FIG. 1A

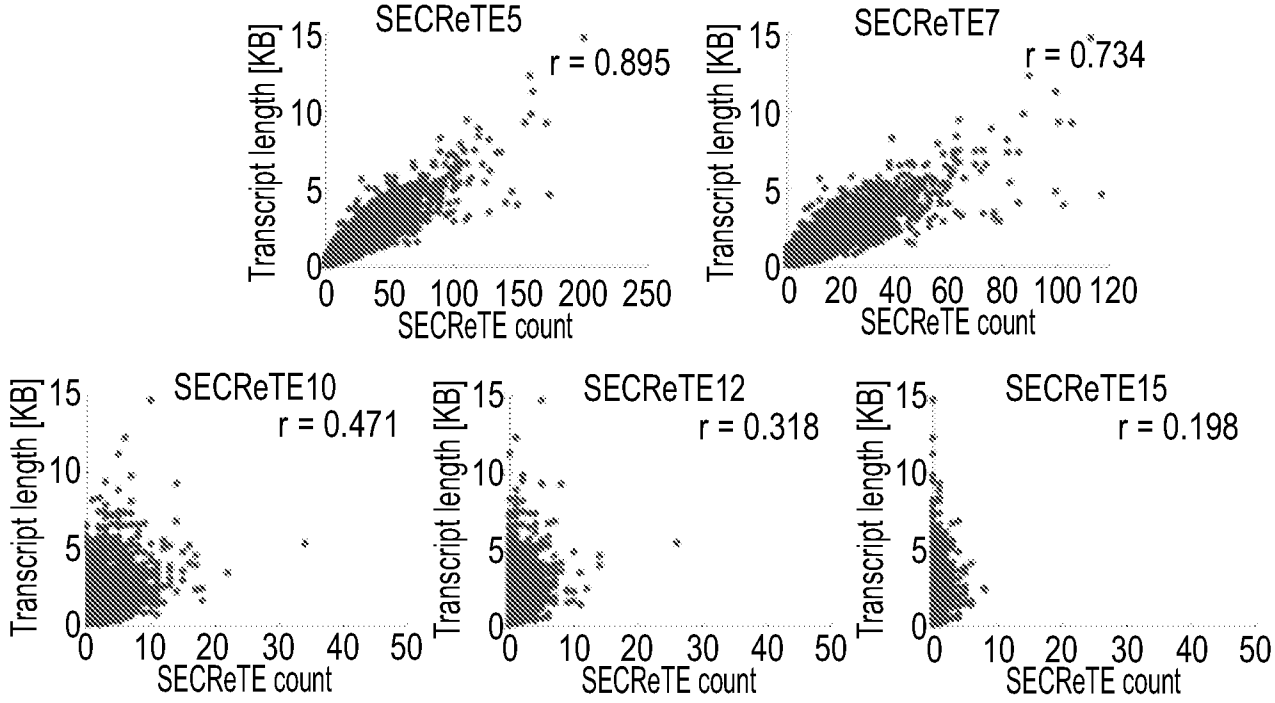


FIG. 1B

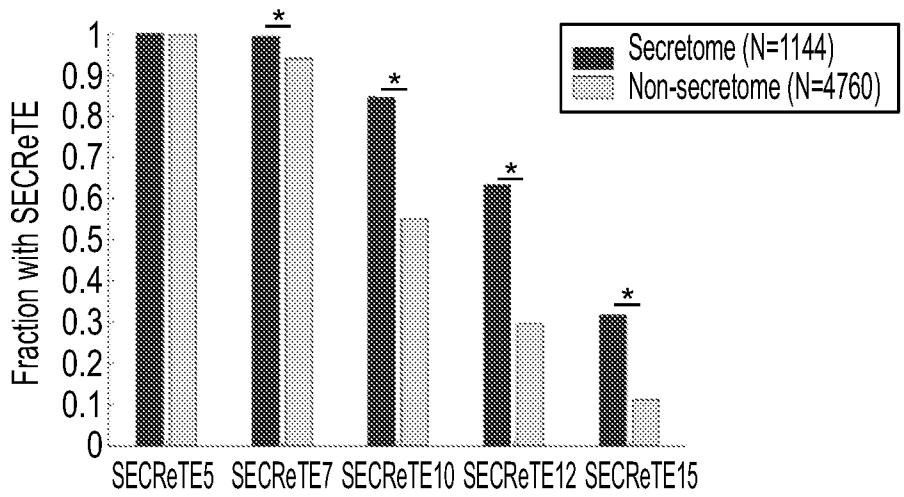


FIG. 1C

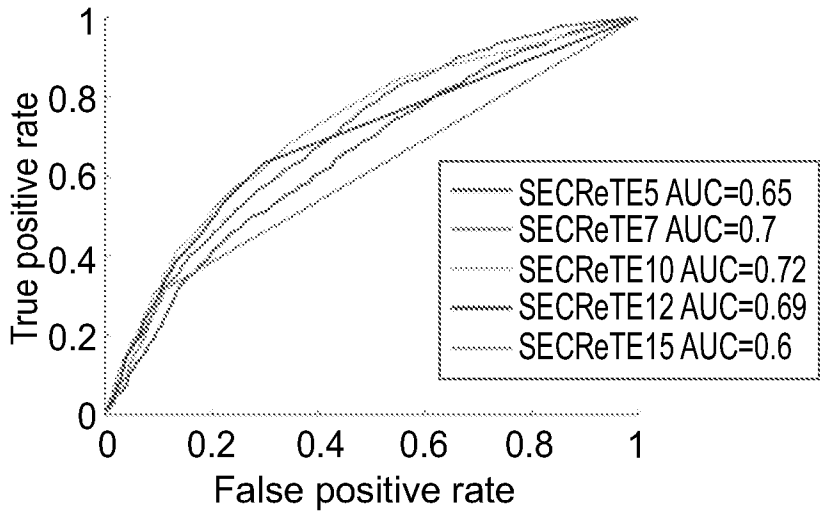


FIG. 2A

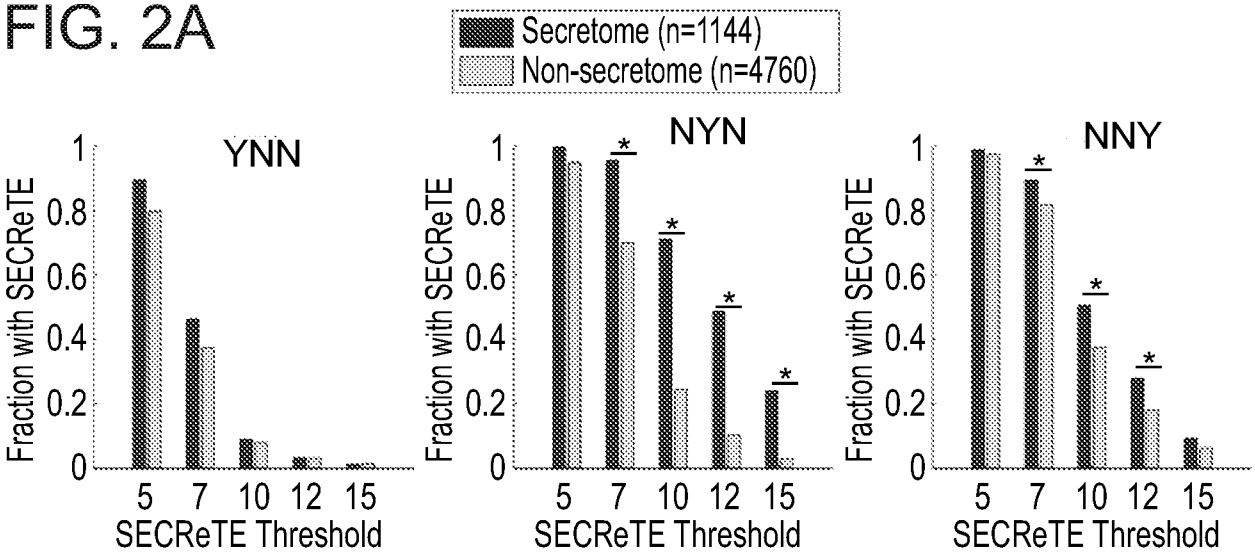


FIG. 2B

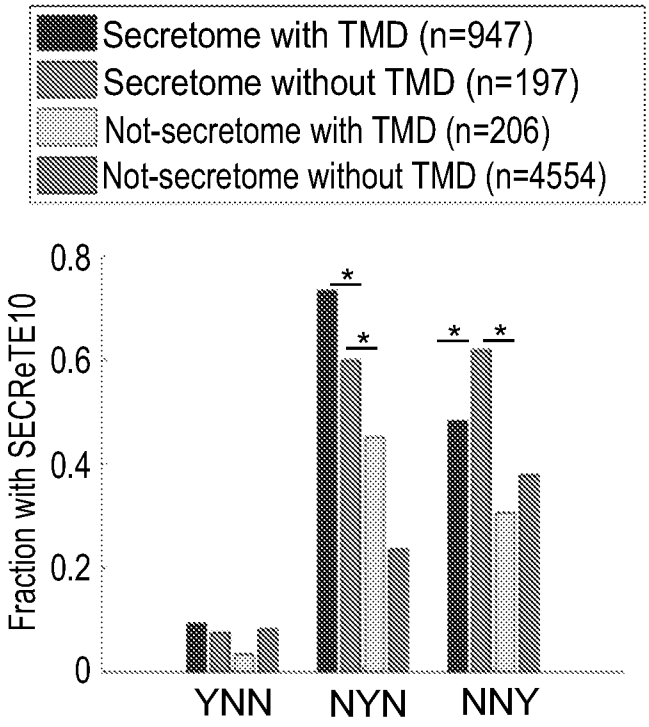


FIG. 2C

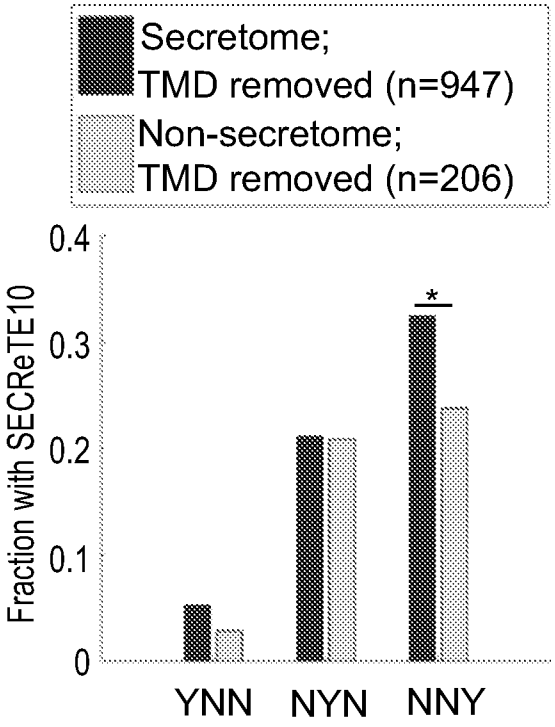


FIG. 3A

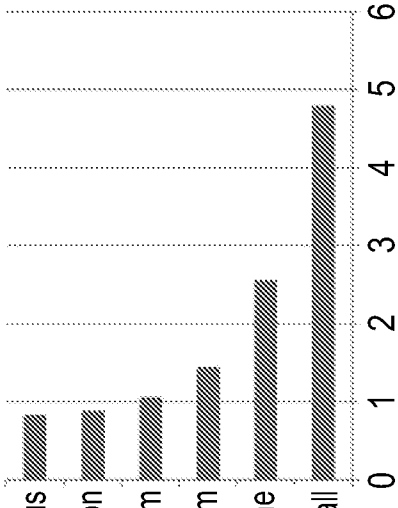


FIG. 3B

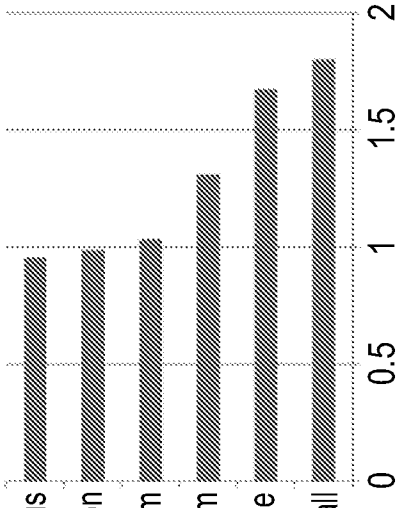


FIG. 3C

FIG. 3D

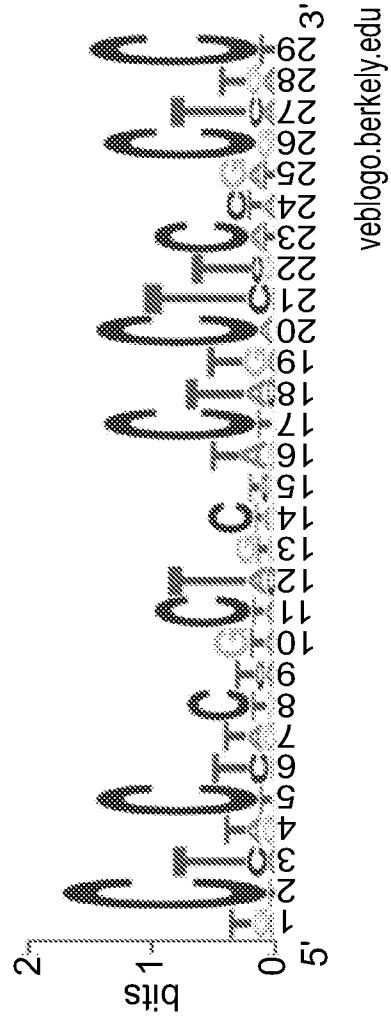


FIG. 4A

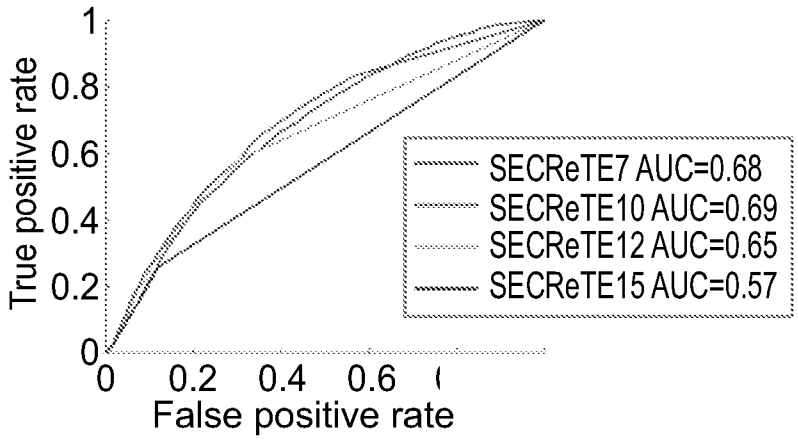


FIG. 4B

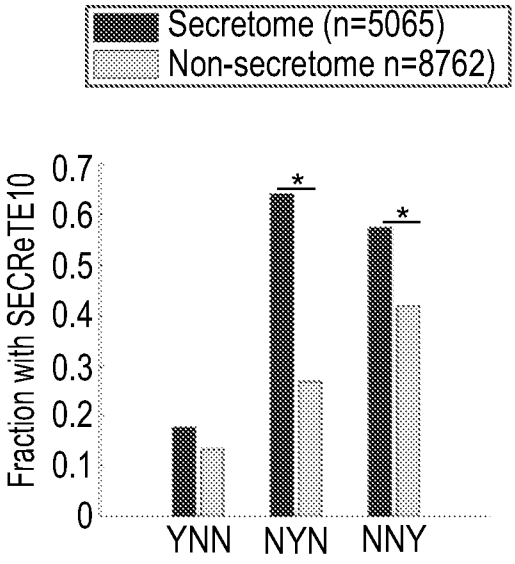


FIG. 4C

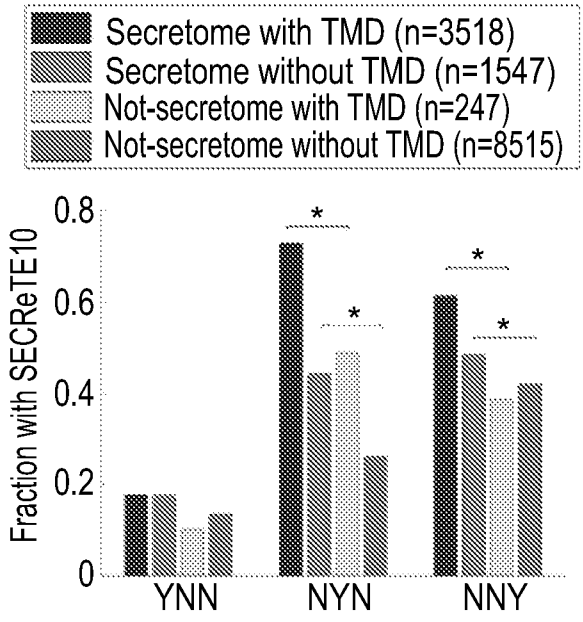


FIG. 4D

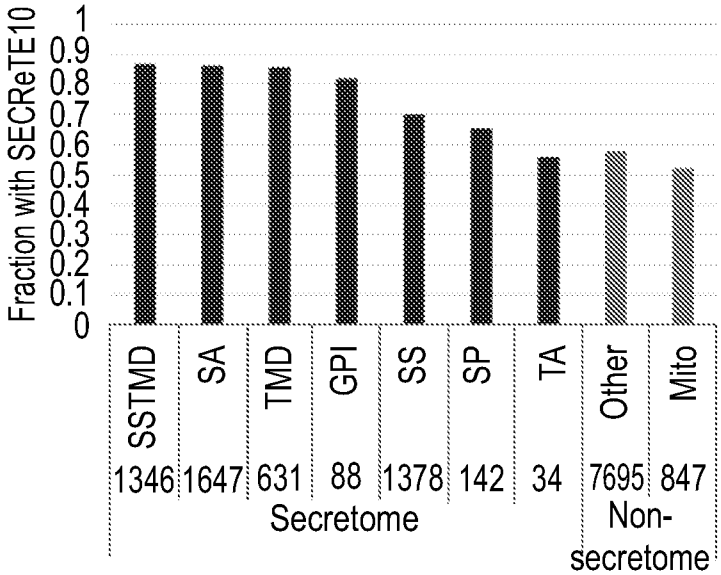


FIG. 4E

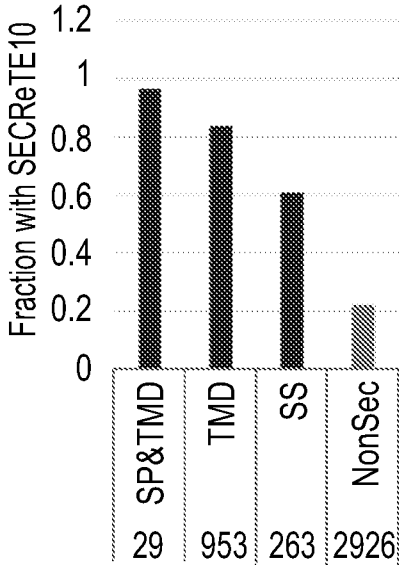


FIG. 5A

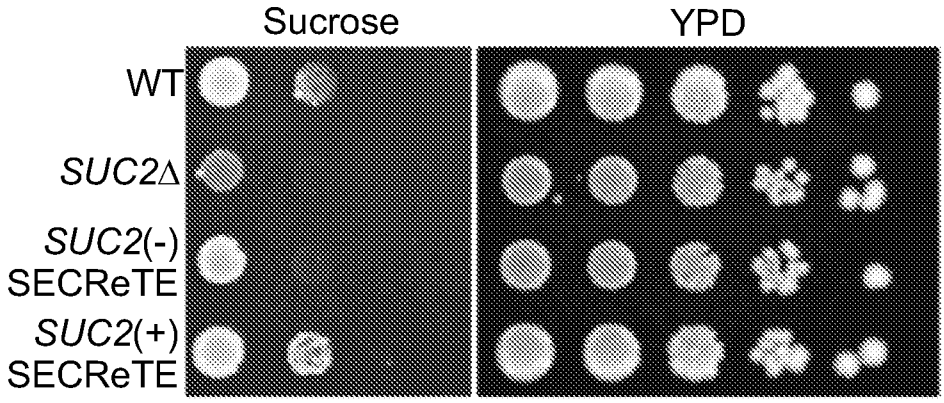


FIG. 5B

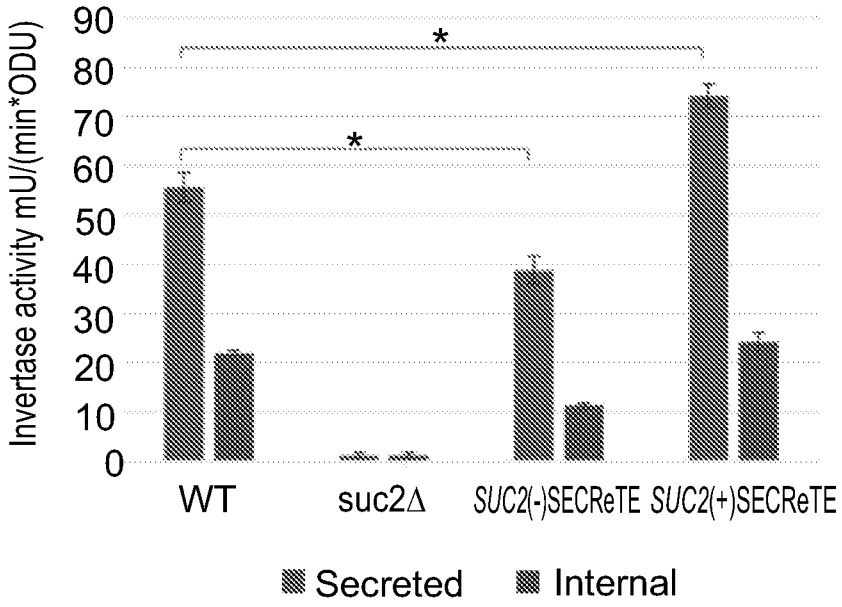
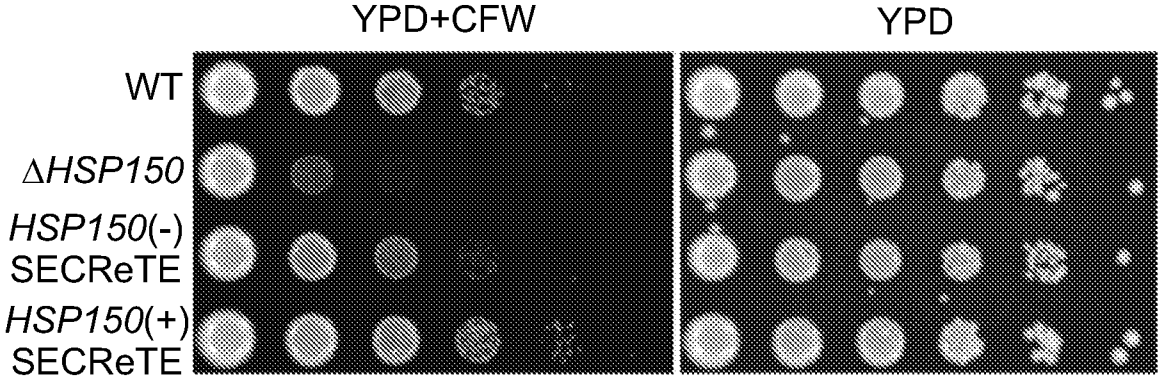


FIG. 5C



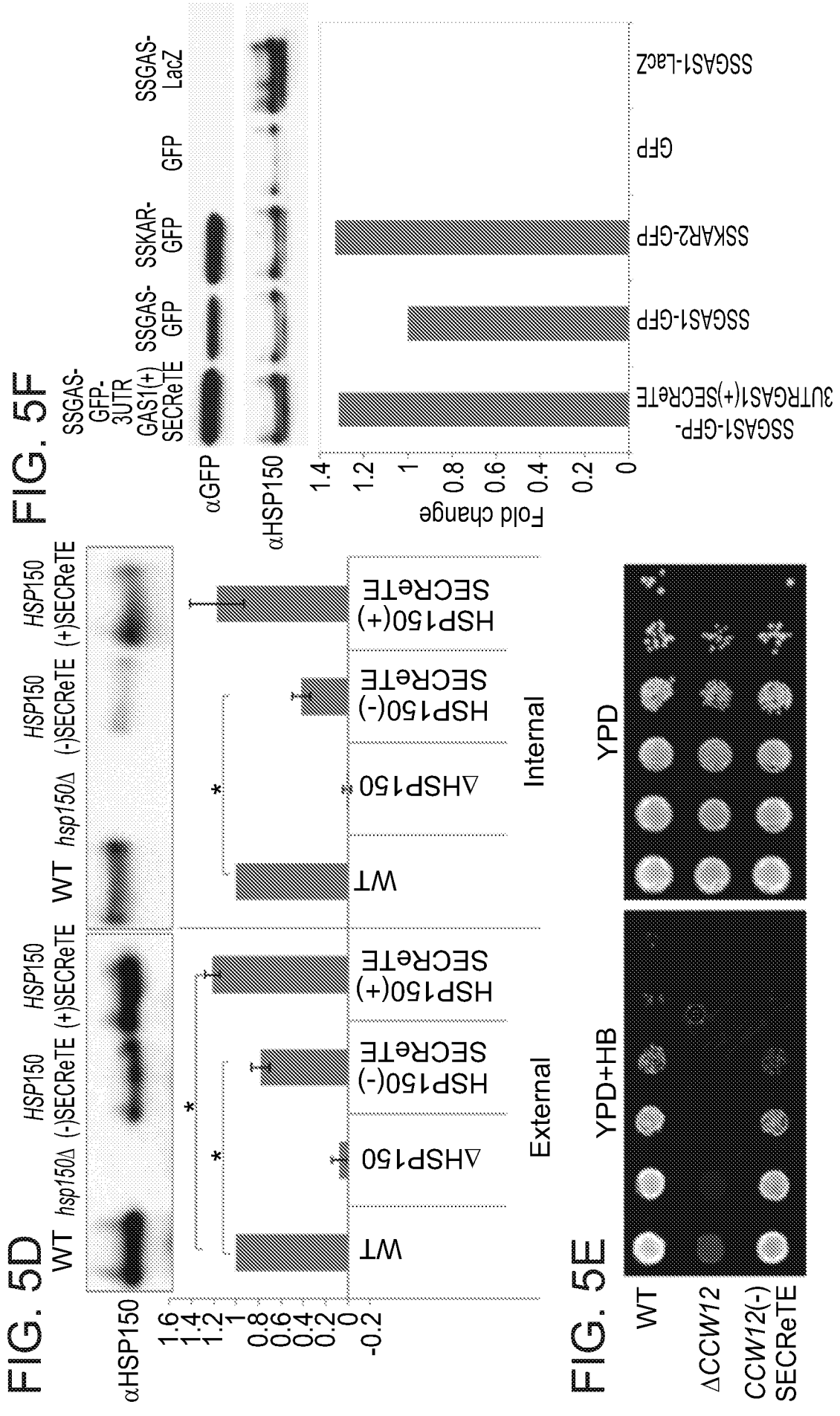

FIG. 5F
SSGAS-GFP-3UTR GAS1(+) SECReTE
SSGAS-GFP
SSKAR-GFP
GFP
SSGAS-LacZ
αGFP
αHSP150
Fold change
SSGAS1-GFP-3UTRGAS1(+)SECReTE
SSGAS1-GFP
SSKAR2-GFP
GFP
SSGAS1-LacZ
FIG. 5D
WT
hsp150Δ
HSP150 (-)SECReTE
HSP150 (+)SECReTE
αHSP150
WT
ΔHSP150
HSP150(-) SECReTE
HSP150(+) SECReTE
External
Internal
FIG. 5E
YPD+HB
YPD
WT
ΔCCW12
CCW12(-) SECReTE

FIG. 6A

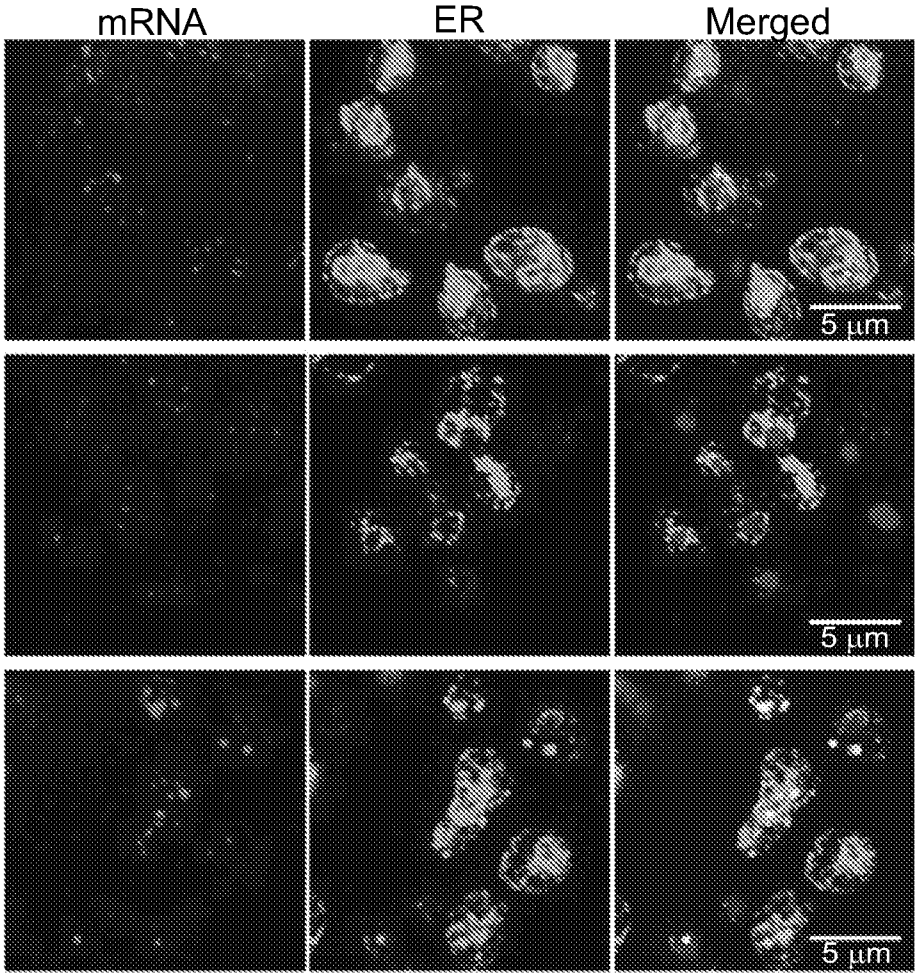
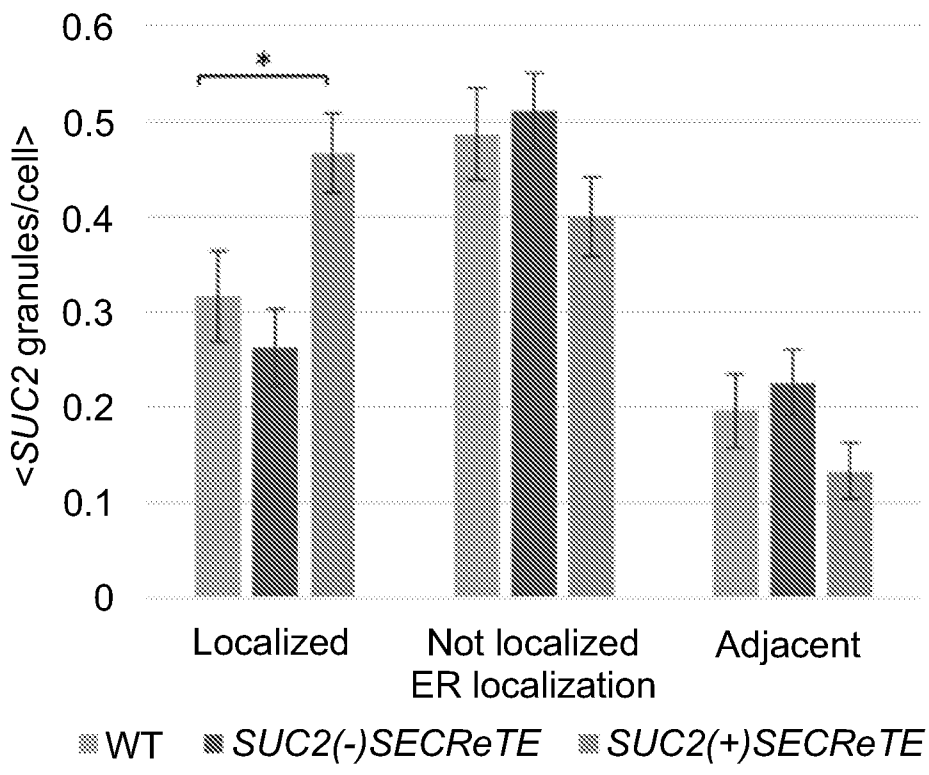

mRNA
ER
Merged
WT
SUC2(-) SECReTE
SUC2(+) SECReTE
5 µm
5 µm
5 µm

FIG. 6B


0.6
0.5
0.4
0.3
0.2
0.1
0
<SUC2 granules/cell>
*
Localized
Not localized ER localization
Adjacent
WT
SUC2(-)SECReTE
SUC2(+)SECReTE

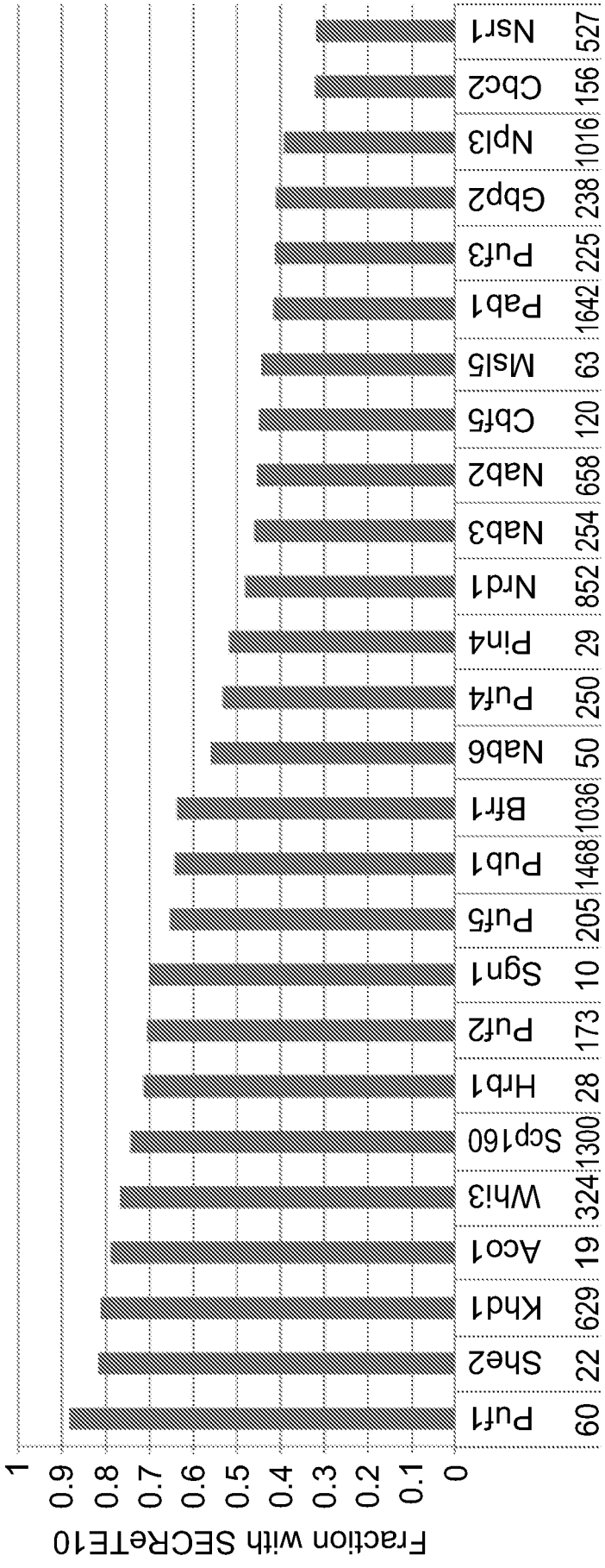
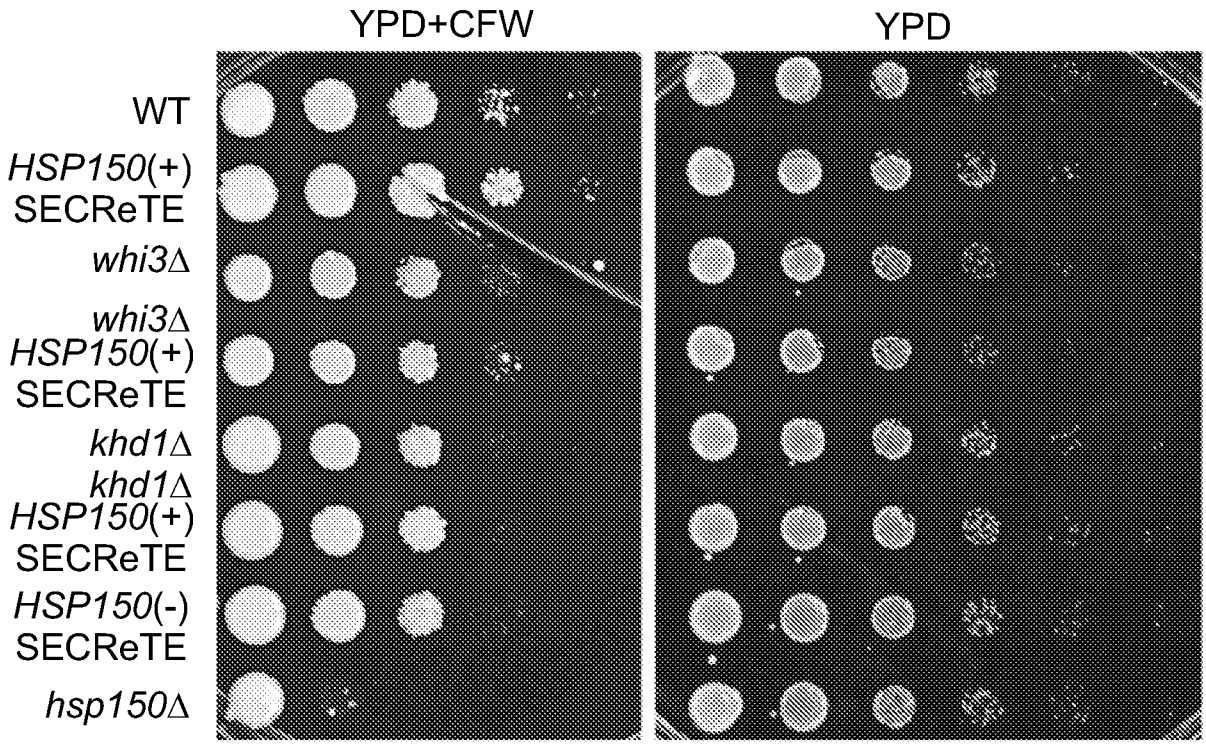

Fraction with SECRET10
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
Puf1 60
She2 22
Khd1 629
Aco1 19
Whi3 324
Scp160 1300
Hrb1 28
Puf2 173
Sgn1 10
Puf5 205
Pub1 1468
Bfr1 1036
Nab6 50
Puf4 250
Pin4 29
Nrd1 852
Nab3 254
Nab2 658
Cbf5 120
Msl5 63
Pab1 1642
Puf3 225
Gbp2 238
Npl3 1016
Cbc2 156
Nsr1 527

FIG. 7A

FIG. 7B


YPD+CFW
YPD
WT
HSP150(+) SECReTE
whi3Δ
whi3Δ HSP150(+) SECReTE
khd1Δ
khd1Δ HSP150(+) SECReTE
HSP150(-) SECReTE
hsp150Δ

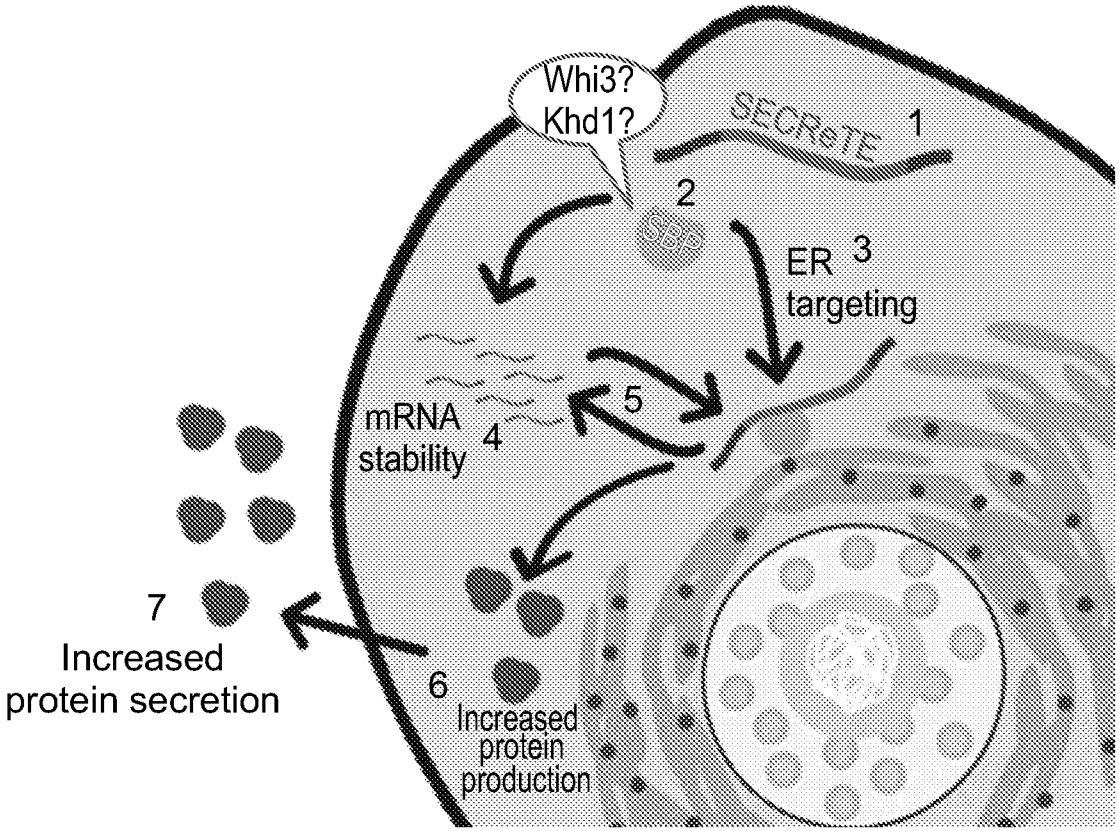

Whi3?
Khd1?
SECRETE
1
2
SSD
ER
3
targeting
mRNA
stability
4
5
7
Increased
protein secretion
6
Increased
protein
production

FIG. 8

FIG. 9A

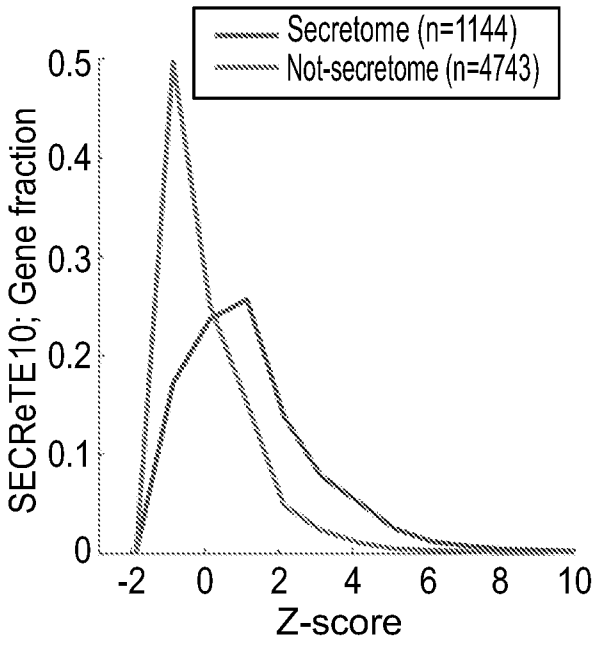


FIG. 9B

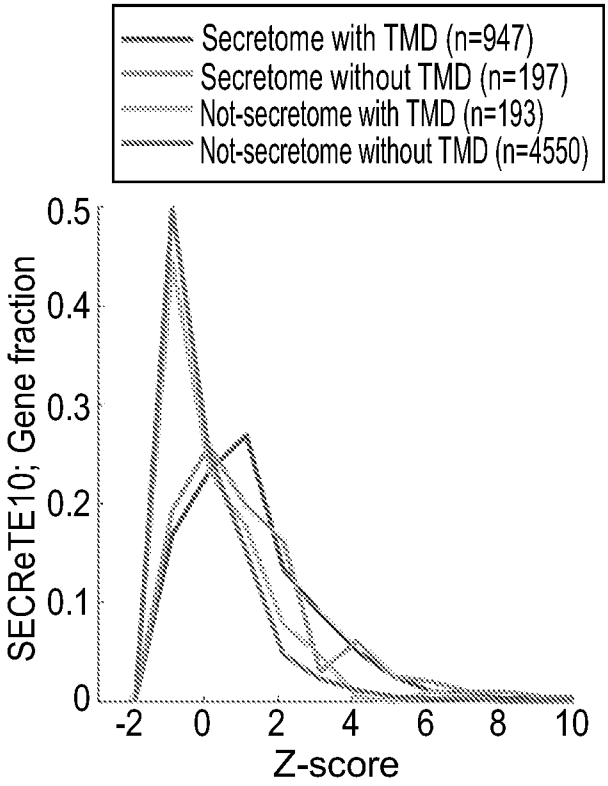


FIG. 9C

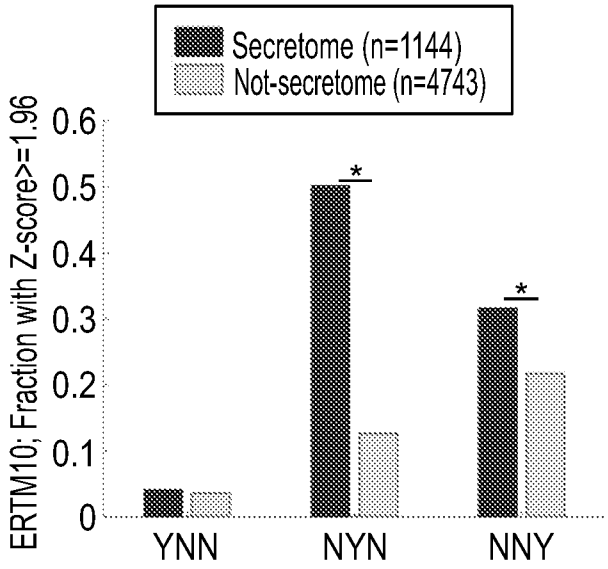


FIG. 9D

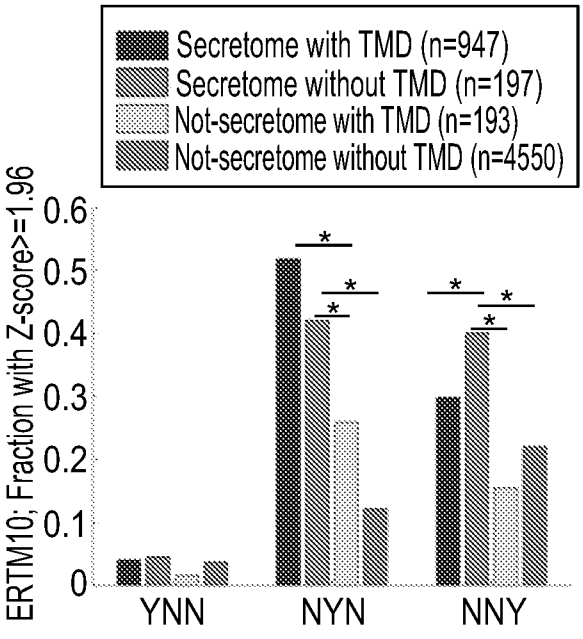


FIG. 10A

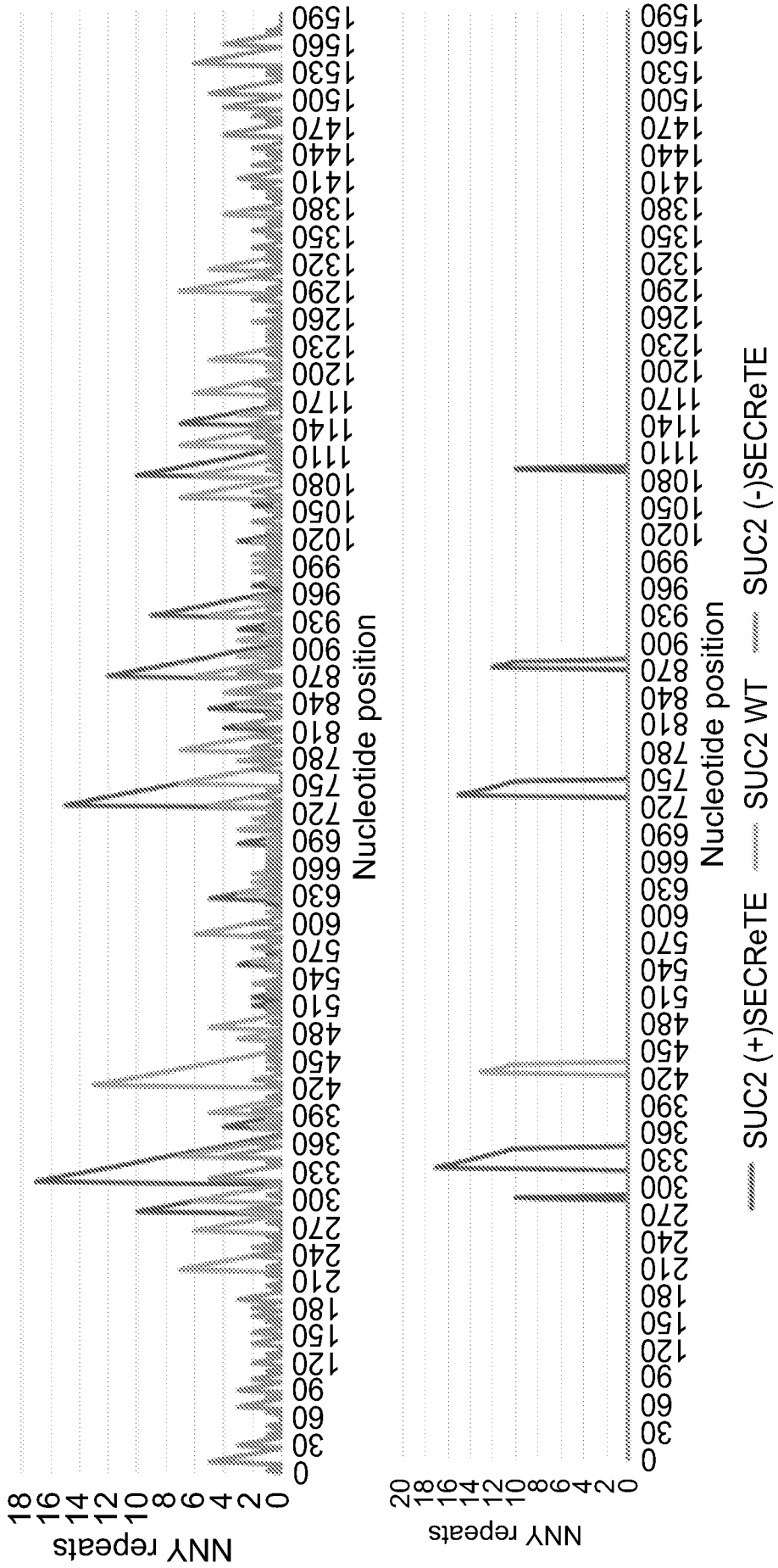

NNY repeats
Nucleotide position
SUC2 (+)SECReTE
SUC2 WT
SUC2 (-)SECReTE

FIG. 10B

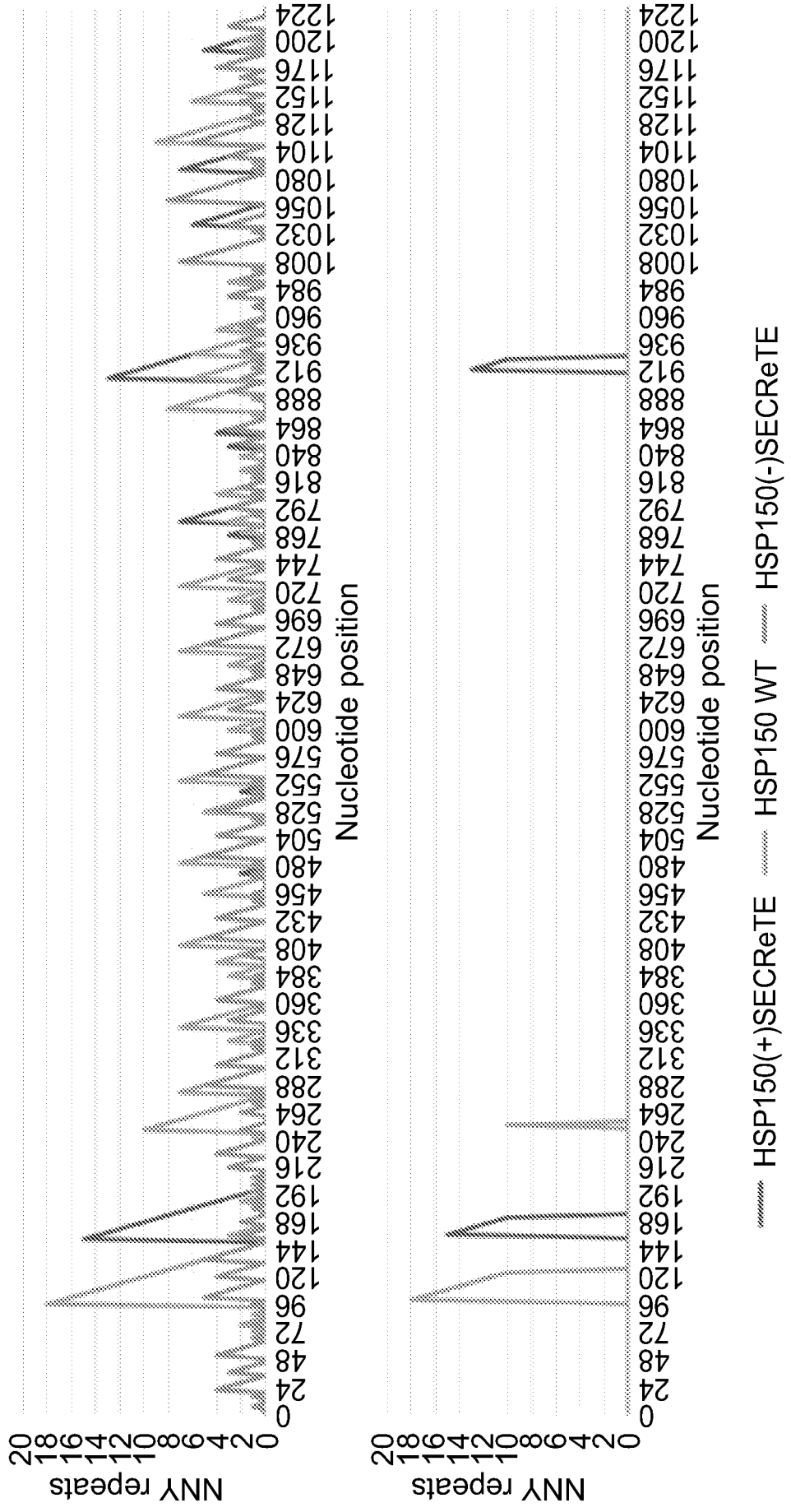

NNY repeats
Nucleotide position
HSP150(+)SECReTE
HSP150 WT
HSP150(-)SECReTE

FIG. 10C

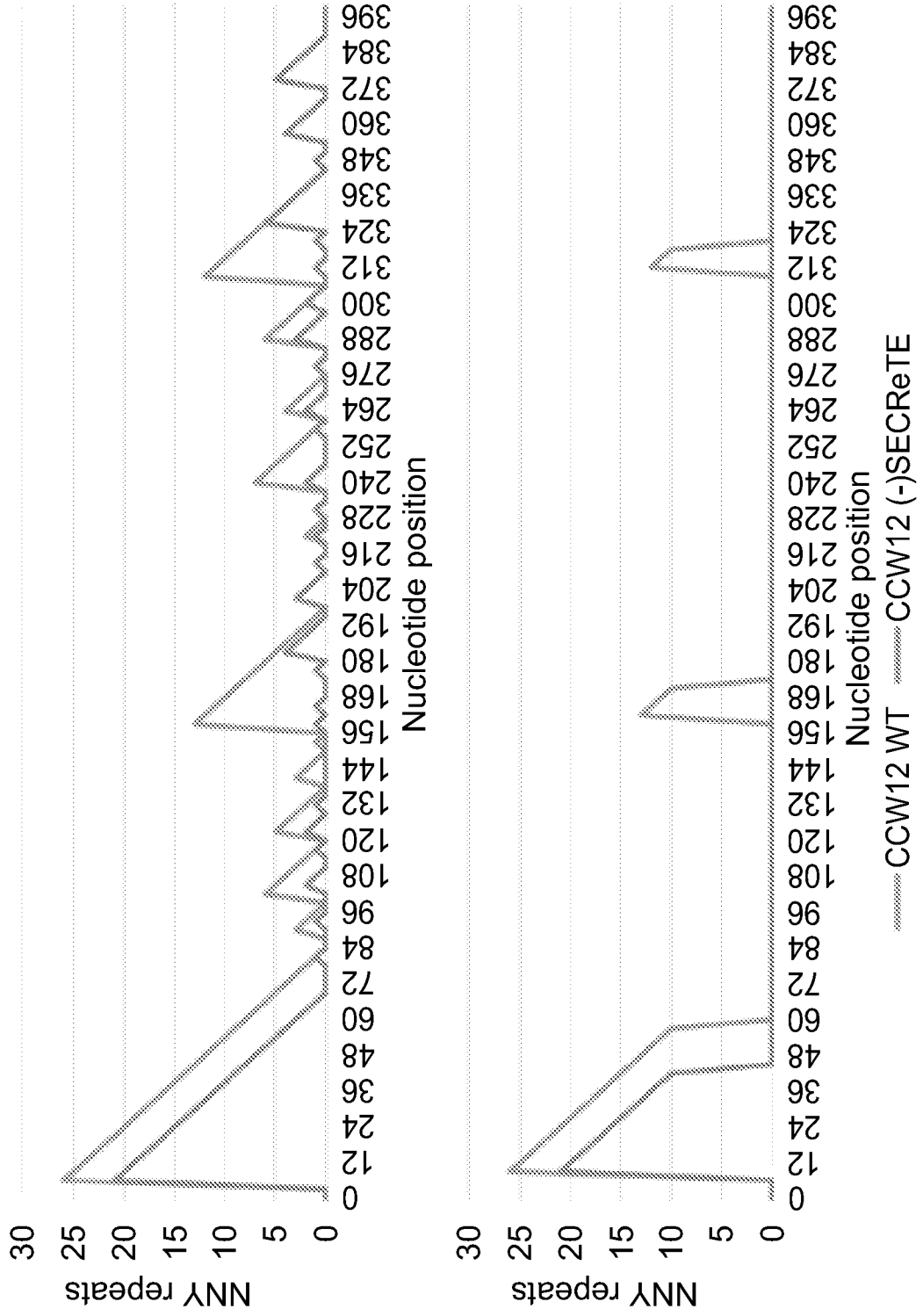

NNY repeats
30
25
20
15
10
5
0
0
12
24
36
48
60
72
84
96
108
120
132
144
156
168
180
192
204
216
228
240
252
264
276
288
300
312
324
336
348
360
372
384
396
Nucleotide position
CCW12 WT
CCW12 (-)SECReTE

FIG. 11A

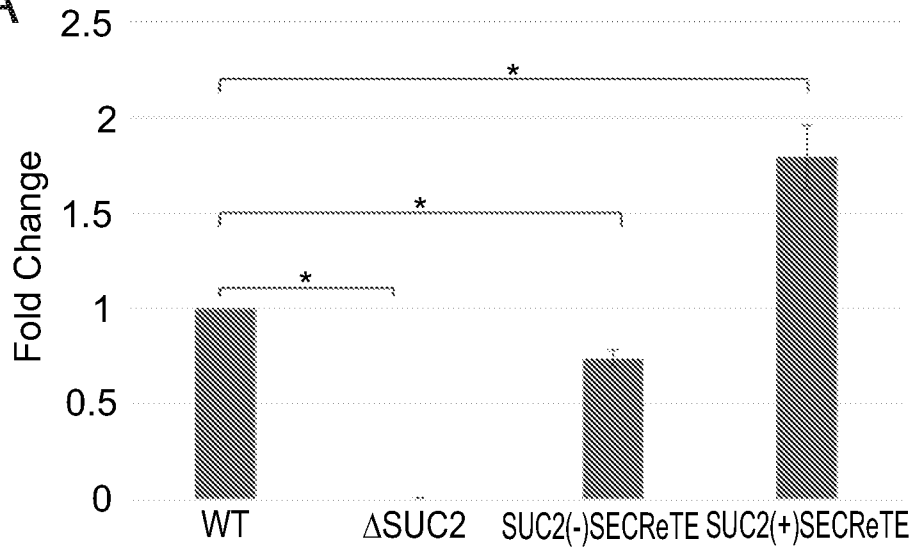


FIG. 11B

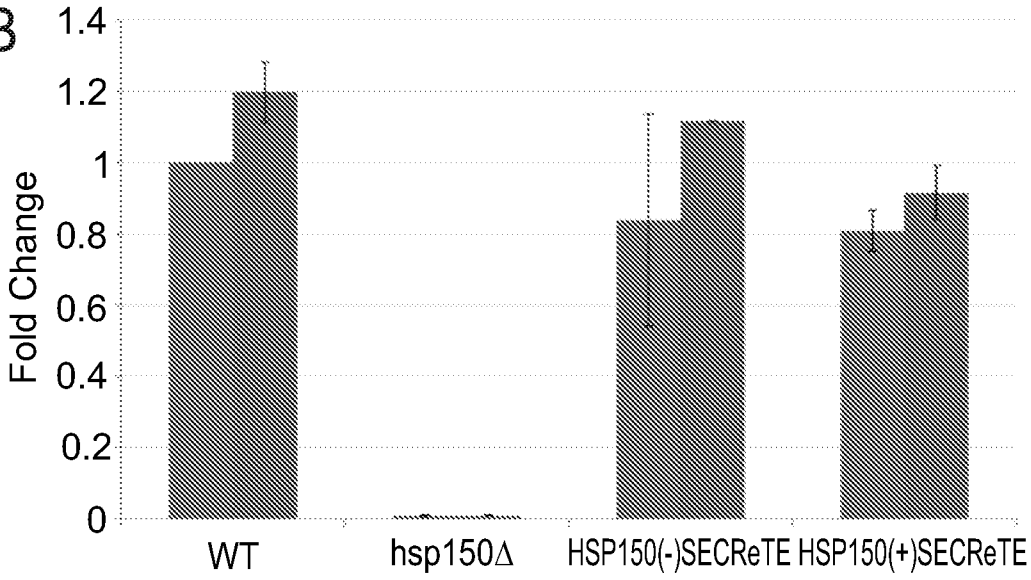


FIG. 11C

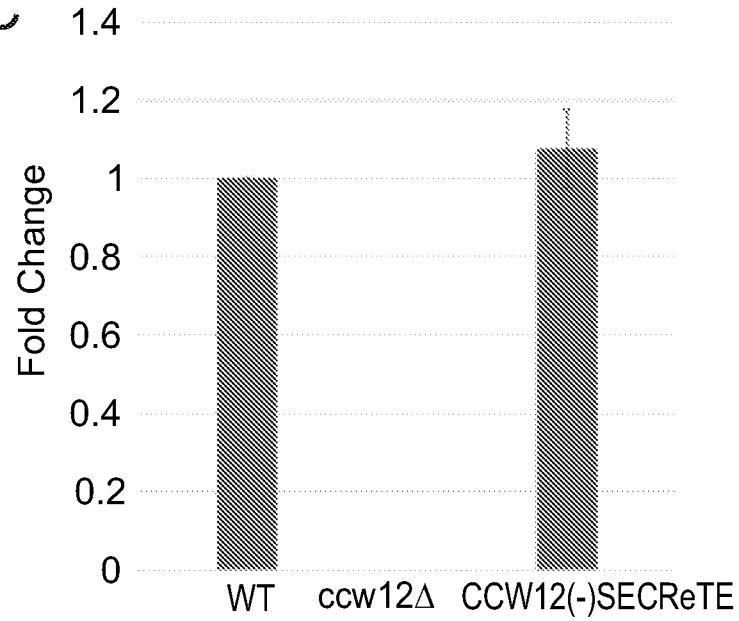


FIG. 12A

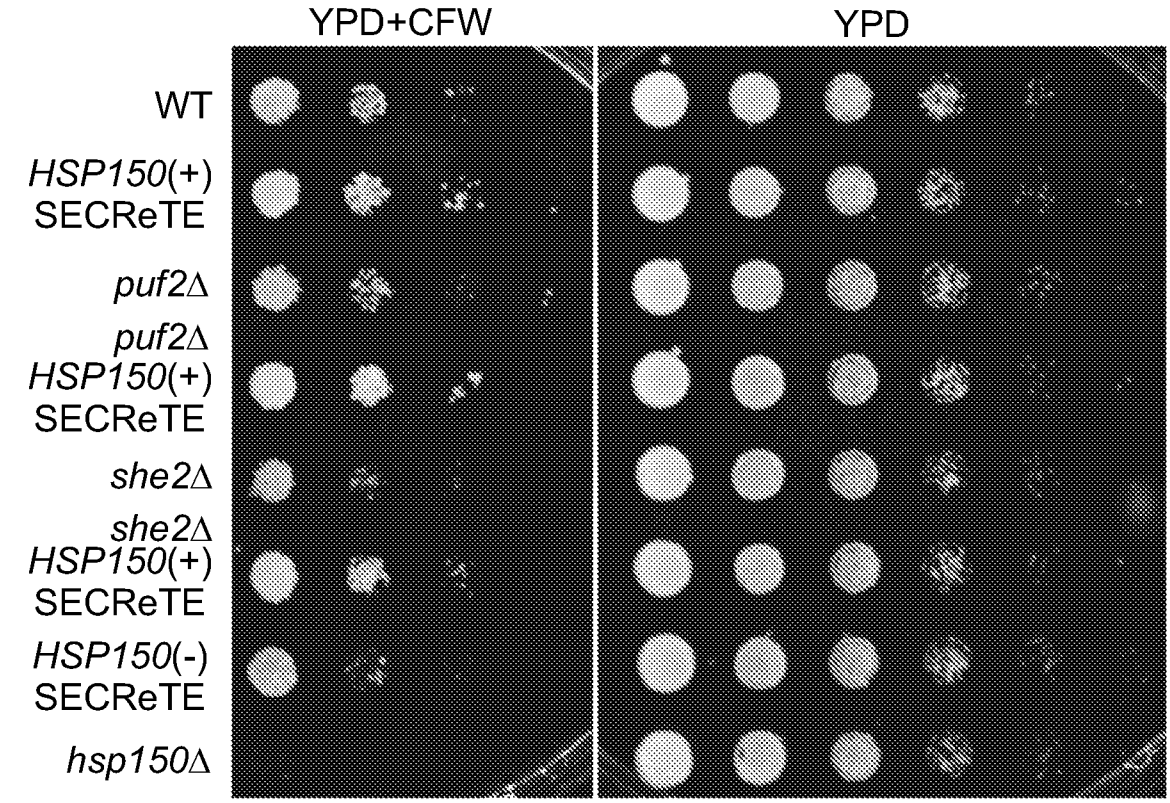
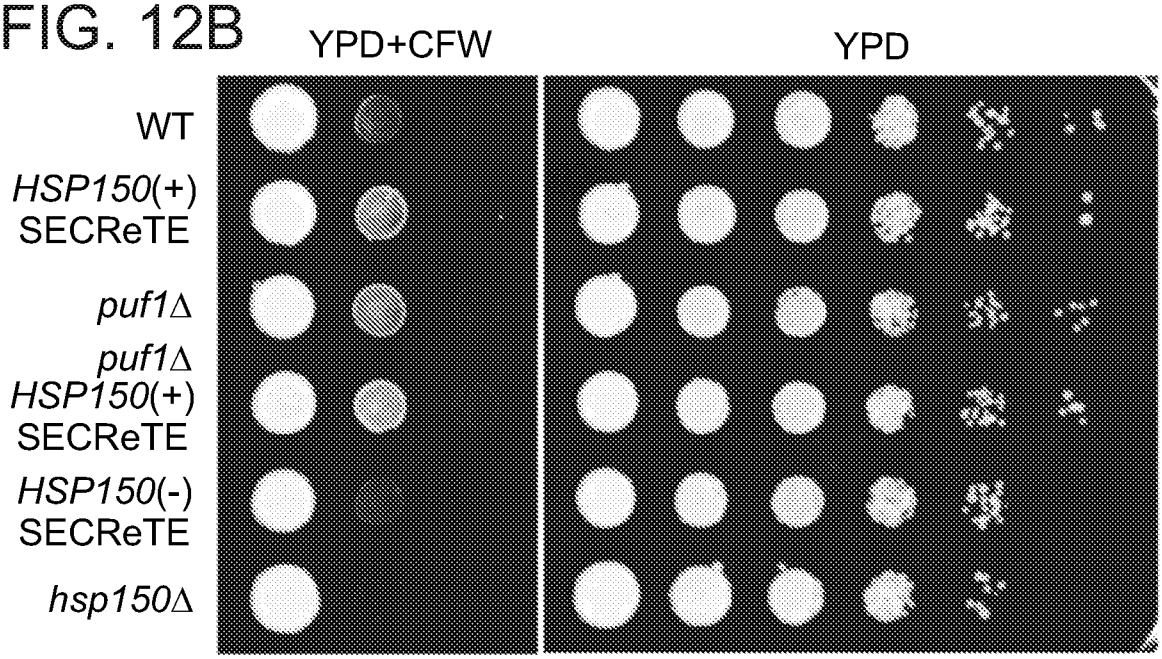


FIG. 12B



ATGTTGTTTAAAATCCCTTTCAAAGTTAGCAACCGCTGCTGCTTTTTTTGCTGGCGTCGCAACTGCGGGACATGTCTT
TAATTAACAGTAAAGGAGAAGAACTTTTCACTGGAGTTGTCCCAATTCTTGTTGAATTAGATGGTGATGTTAATG
GGCACAAATTTTCTGTCAGTGGAGAGGGTGAAGGTGATGCAACATACGGAAAACTTACCCTTAAATTTATTTGCA
CTACTGGAAAACTACCTGTTCCATGGCCAACACTTGTCACTACTTTCACTTATGGTGTTCAATGCTTTTCAAGATAC
CCAGATCATATGAAACGGCATGACTTTTTCAAGAGTGCCATGCCCGAAGGTTATGTACAGGAAAGAACTATATTT
TTCAAAGATGACGGGAACTACAAGACACGTGCTGAAGTCAAGTTTGAAGGTGATACCCTTGTTAATAGAATCGA
GTTAAAAGGTATTGATTTTAAAGAAGATGGAAACATTCTTGGACACAAATTGGAATACAACTATAACTCACACAA
TGTATACATCATGGCAGACAAACAAAAGAATGGAATCAAAGTTAACTTCAAAATTAGACACAACATTGAAGATG
GAAGCGTTCAACTAGCAGACCATTATCAACAAAATACTCCAATTGGCGATGGCCCTGTCCTTTTACCAGACAACC
ATTACCTGTCCACACAATCTGCCCTTTCGAAAGATCCCAACGAAAAGAGAGACCACATGGTCCTTCTTGAGTTTGT
AACAGCTGCTGGGATTACACATGGCATGGATGAACTATACAAATAGTTTCcttcCTcTcTtTtcTtTTTtcCtTTTCCt
ttCtTtctTttcTttcTttCtCCCtTCttttTTTTTTTTCttCtTTCtTtCtTtTttttttttcTtCtTTCtttTtTTTCTttctT
ttrCctTttTccTccCctTTttttTTTTTTCttTttCttTttCttTcT SEQ ID NO: 4

Red = GAS1 (signal sequence)

Green = GFP

Blue = GAS1 3'UTR (lower case = substitutions)

FIG. 13