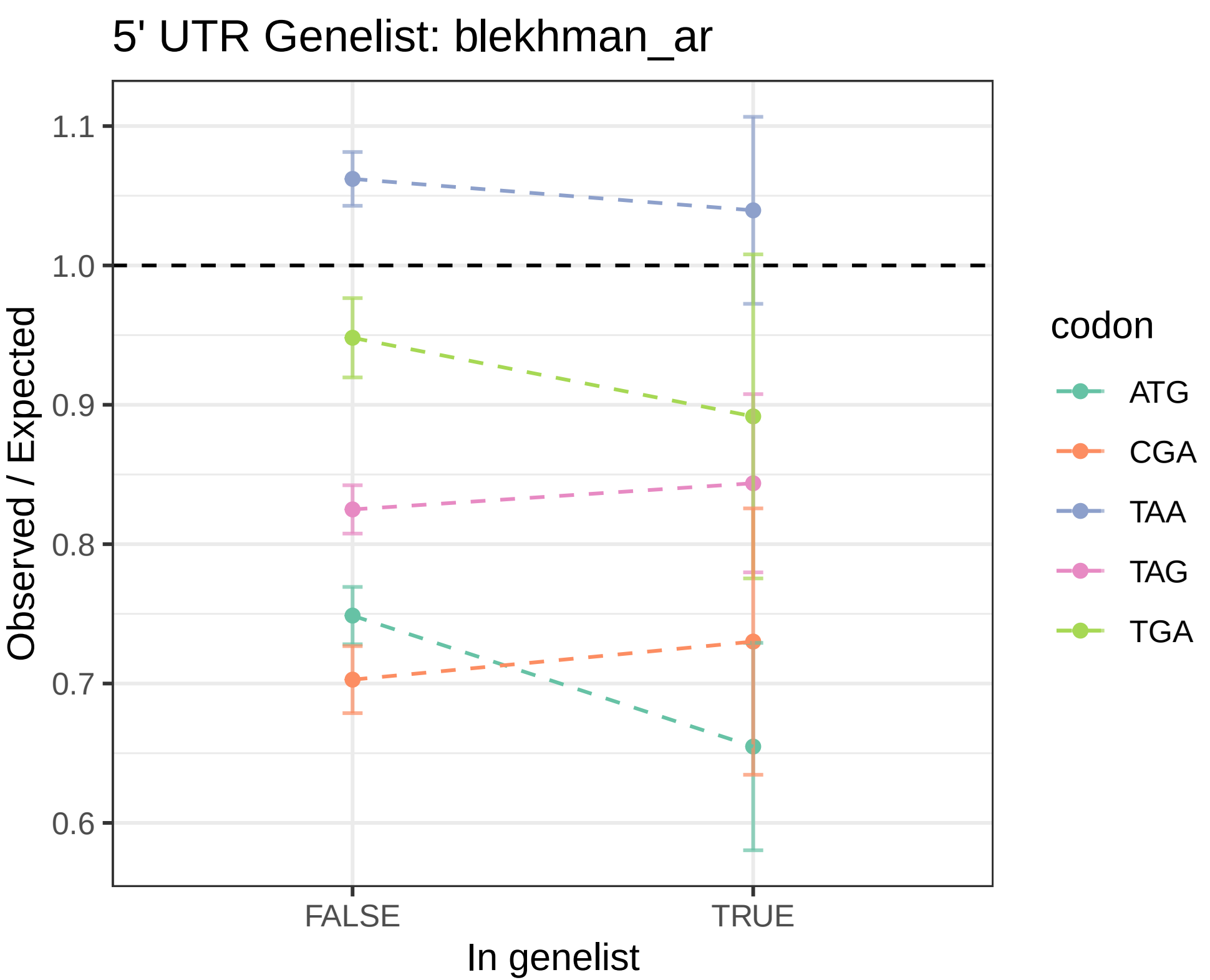

5' UTR Genelist: berg_ad
Observed / Expected
1.1
0.9
0.7
FALSE
TRUE
In genelist
codon
ATG
CGA
TAA
TAG
TGA

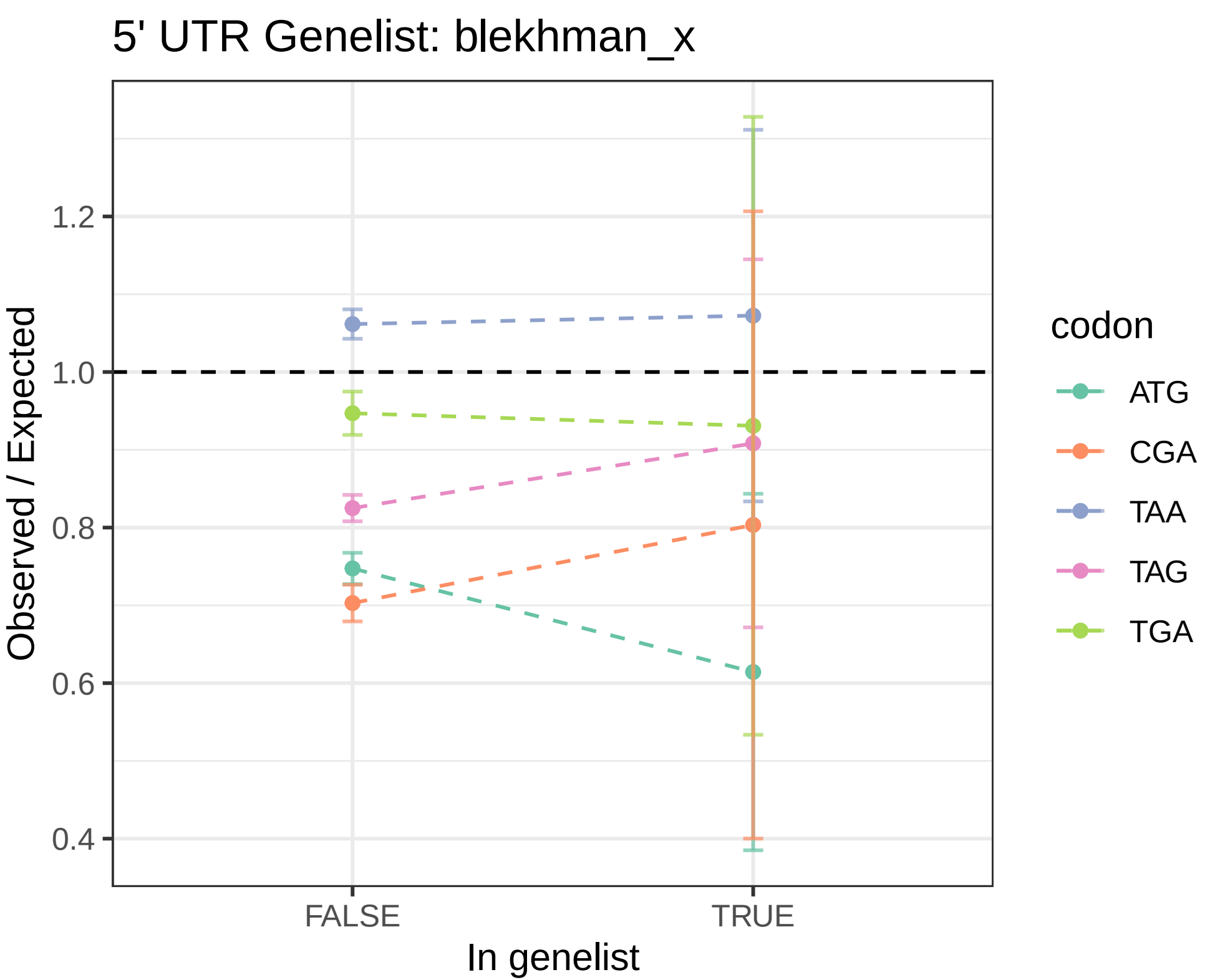

5' UTR Genelist: berg_ar
Observed / Expected
1.1
1.0
0.9
0.8
0.7
FALSE
TRUE
In genelist
codon
ATG
CGA
TAA
TAG
TGA

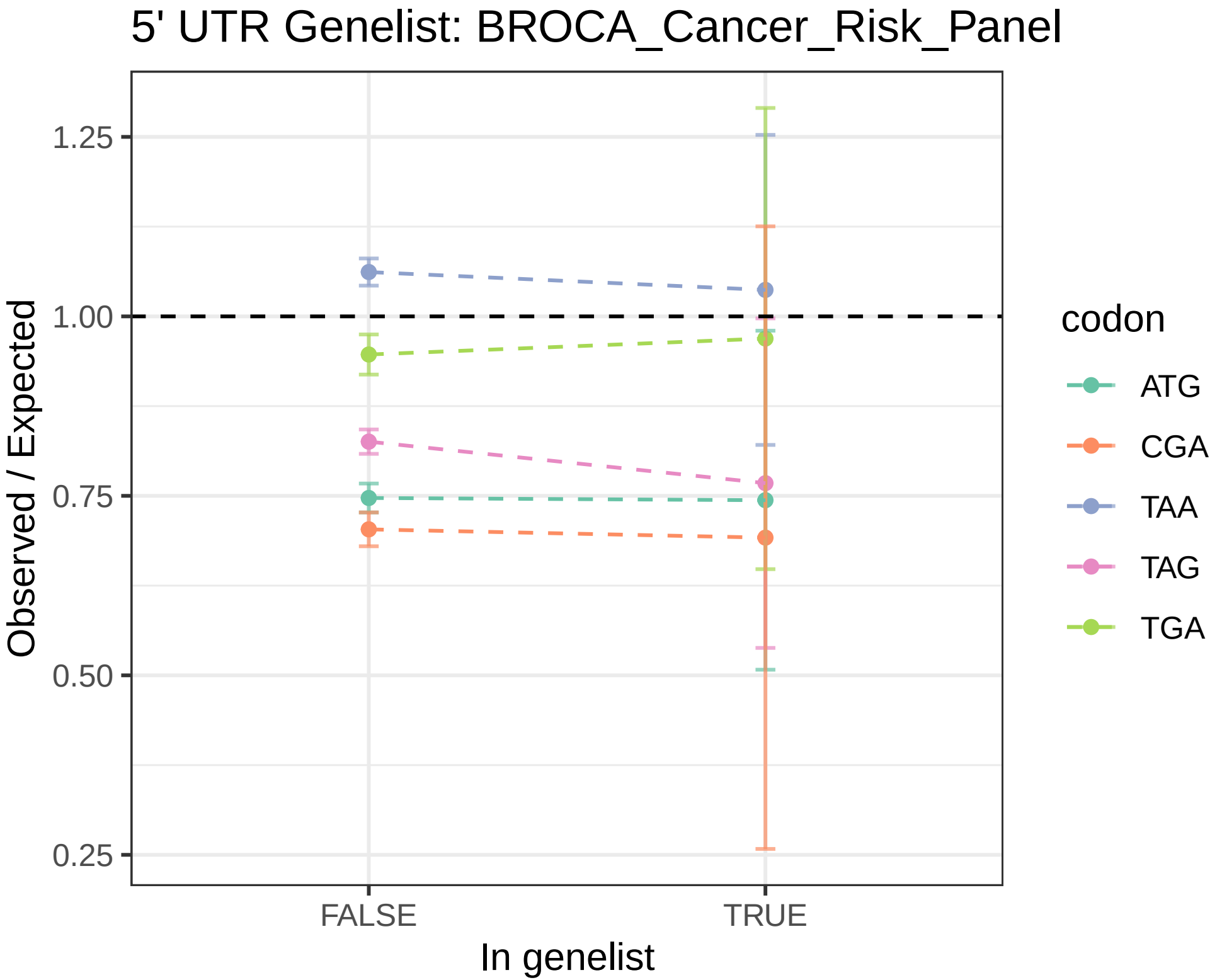

5' UTR Genelist: berg_xd
Observed / Expected
1.5
1.0
0.5
0.0
FALSE
TRUE
In genelist
codon
ATG
CGA
TAA
TAG
TGA

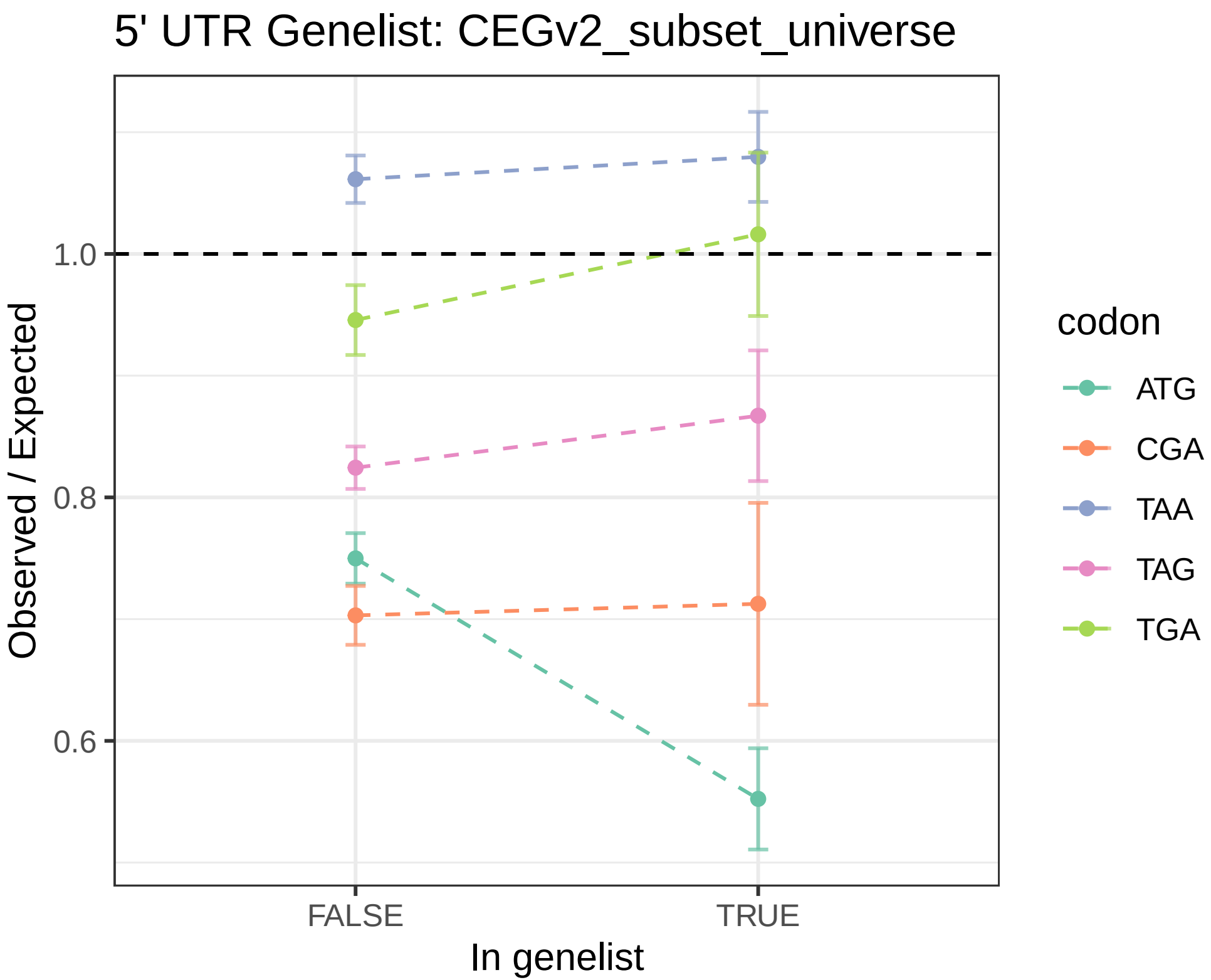

5' UTR Genelist: berg_xr
1.25
1.00
0.75
0.50
Observed / Expected
FALSE
TRUE
In genelist
codon
ATG
CGA
TAA
TAG
TGA

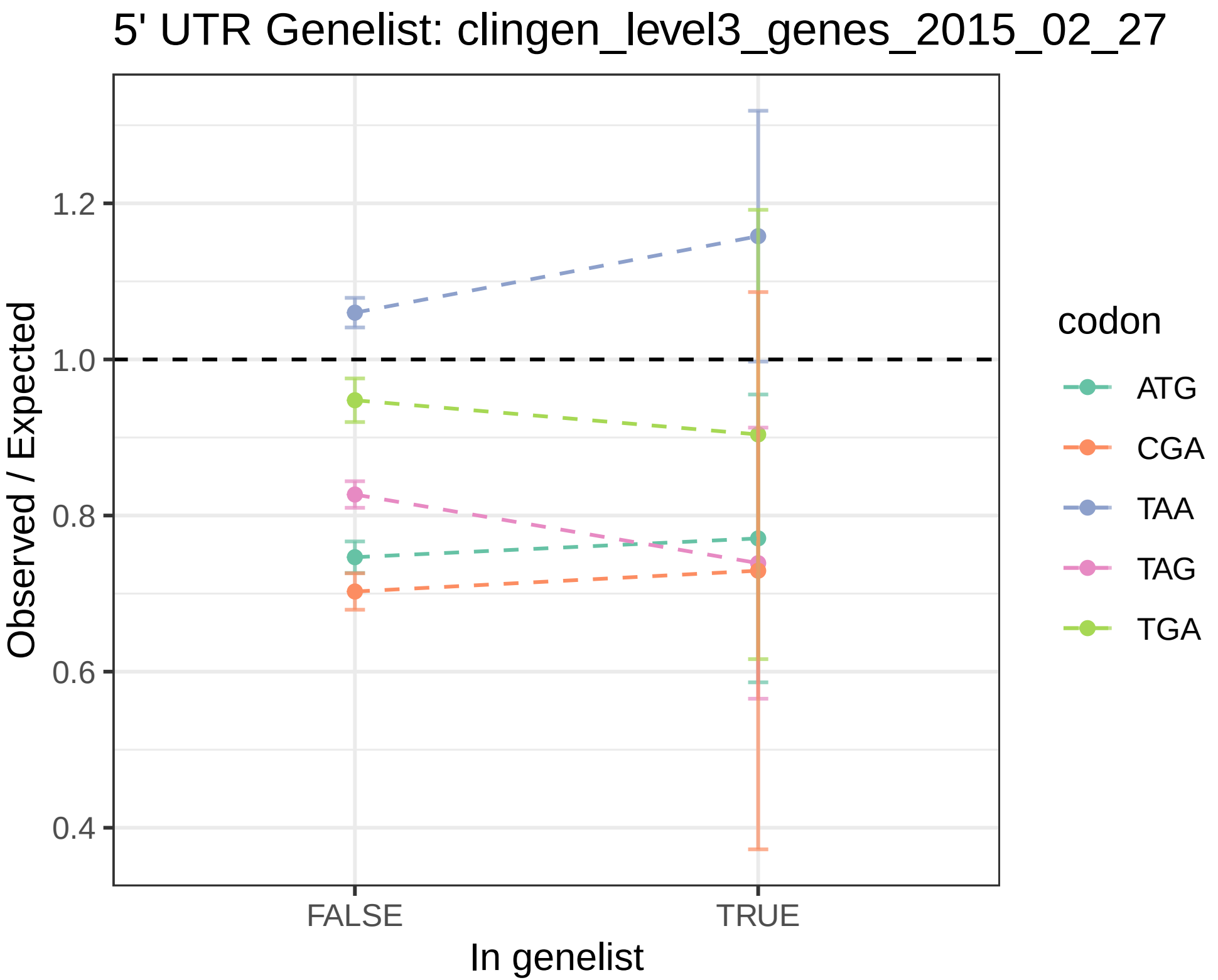

5' UTR Genelist: blekhman_ad
Observed / Expected
1.2
1.0
0.8
0.6
FALSE
TRUE
In genelist
codon
ATG
CGA
TAA
TAG
TGA

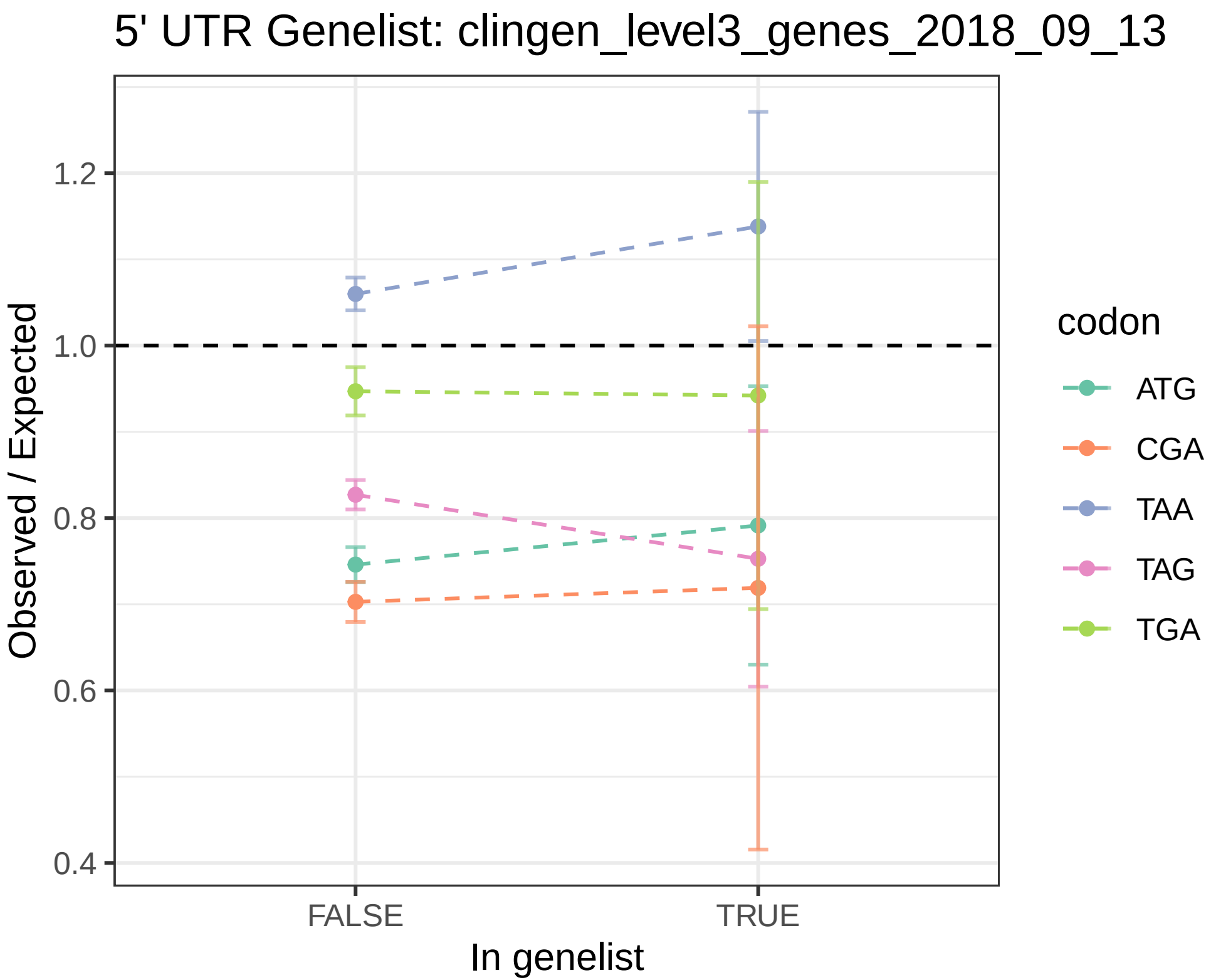

5' UTR Genelist: blekhman_ar
Observed / Expected
1.1
1.0
0.9
0.8
0.7
0.6
FALSE
TRUE
In genelist
codon
ATG
CGA
TAA
TAG
TGA

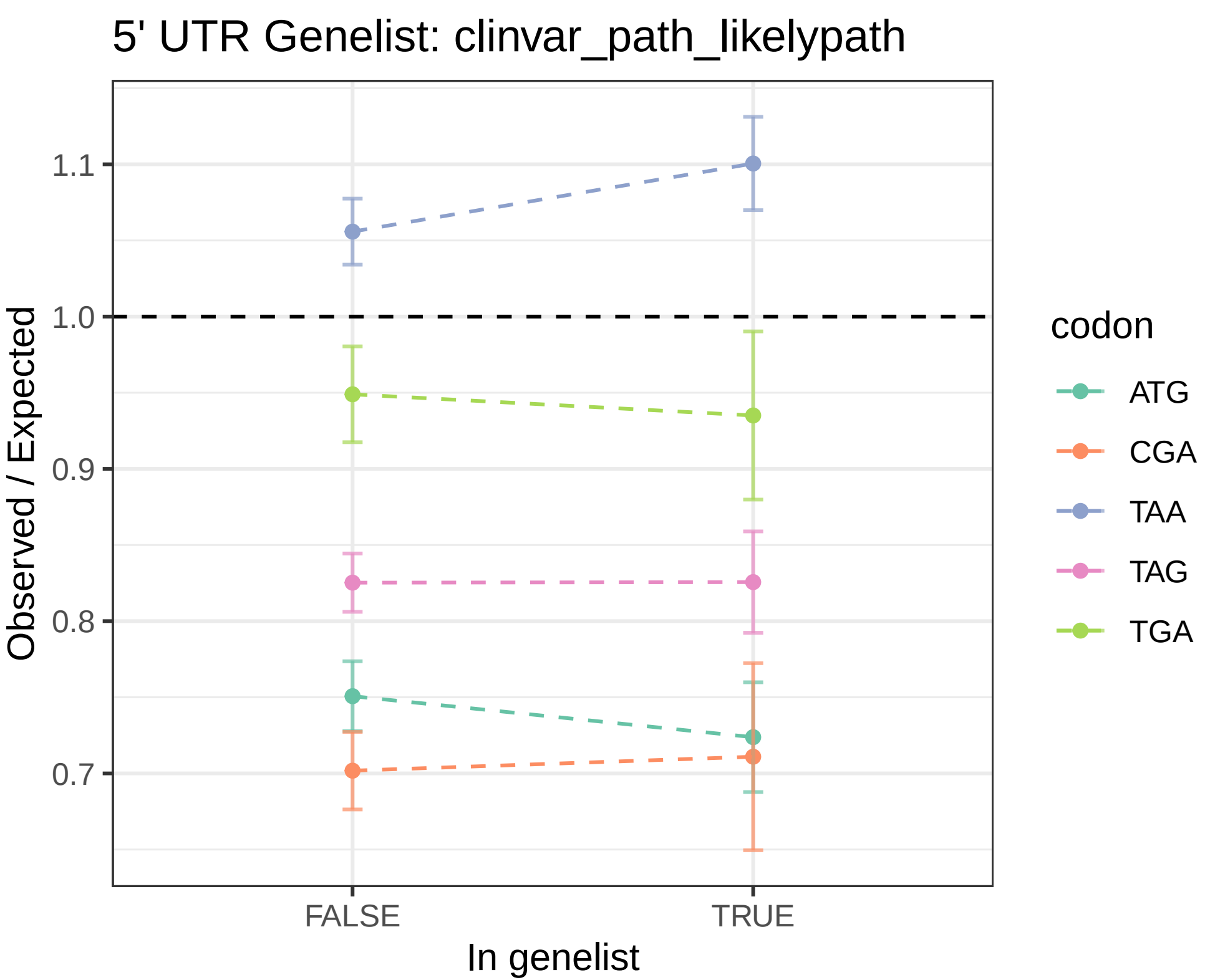

5' UTR Genelist: blekhman_x
Observed / Expected
1.2
1.0
0.8
0.6
0.4
FALSE
TRUE
In genelist
codon
ATG
CGA
TAA
TAG
TGA

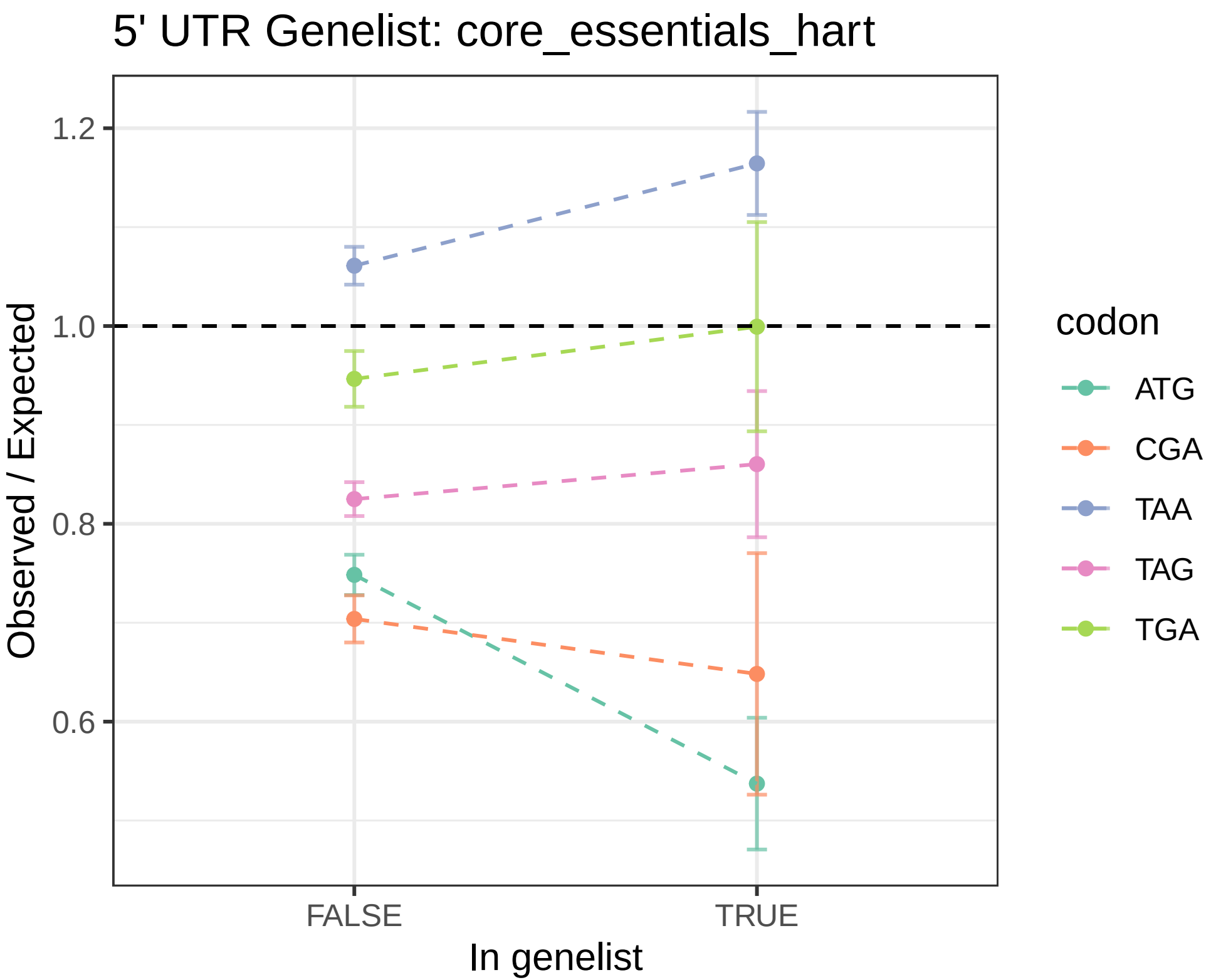

5' UTR Genelist: BROCA_Cancer_Risk_Panel
Observed / Expected
1.25
1.00
0.75
0.50
0.25
FALSE
TRUE
In genelist
codon
ATG
CGA
TAA
TAG
TGA

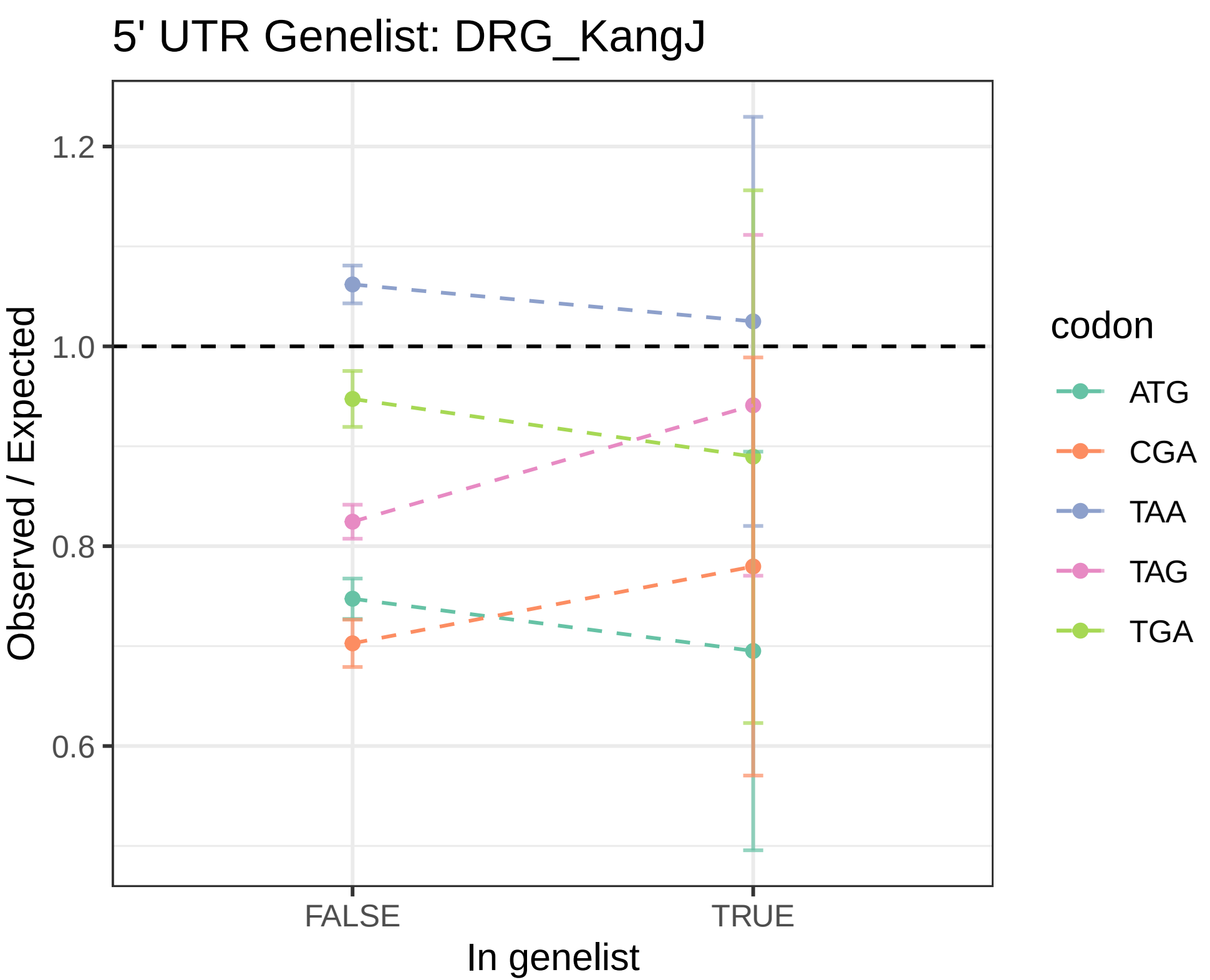

5' UTR Genelist: CEGv2_subset_universe
Observed / Expected
1.0
0.8
0.6
FALSE
TRUE
In genelist
codon
ATG
CGA
TAA
TAG
TGA

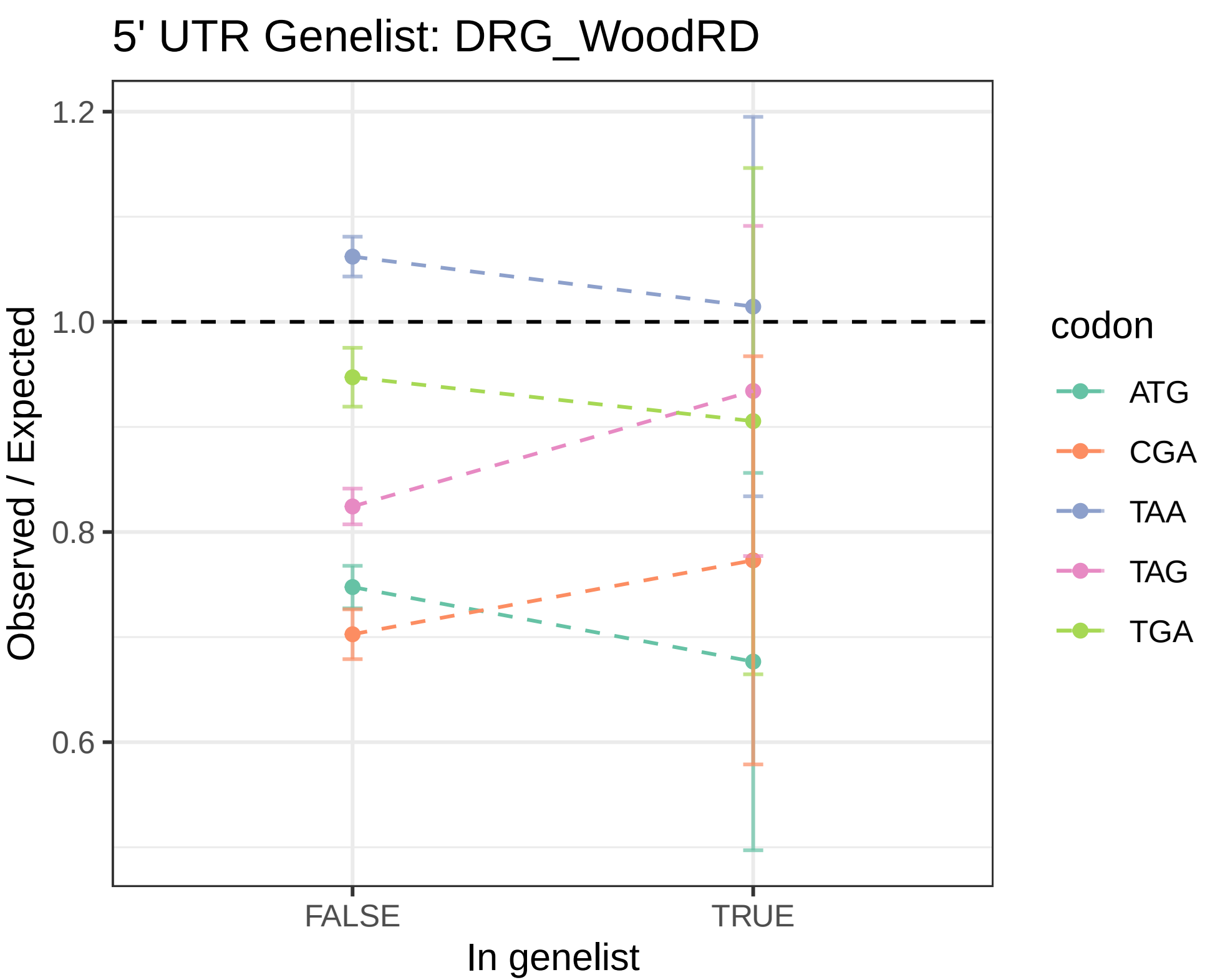

5' UTR Genelist: clingen_level3_genes_2015_02_27
Observed / Expected
1.2
1.0
0.8
0.6
0.4
FALSE
TRUE
In genelist
codon
ATG
CGA
TAA
TAG
TGA

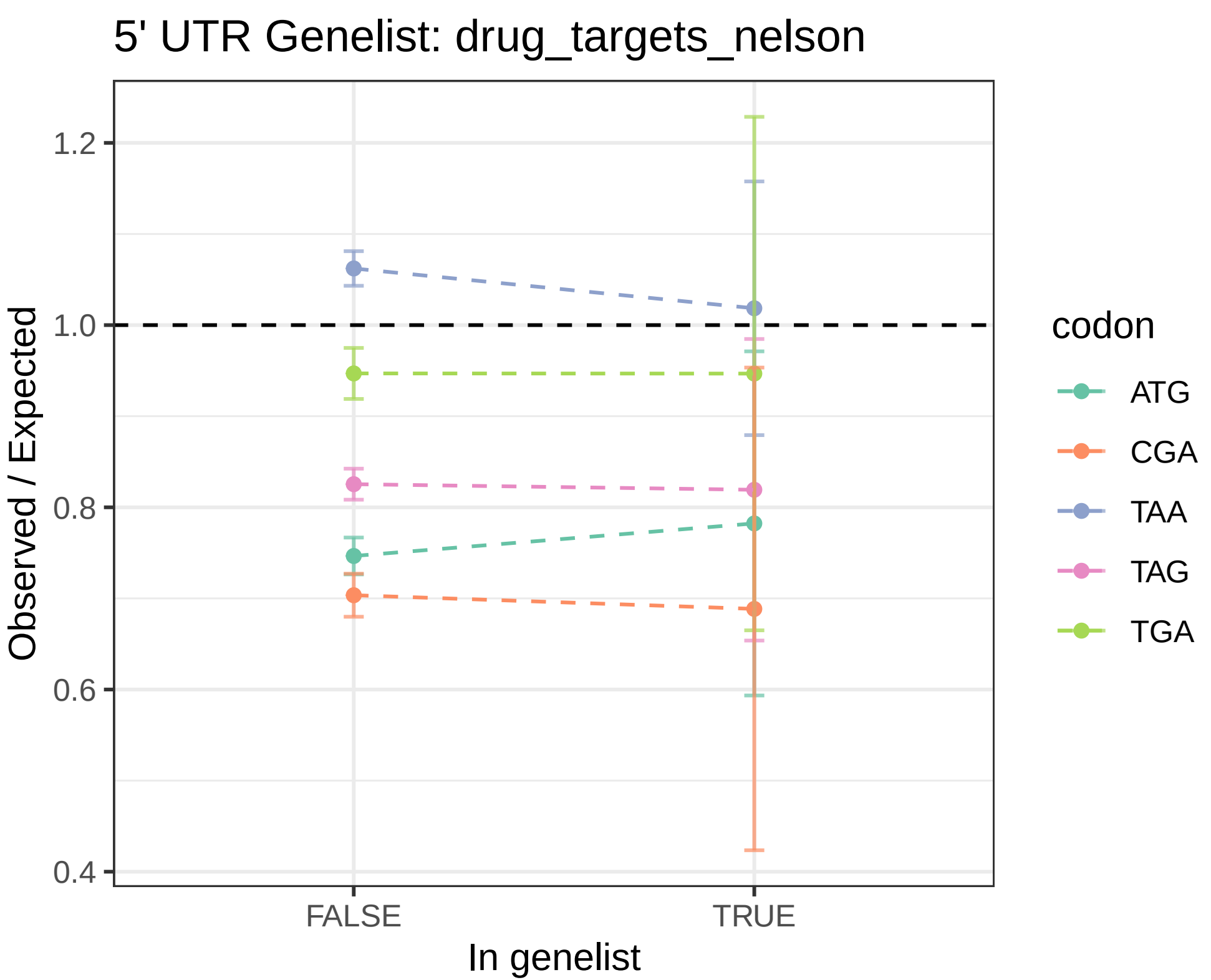

5' UTR Genelist: clingen_level3_genes_2018_09_13
Observed / Expected
1.2
1.0
0.8
0.6
0.4
FALSE
TRUE
In genelist
codon
ATG
CGA
TAA
TAG
TGA

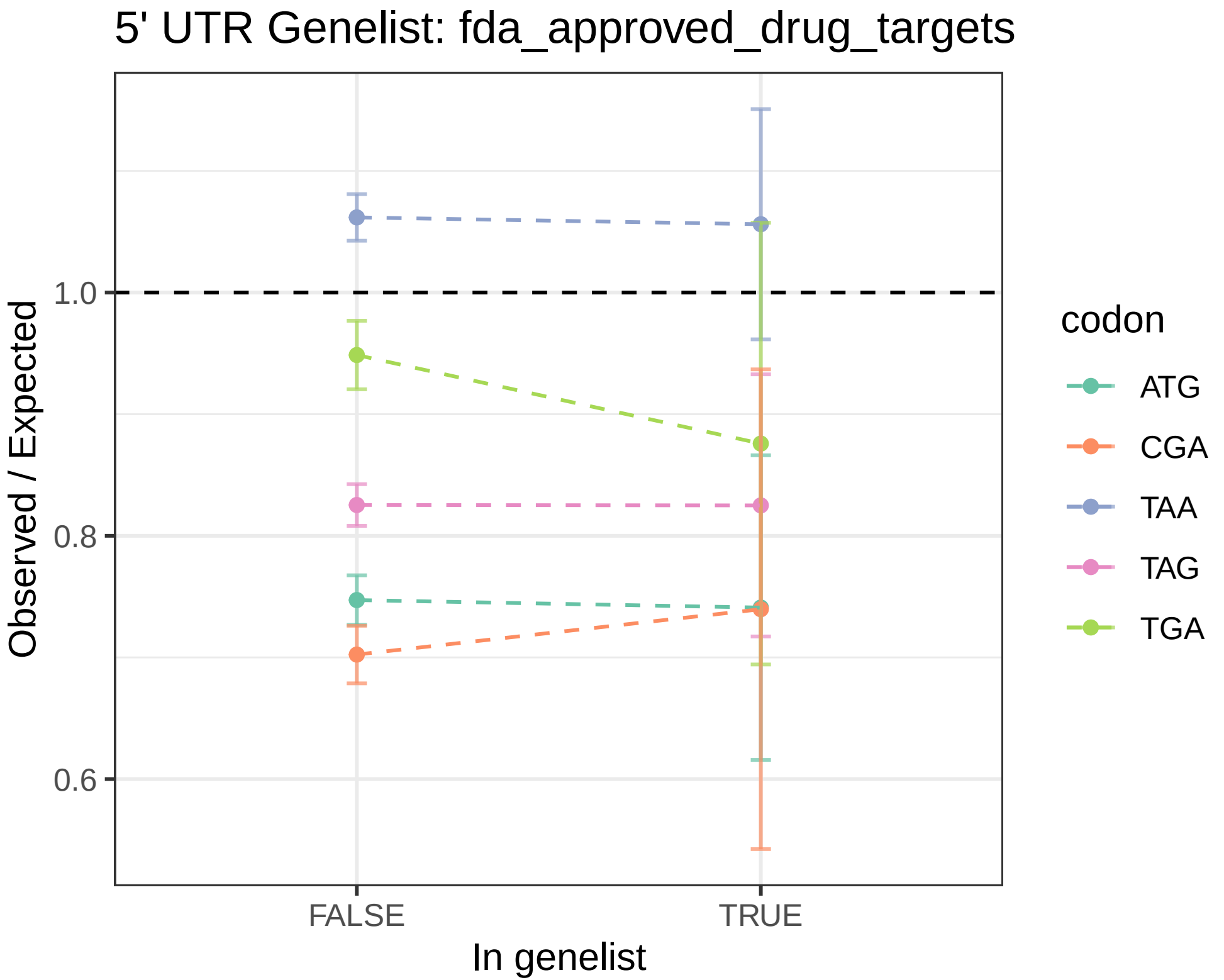

5' UTR Genelist: clinvar_path_likelypath
Observed / Expected
1.1
1.0
0.9
0.8
0.7
FALSE
TRUE
In genelist
codon
ATG
CGA
TAA
TAG
TGA

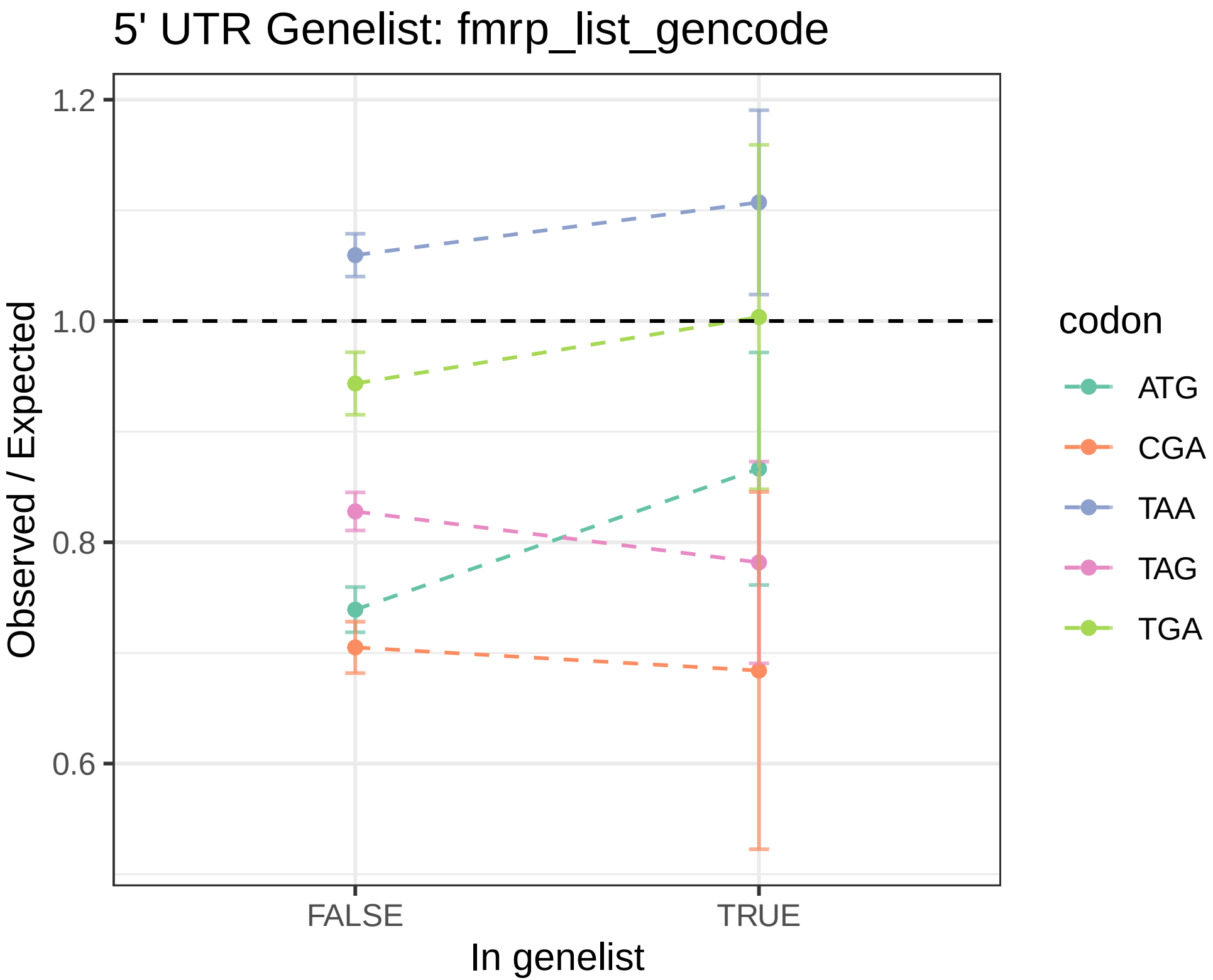

5' UTR Genelist: core_essentials_hart
Observed / Expected
1.2
1.0
0.8
0.6
FALSE
TRUE
In genelist
codon
ATG
CGA
TAA
TAG
TGA

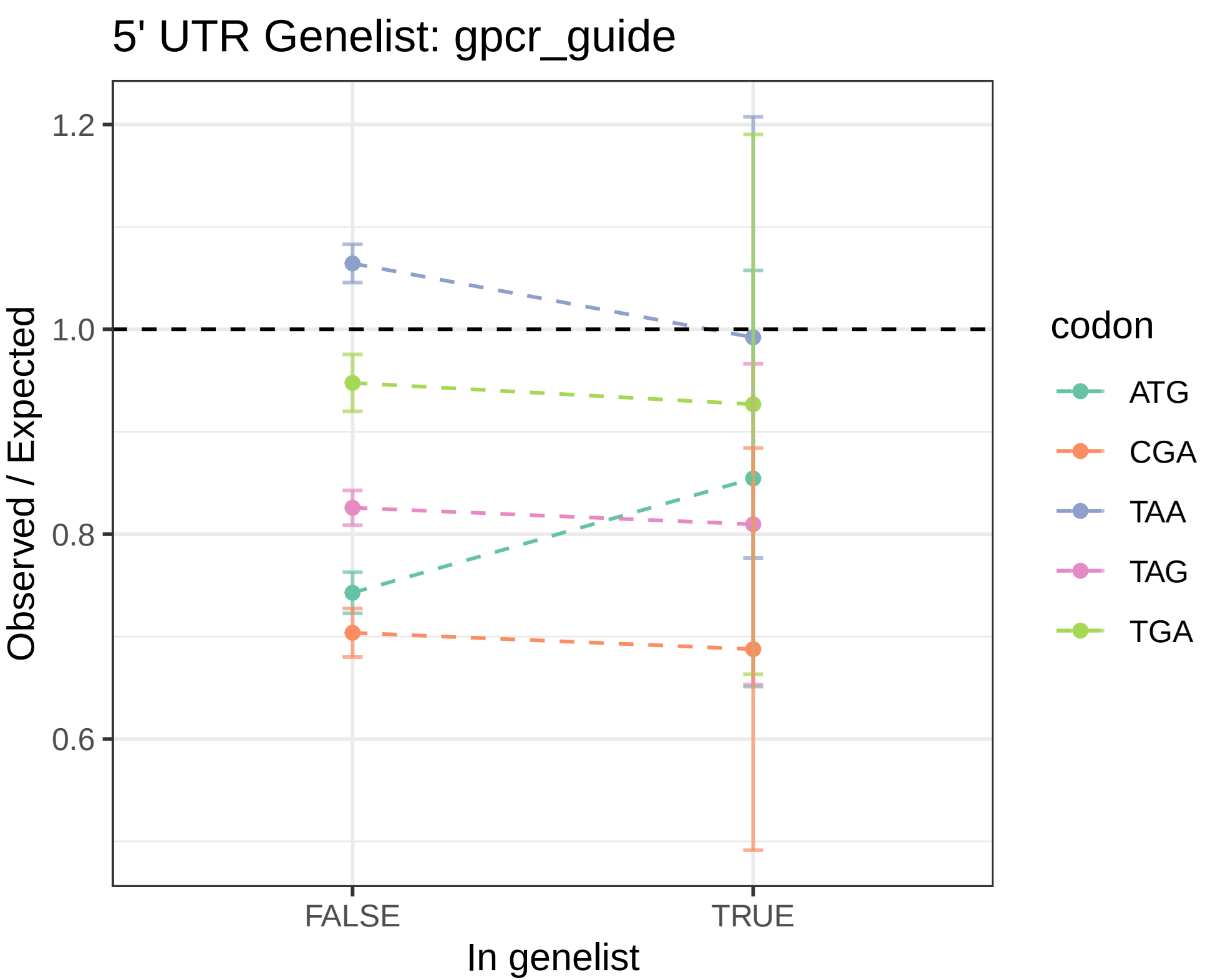

5' UTR Genelist: DRG_KangJ
Observed / Expected
1.2
1.0
0.8
0.6
FALSE
TRUE
In genelist
codon
ATG
CGA
TAA
TAG
TGA

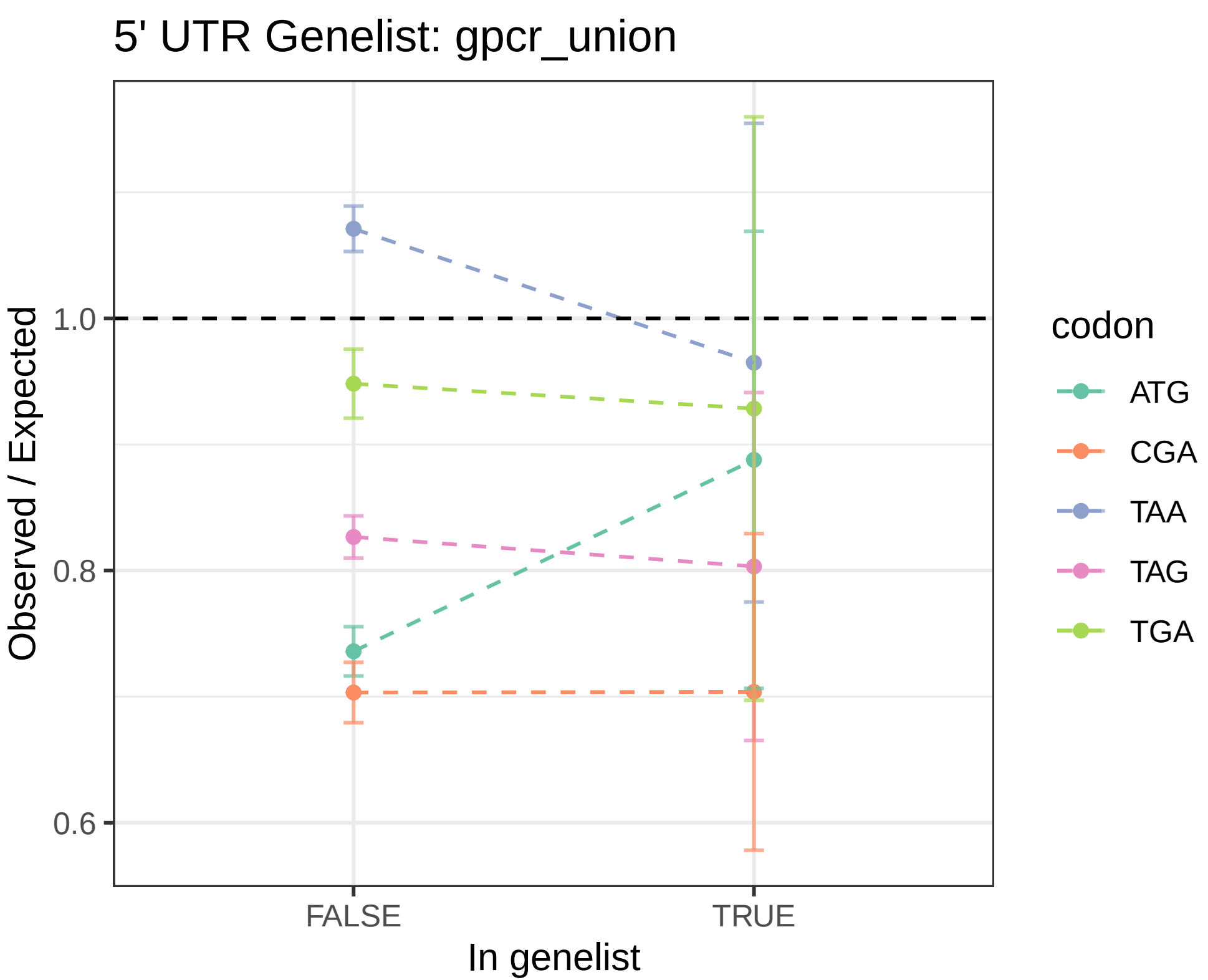

5' UTR Genelist: DRG_WoodRD
1.2
1.0
0.8
0.6
Observed / Expected
FALSE
TRUE
In genelist
codon
ATG
CGA
TAA
TAG
TGA

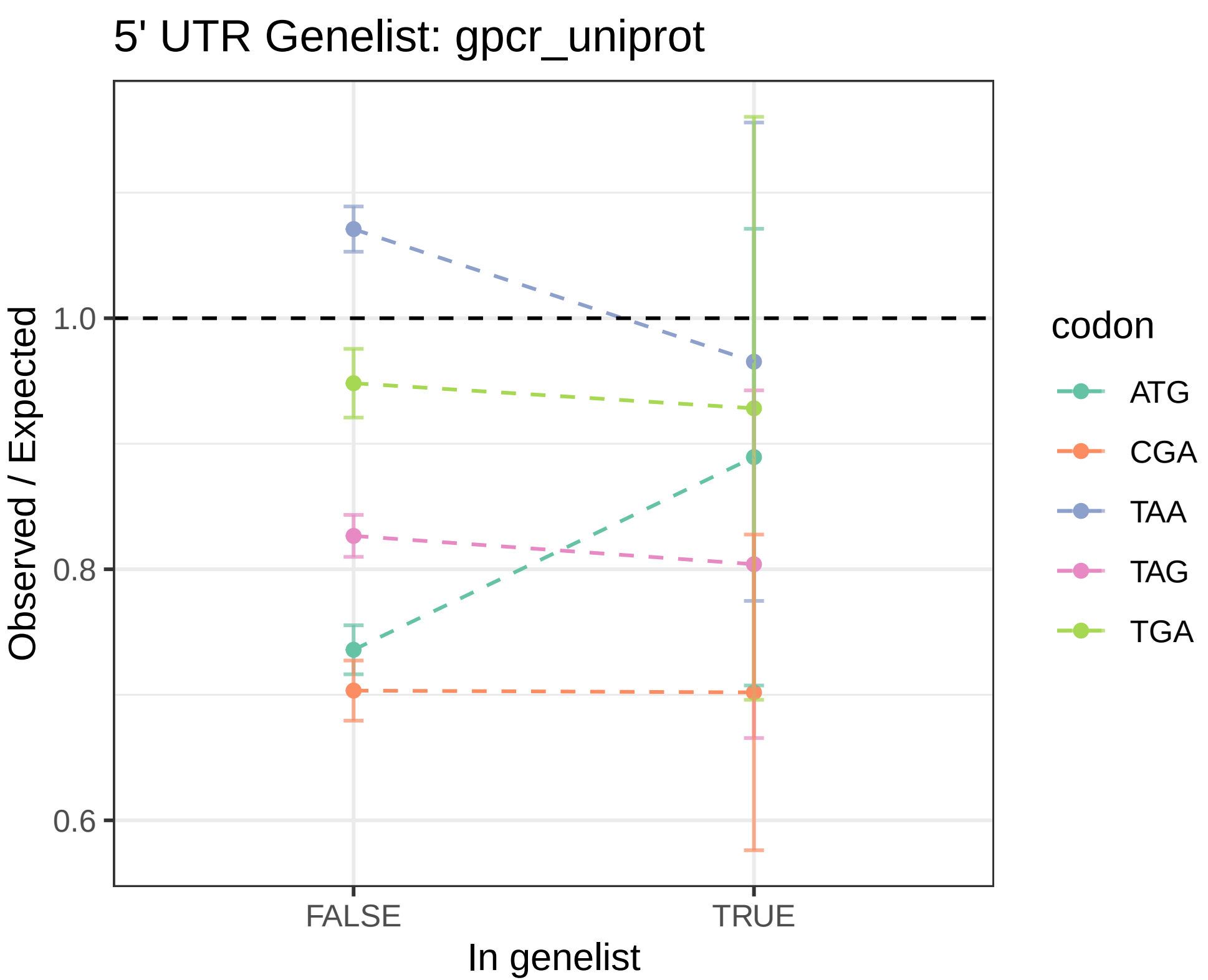

5' UTR Genelist: drug_targets_nelson
Observed / Expected
1.2
1.0
0.8
0.6
0.4
FALSE
TRUE
In genelist
codon
ATG
CGA
TAA
TAG
TGA

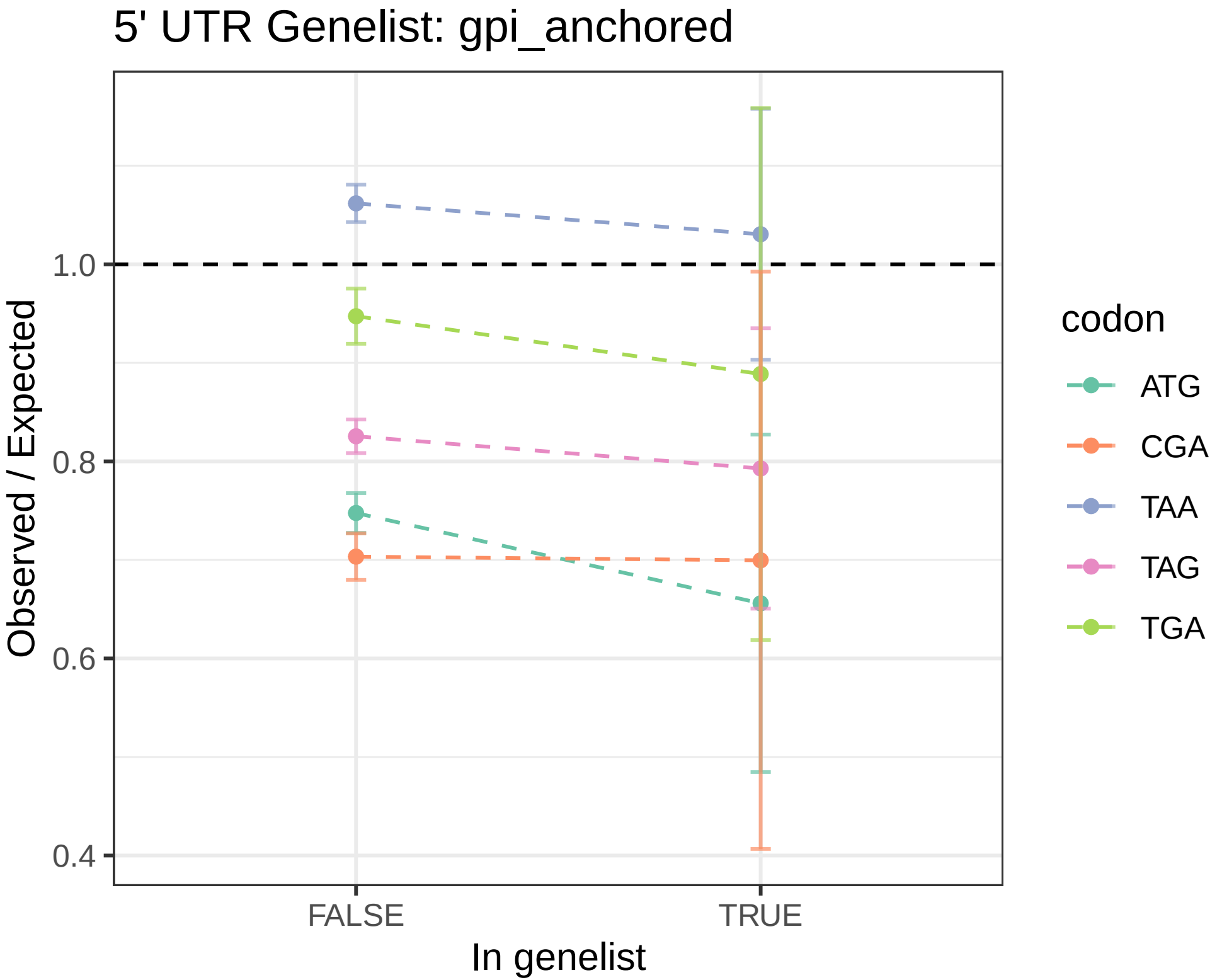

5' UTR Genelist: fda_approved_drug_targets
Observed / Expected
1.0
0.8
0.6
FALSE
TRUE
In genelist
codon
ATG
CGA
TAA
TAG
TGA

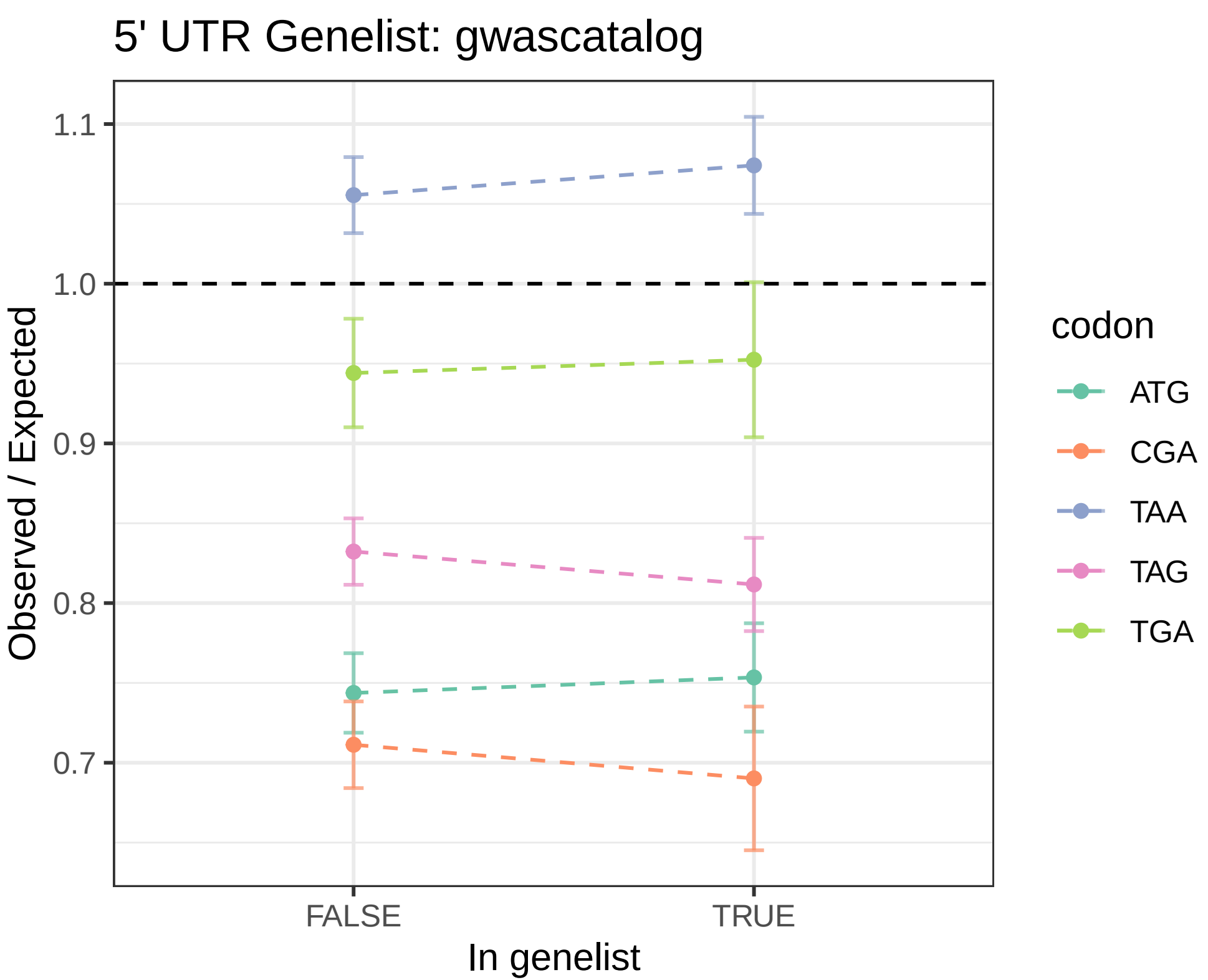

5' UTR Genelist: fmrp_list_gencode
1.2
1.0
0.8
0.6
Observed / Expected
FALSE
TRUE
In genelist
codon
ATG
CGA
TAA
TAG
TGA

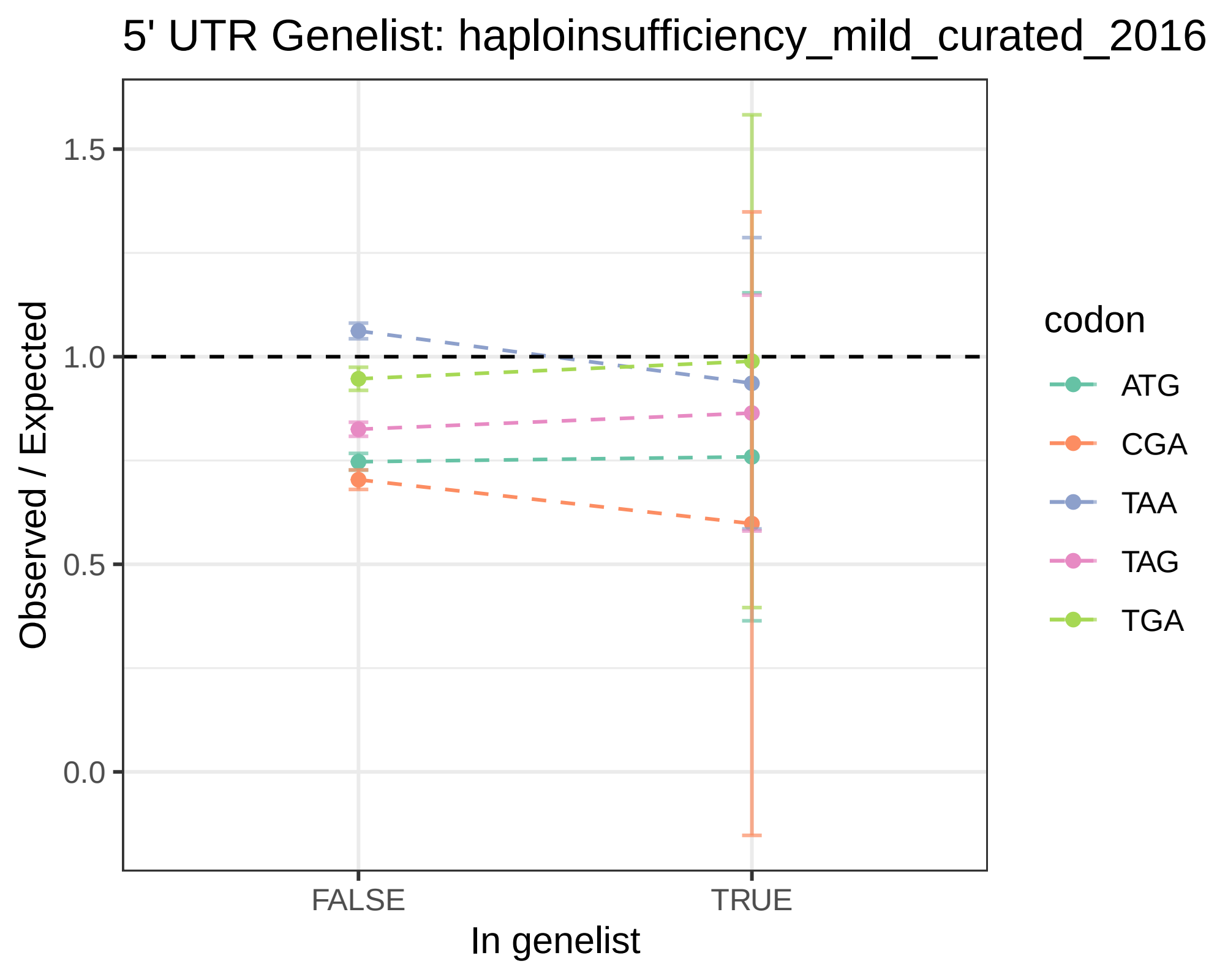

5' UTR Genelist: gpcr_guide
1.2
1.0
0.8
0.6
Observed / Expected
FALSE
TRUE
In genelist
codon
ATG
CGA
TAA
TAG
TGA

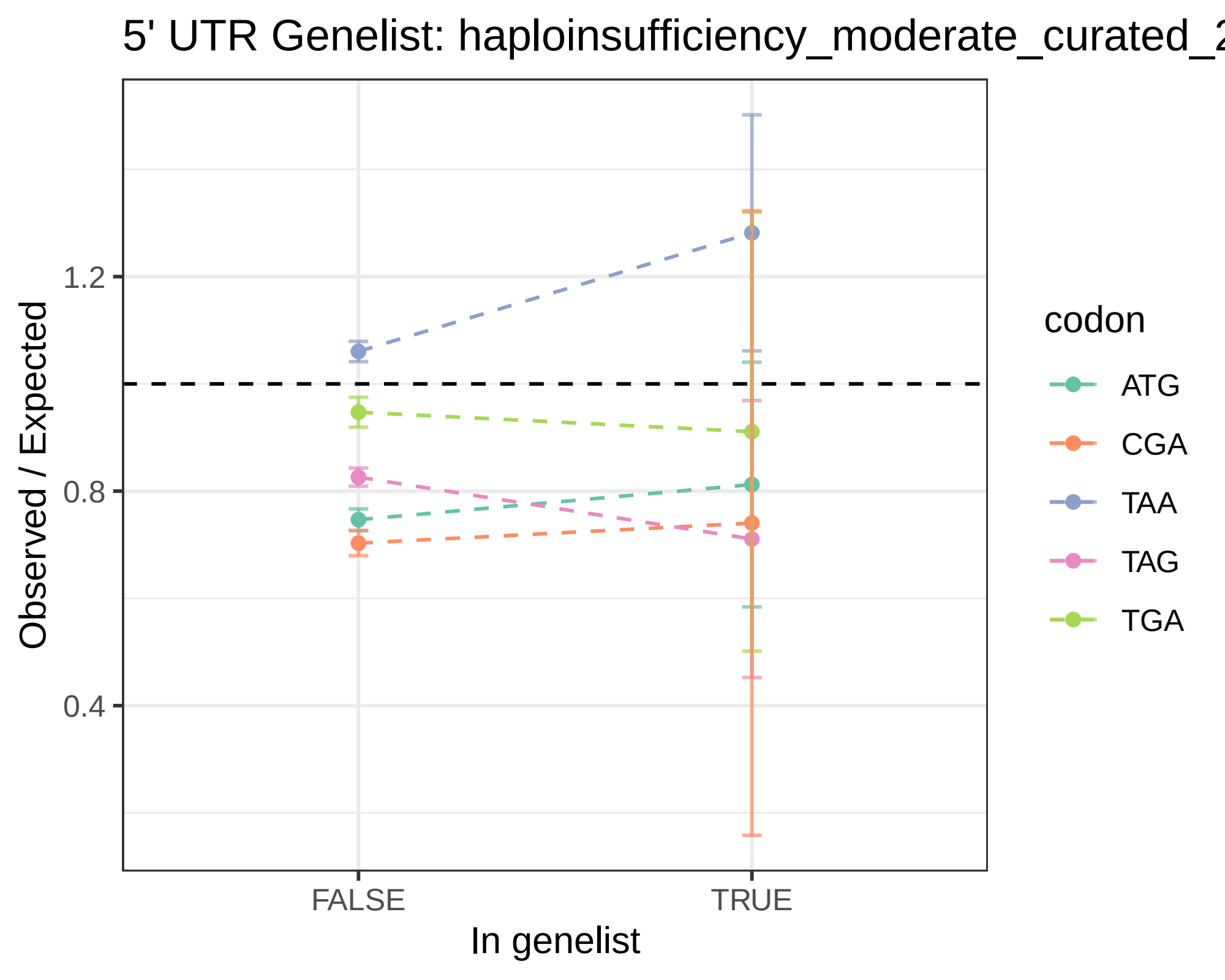

5' UTR Genelist: gpcr_union
Observed / Expected
1.0
0.8
0.6
FALSE
TRUE
In genelist
codon
ATG
CGA
TAA
TAG
TGA

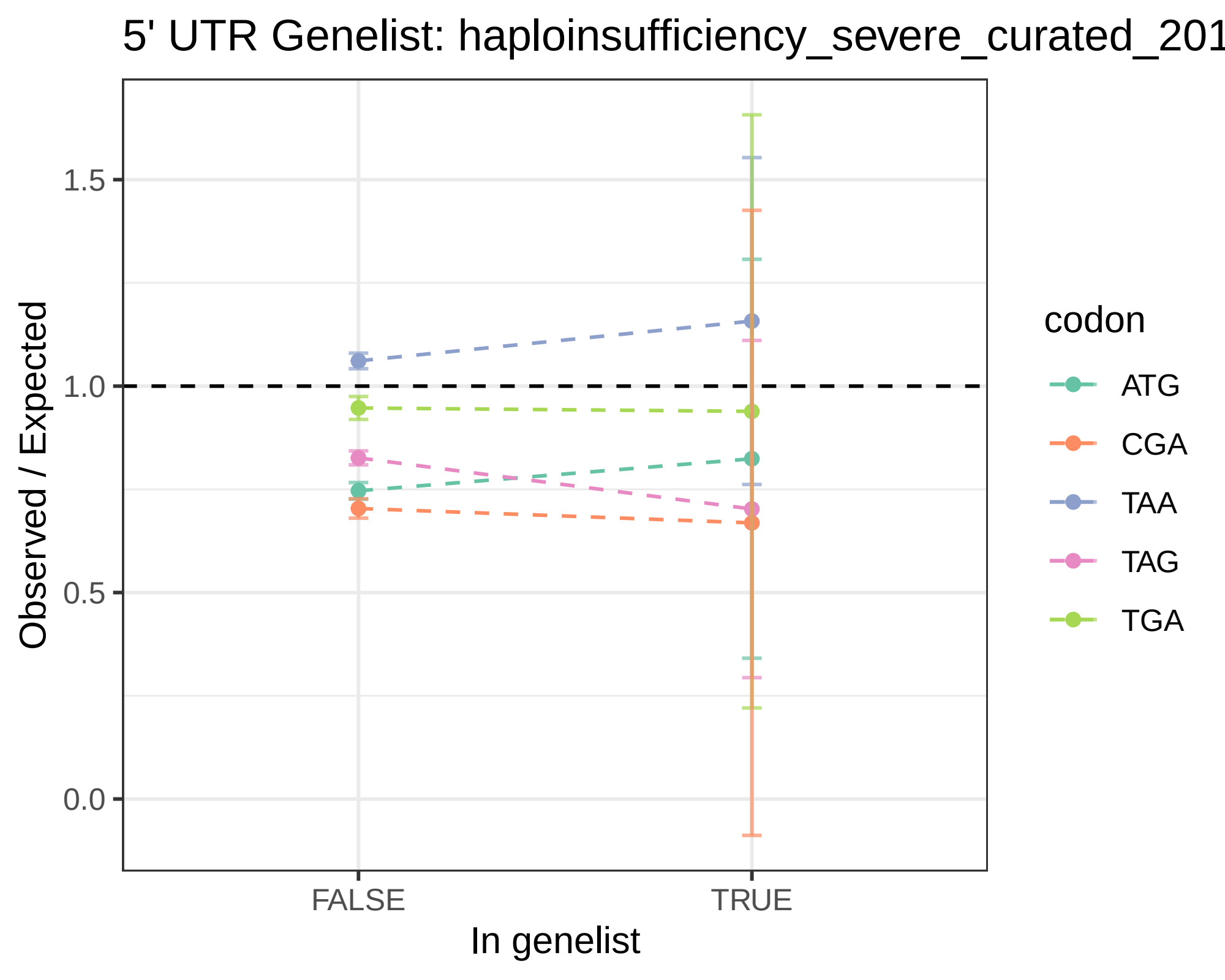

5' UTR Genelist: gpcr_uniprot
Observed / Expected
1.0
0.8
0.6
FALSE
TRUE
In genelist
codon
ATG
CGA
TAA
TAG
TGA

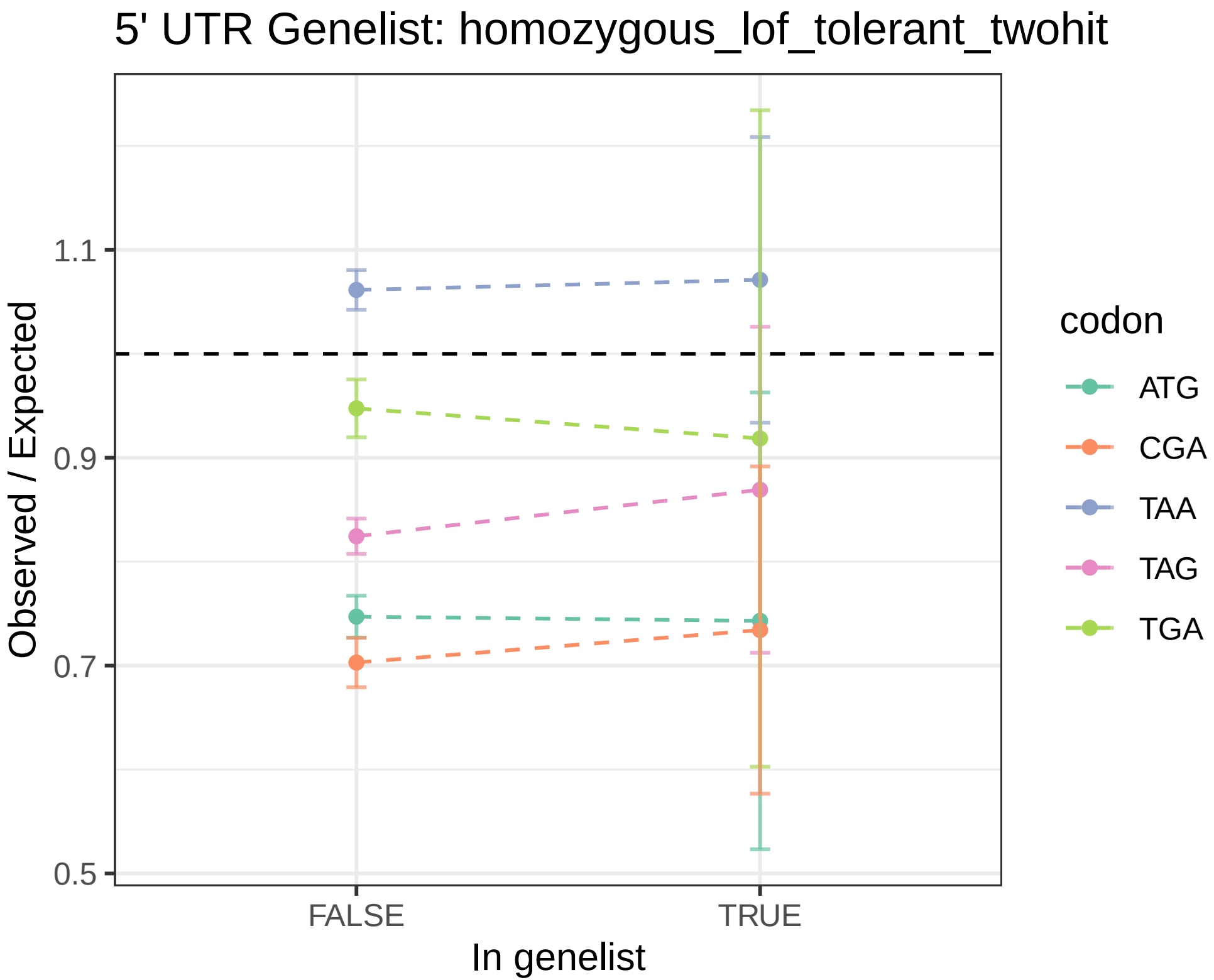

5' UTR Genelist: gpi_anchored
Observed / Expected
1.0
0.8
0.6
0.4
FALSE
TRUE
In genelist
codon
ATG
CGA
TAA
TAG
TGA

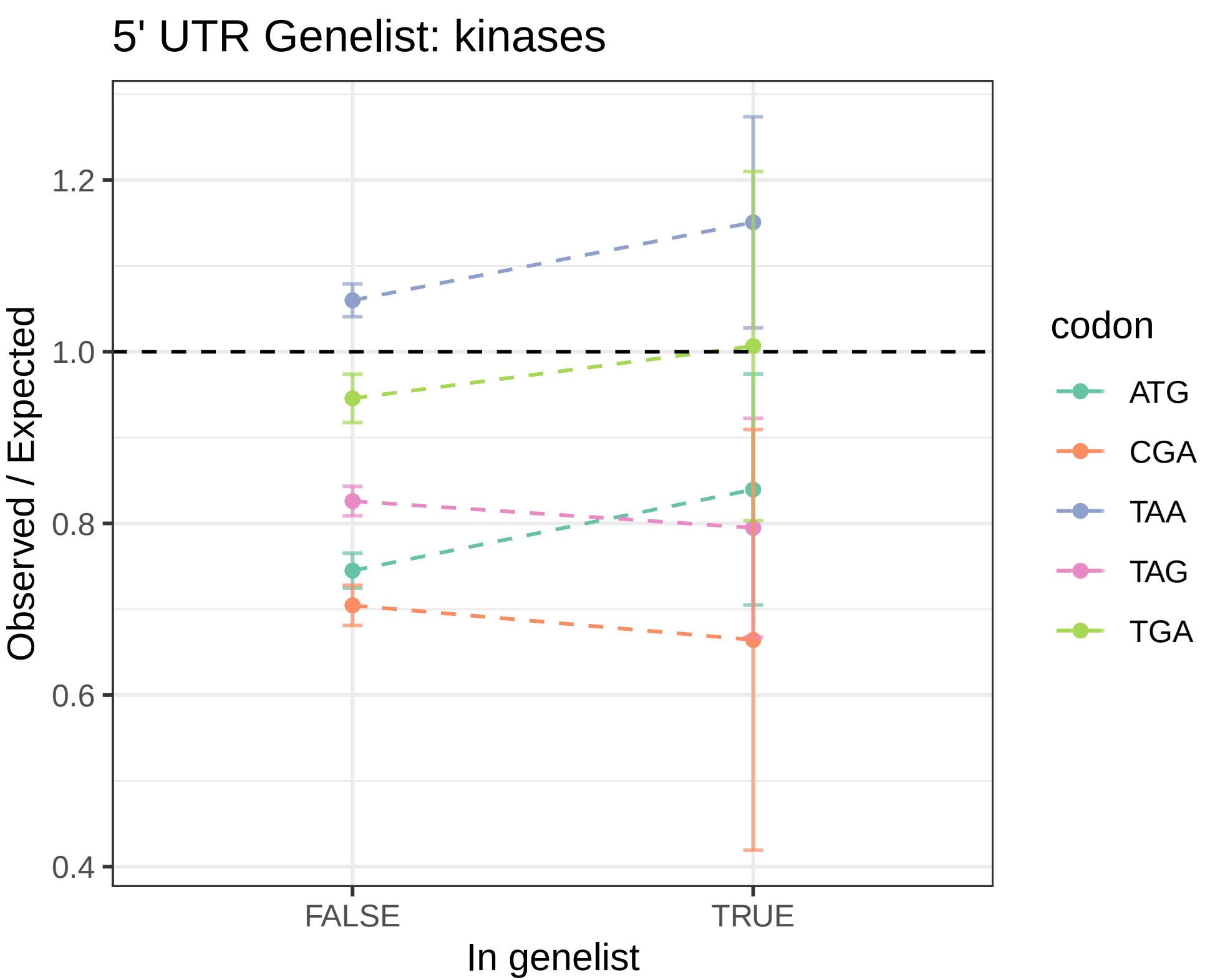

5' UTR Genelist: gwascatalog
1.1
1.0
0.9
0.8
0.7
Observed / Expected
FALSE
TRUE
In genelist
codon
ATG
CGA
TAA
TAG
TGA

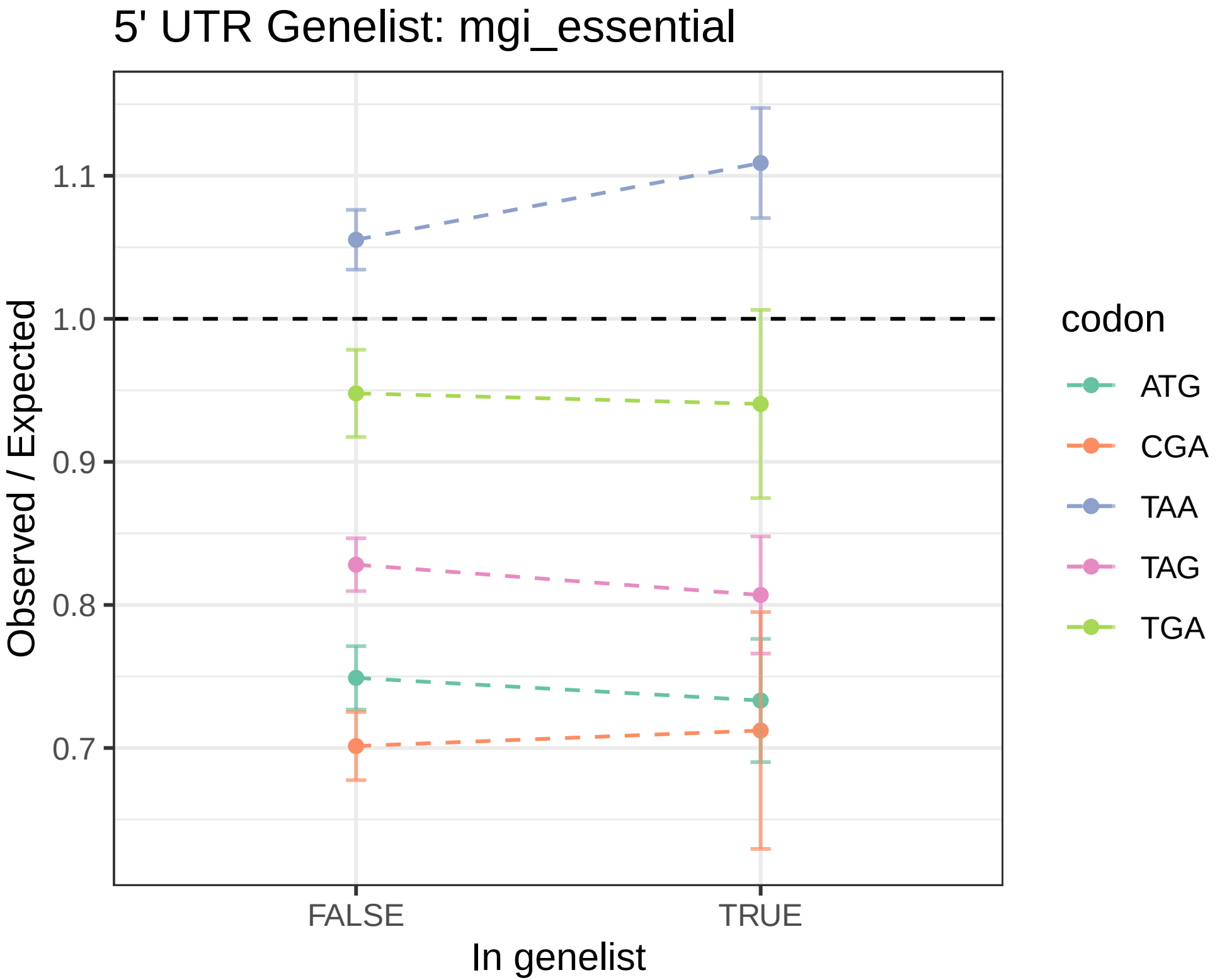

5' UTR Genelist: haploinsufficiency_mild_curated_2016
Observed / Expected
1.5
1.0
0.5
0.0
FALSE
TRUE
In genelist
codon
ATG
CGA
TAA
TAG
TGA

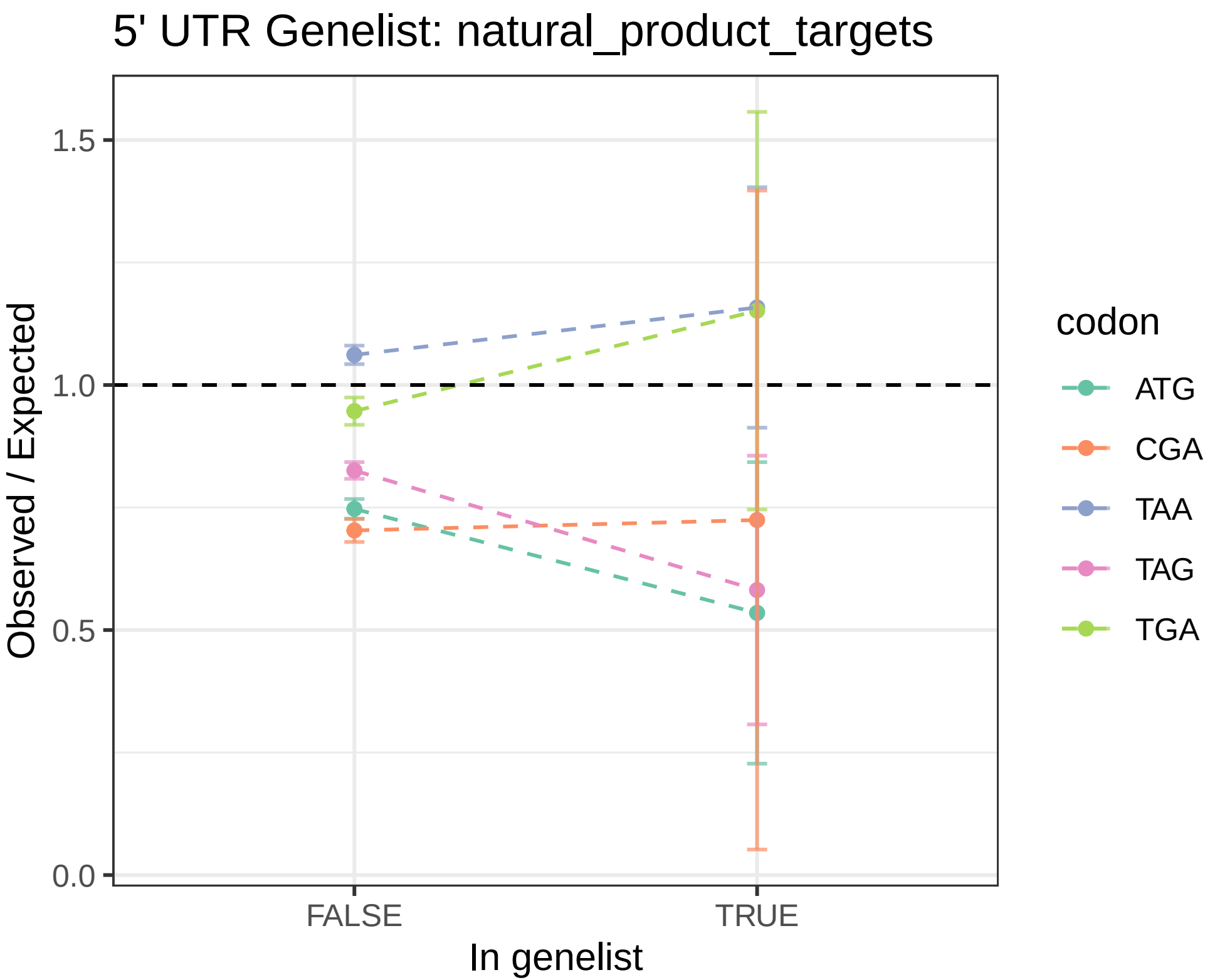

5' UTR Genelist: haploinsufficiency_moderate_curated_2
Observed / Expected
1.2
0.8
0.4
FALSE
TRUE
In genelist
codon
ATG
CGA
TAA
TAG
TGA

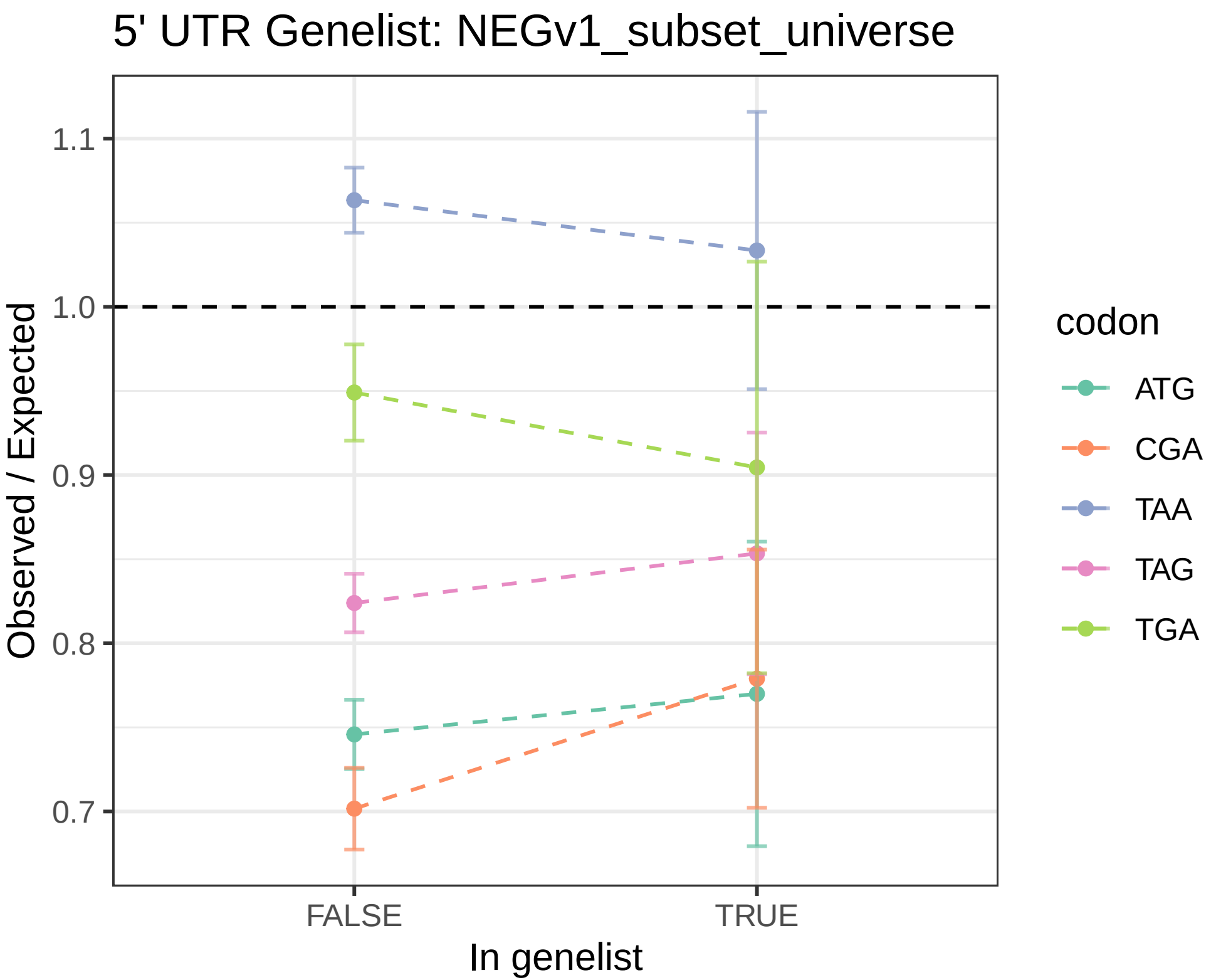

5' UTR Genelist: haploinsufficiency_severe_curated_201
Observed / Expected
1.5
1.0
0.5
0.0
FALSE
TRUE
In genelist
codon
ATG
CGA
TAA
TAG
TGA

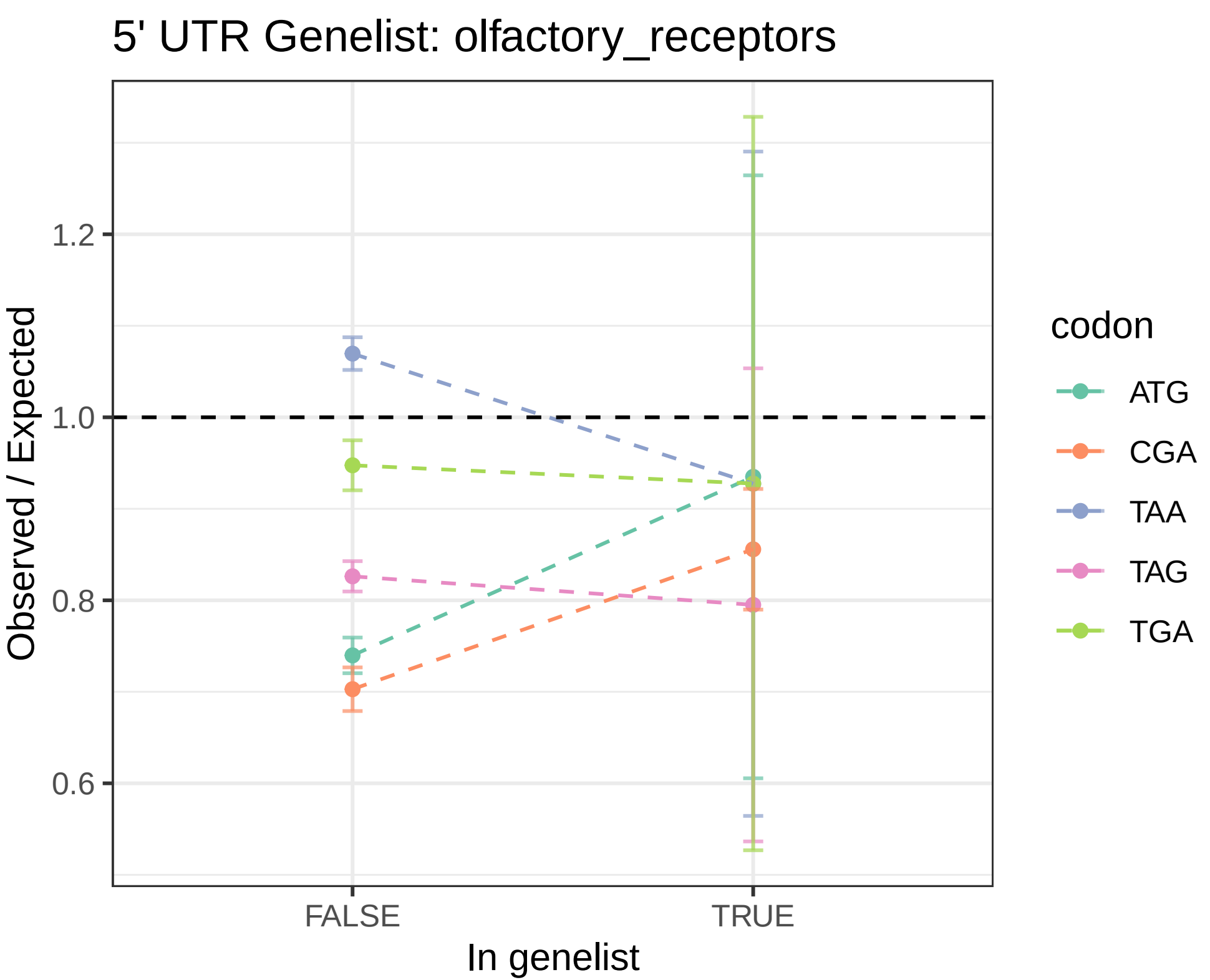

5' UTR Genelist: homozygous_lof_tolerant_twohit
Observed / Expected
1.1
0.9
0.7
0.5
FALSE
TRUE
In genelist
codon
ATG
CGA
TAA
TAG
TGA

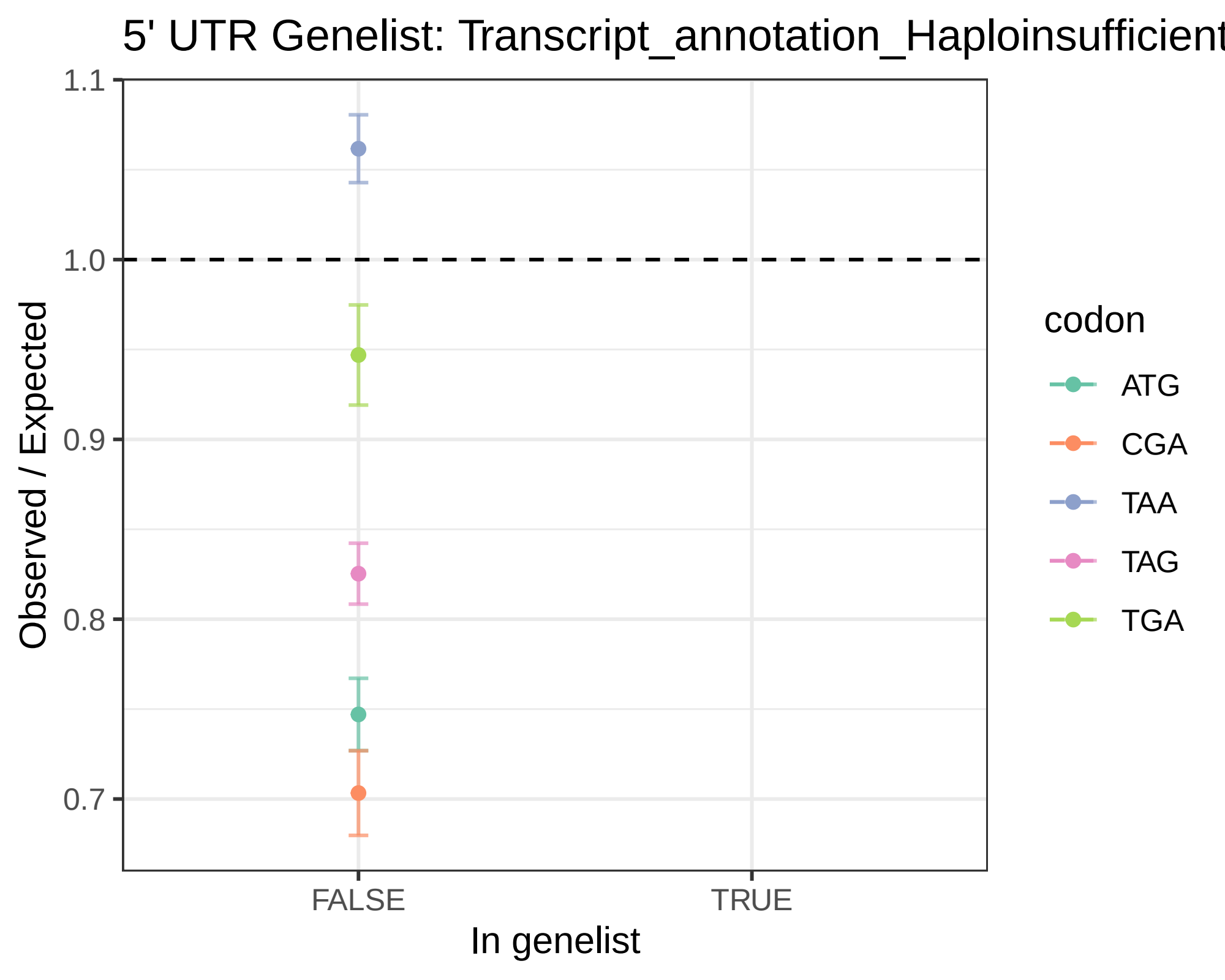

5' UTR Genelist: kinases
Observed / Expected
1.2
1.0
0.8
0.6
0.4
FALSE
TRUE
In genelist
codon
ATG
CGA
TAA
TAG
TGA

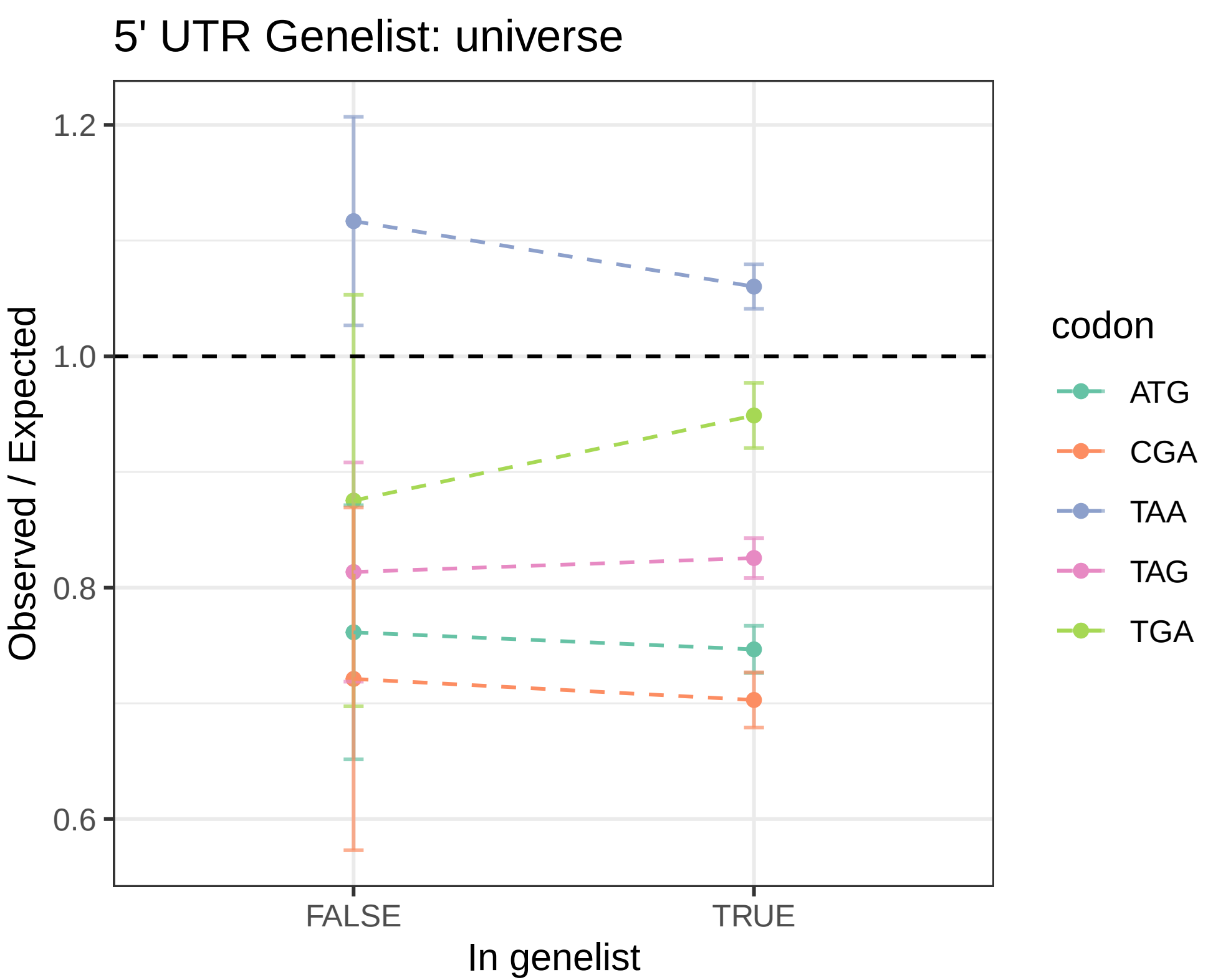

5' UTR Genelist: mgi_essential
Observed / Expected
1.1
1.0
0.9
0.8
0.7
FALSE
TRUE
In genelist
codon
ATG
CGA
TAA
TAG
TGA

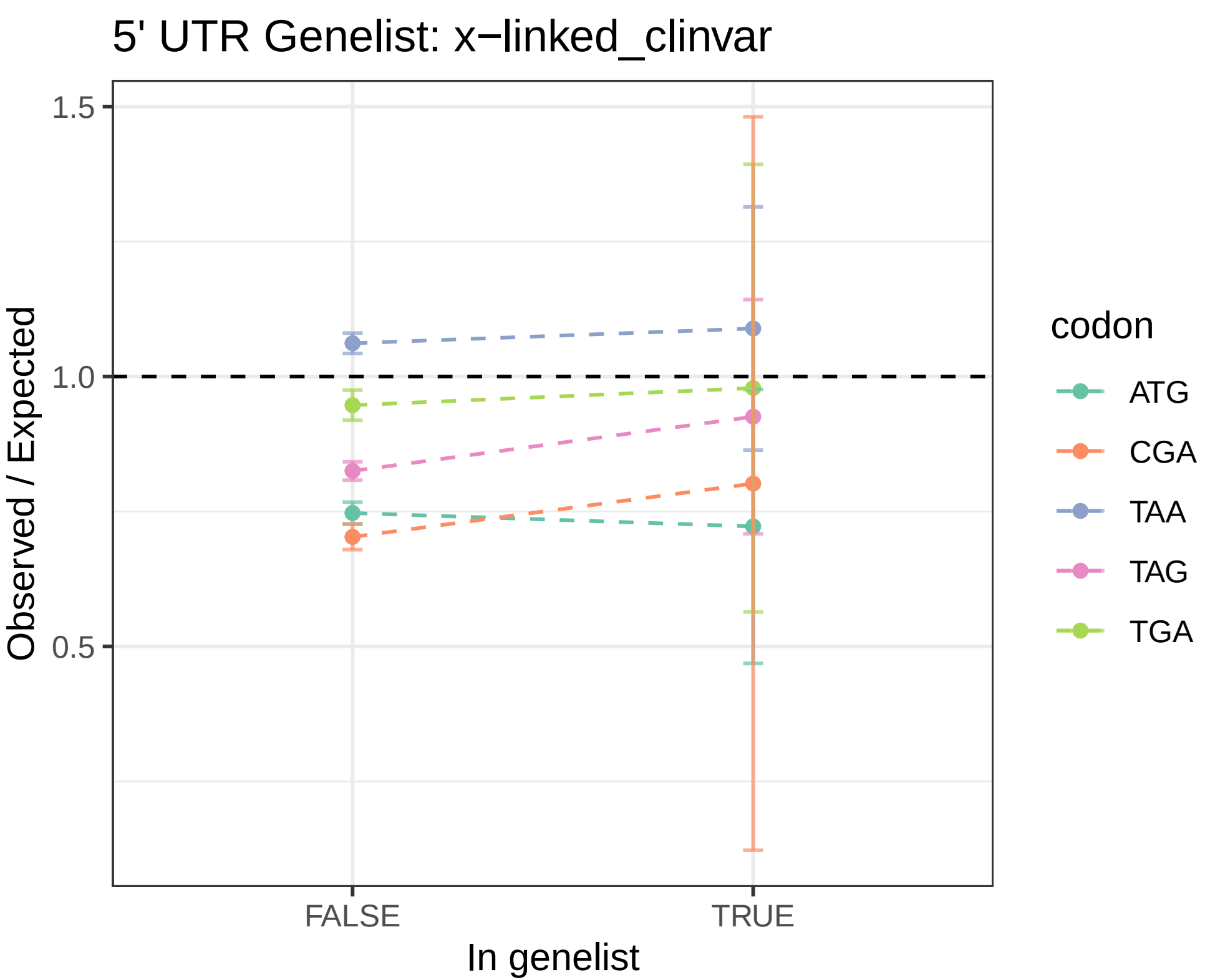

5' UTR Genelist: natural_product_targets
Observed / Expected
1.5
1.0
0.5
0.0
FALSE
TRUE
In genelist
codon
ATG
CGA
TAA
TAG
TGA


5' UTR Genelist: NEGv1_subset_universe
Observed / Expected
1.1
1.0
0.9
0.8
0.7
FALSE
TRUE
In genelist
codon
ATG
CGA
TAA
TAG
TGA


5' UTR Genelist: olfactory_receptors
Observed / Expected
1.2
1.0
0.8
0.6
FALSE
TRUE
In genelist
codon
ATG
CGA
TAA
TAG
TGA


5' UTR Genelist: Transcript_annotation_Haploinsufficient
1.1
1.0
0.9
0.8
0.7
Observed / Expected
FALSE
TRUE
In genelist
codon
ATG
CGA
TAA
TAG
TGA


5' UTR Genelist: universe
1.2
1.0
0.8
0.6
Observed / Expected
FALSE
TRUE
In genelist
codon
ATG
CGA
TAA
TAG
TGA


5' UTR Genelist: x−linked_clinvar
1.5
1.0
0.5
Observed / Expected
FALSE
TRUE
In genelist
codon
ATG
CGA
TAA
TAG
TGA