Drawings

Fig. 1A

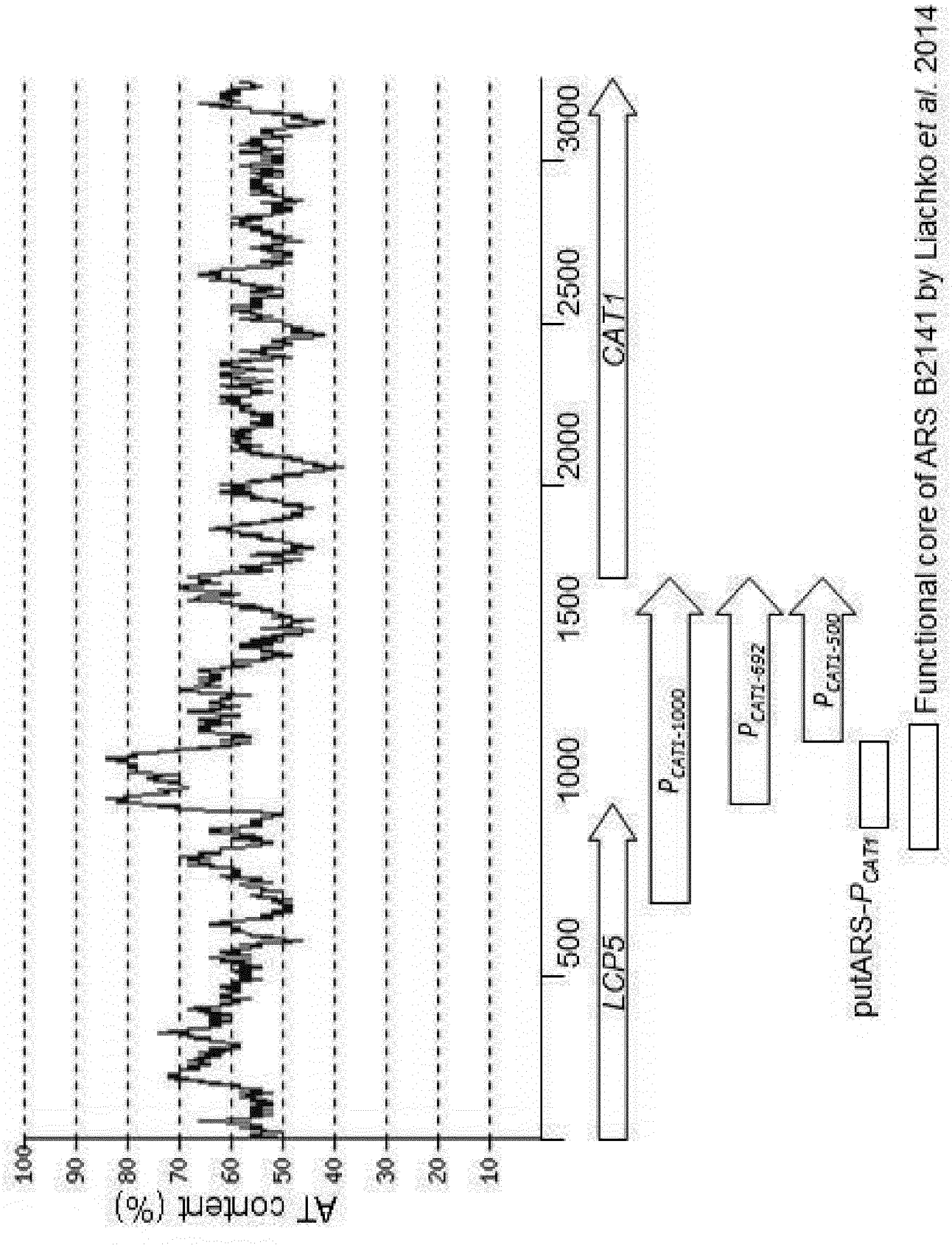


Fig. 1B

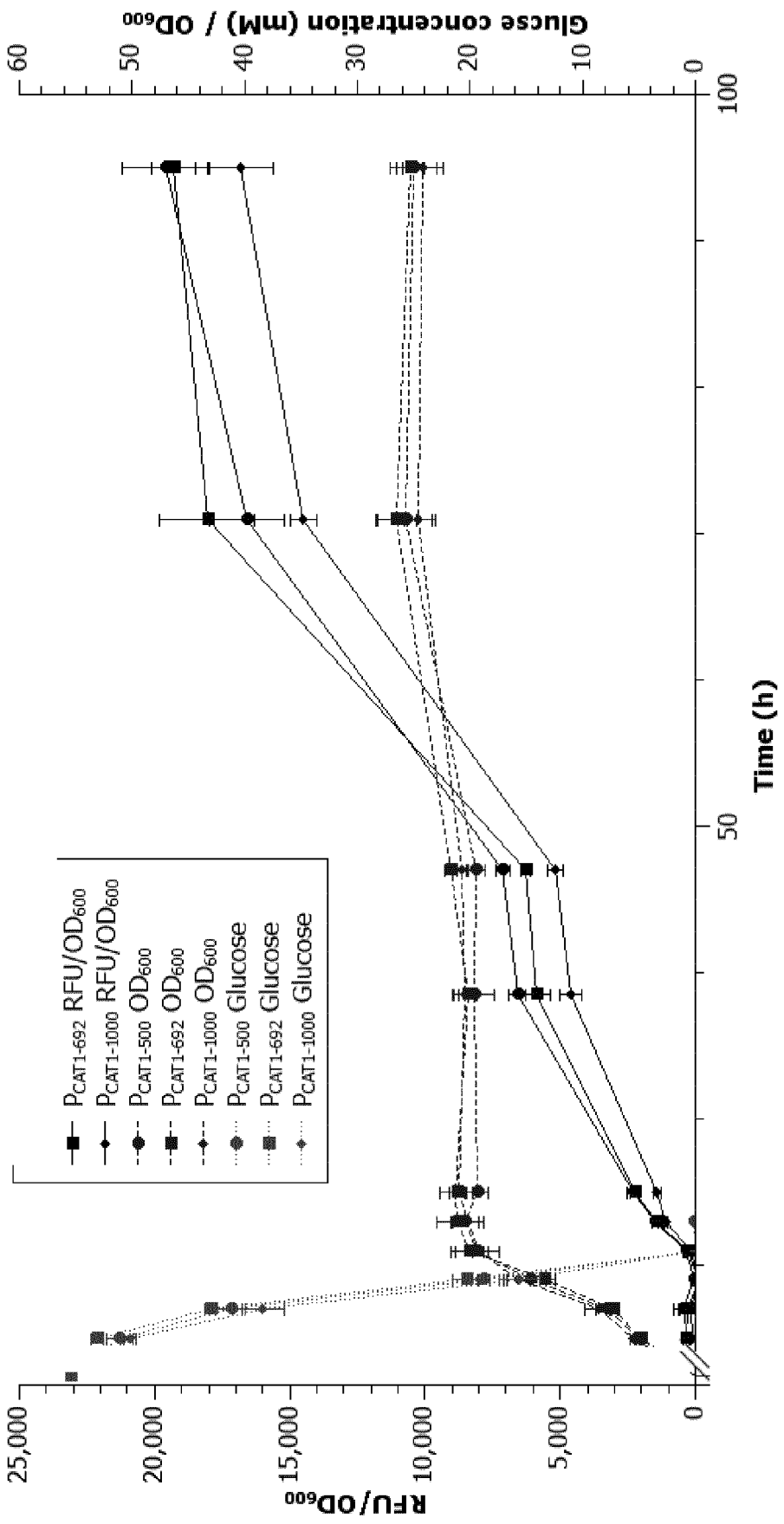

Glucose concentration (mM) / OD600
RFU/OD600
Time (h)
PCAT1-692 RFU/OD600
PCAT1-1000 RFU/OD600
PCAT1-500 OD600
PCAT1-692 OD600
PCAT1-1000 OD600
PCAT1-500 Glucose
PCAT1-692 Glucose
PCAT1-1000 Glucose

Fig. 2A

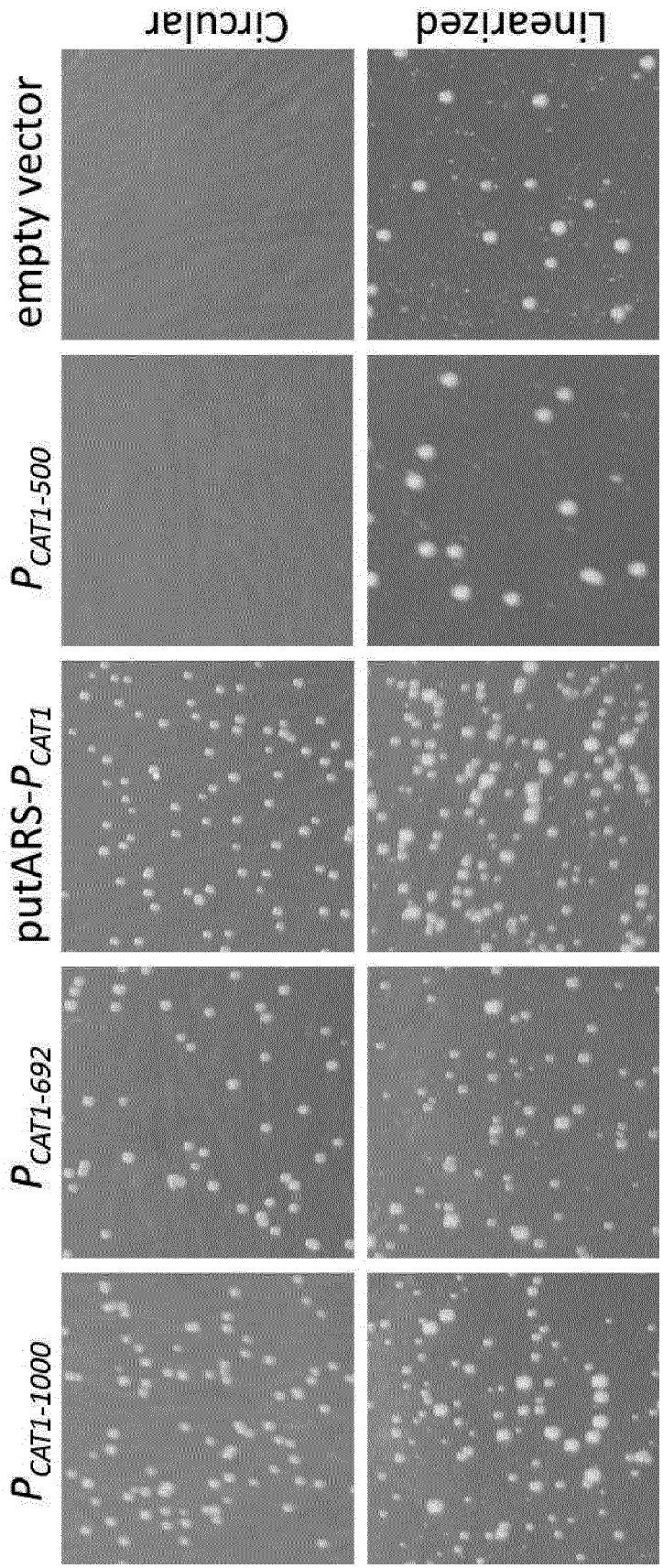

Circular
Linearized
empty vector
$P_{CAT1-500}$
putARS-P_{CAT1}
$P_{CAT1-692}$
$P_{CAT1-1000}$

Fig. 2B

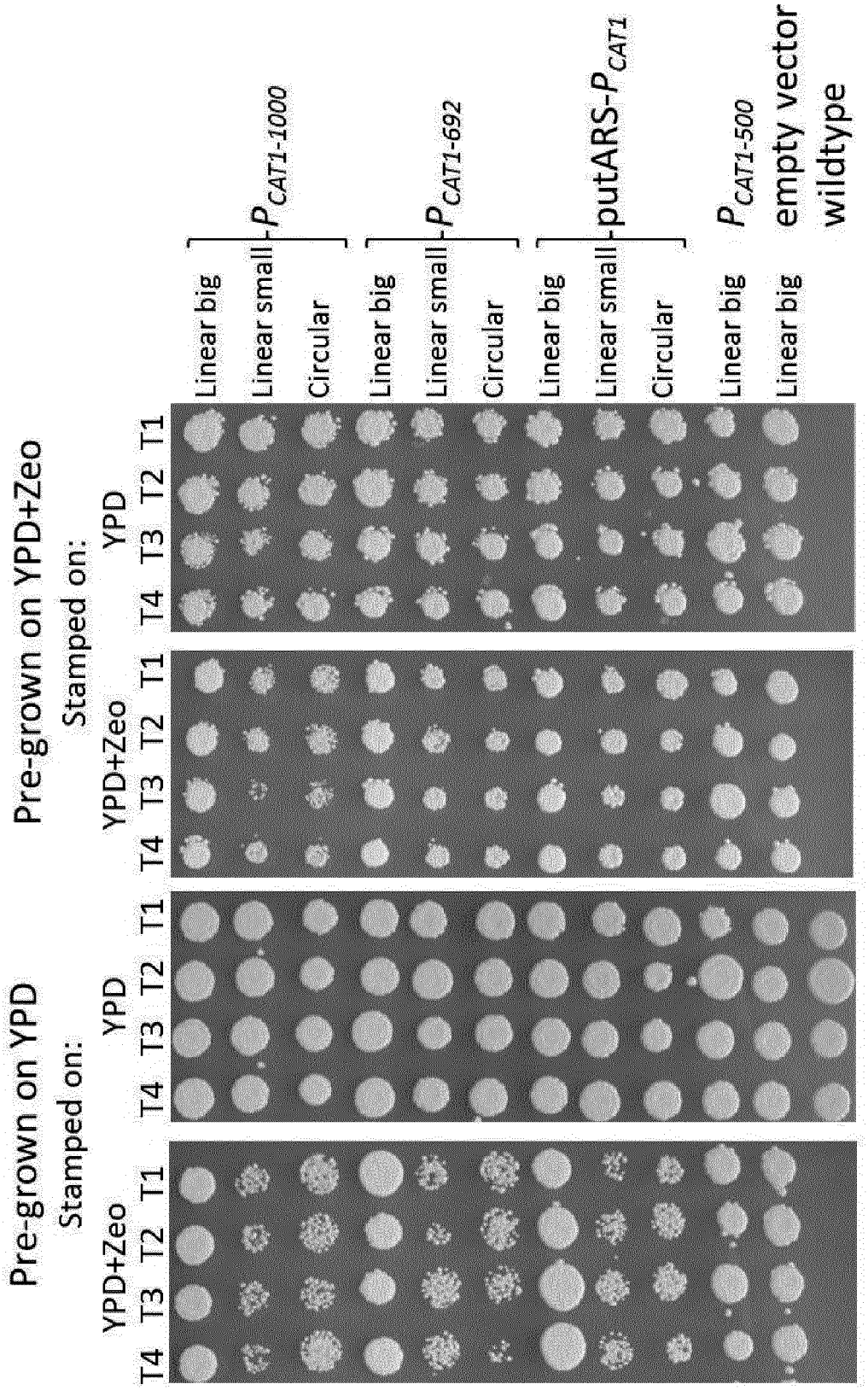

Pre-grown on YPD
Stamped on:
YPD+Zeo
T4 T3 T2 T1
YPD
T4 T3 T2 T1
Pre-grown on YPD+Zeo
Stamped on:
YPD+Zeo
T4 T3 T2 T1
YPD
T4 T3 T2 T1
Linear big
Linear small
Circular
Linear big
Linear small
Circular
Linear big
Linear small
Circular
Linear big
Linear big
$P_{CAT1-1000}$
$P_{CAT1-692}$
putARS-P_{CAT1}
$P_{CAT1-500}$
empty vector
wildtype

Fig. 2C

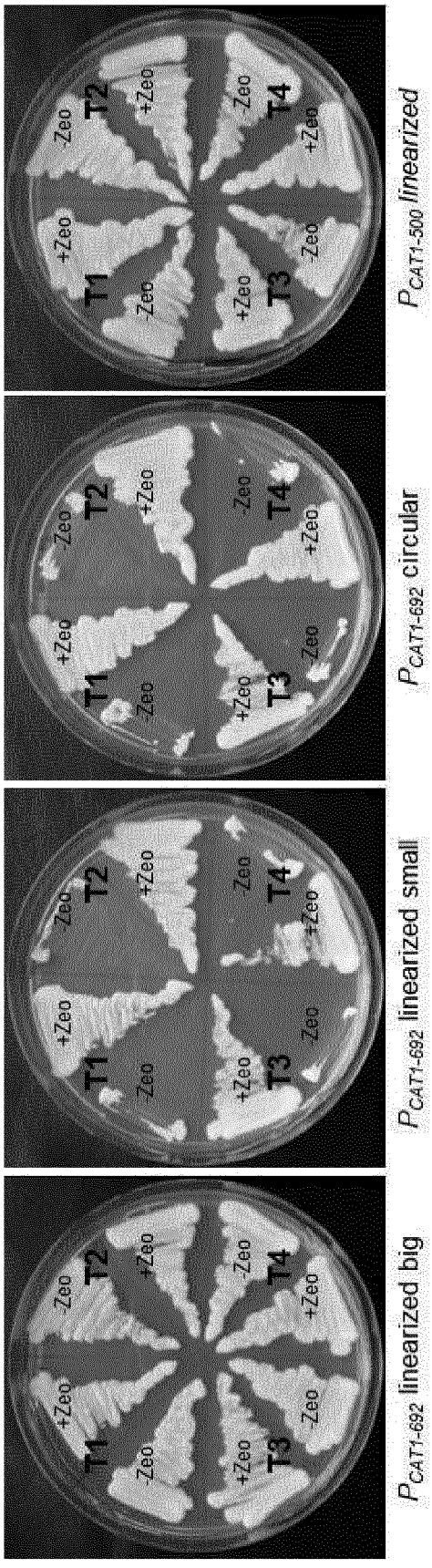

T1
T2
T3
T4
+Zeo
-Zeo
$P_{CAT1-692}$ linearized big
$P_{CAT1-692}$ linearized small
$P_{CAT1-692}$ circular
$P_{CAT1-500}$ linearized

Fig. 3A

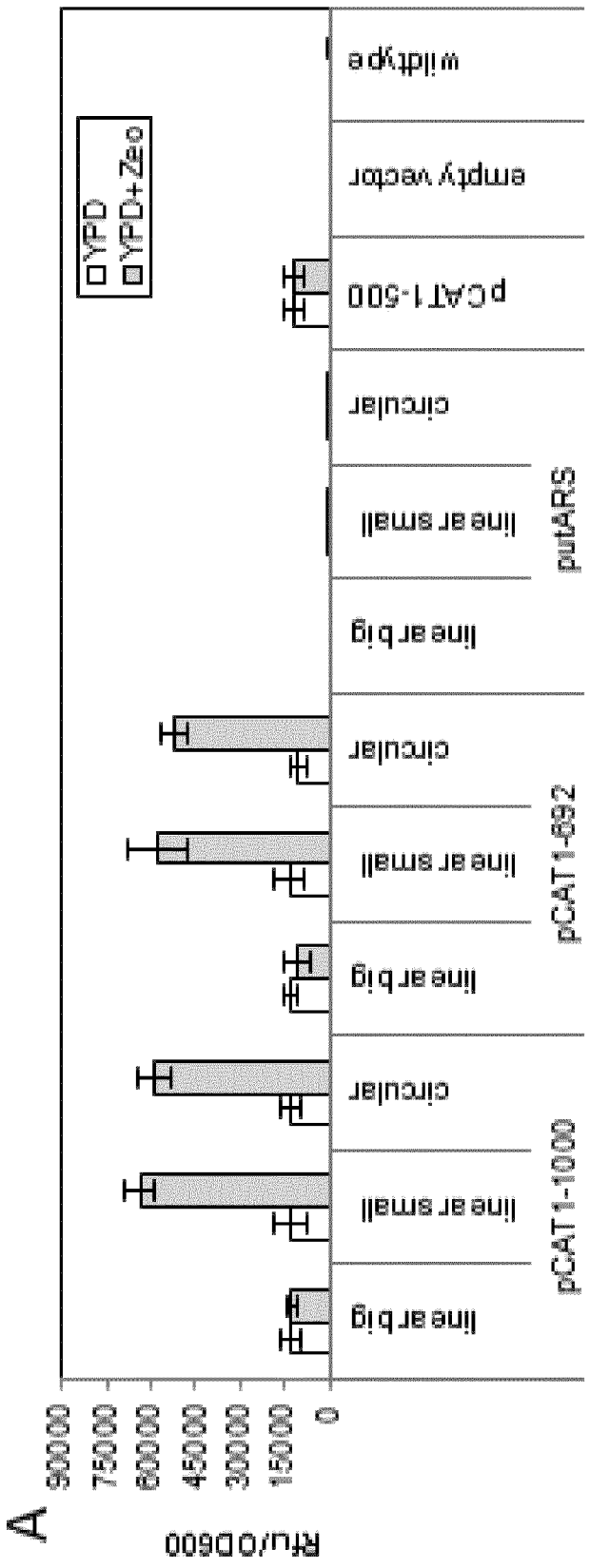

A
RFU/OD600
900000
750000
600000
450000
300000
150000
0
YPD
YPD+Zeo
linear big
linear small
circular
linear big
linear small
circular
linear big
linear small
circular
linear big
linear small
circular
pCAT1-1000
pCAT1-692
putARS
pCAT1-500
empty vector
wildtype

Fig. 3B

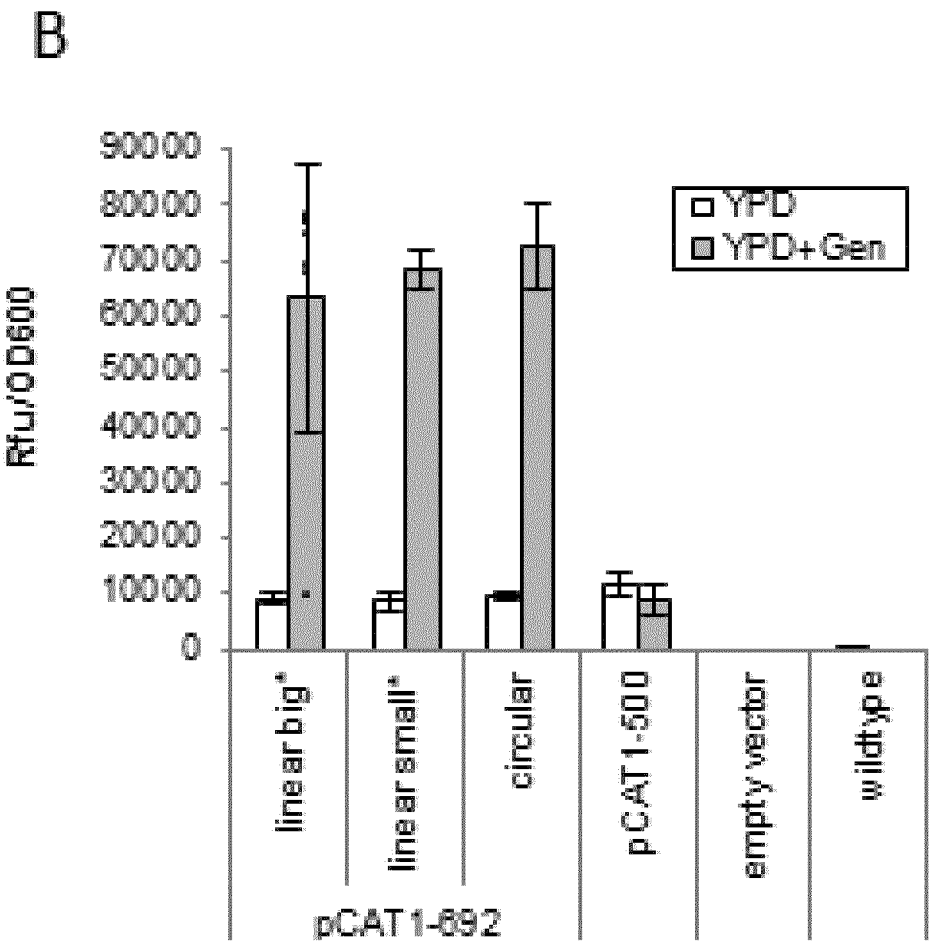

B
Rfu/OD600
90000
80000
70000
60000
50000
40000
30000
20000
10000
0
YPD
YPD+Gen
linear big*
linear small*
circular
pCAT1-500
empty vector
wildtype
pCAT1-692

Fig. 3C

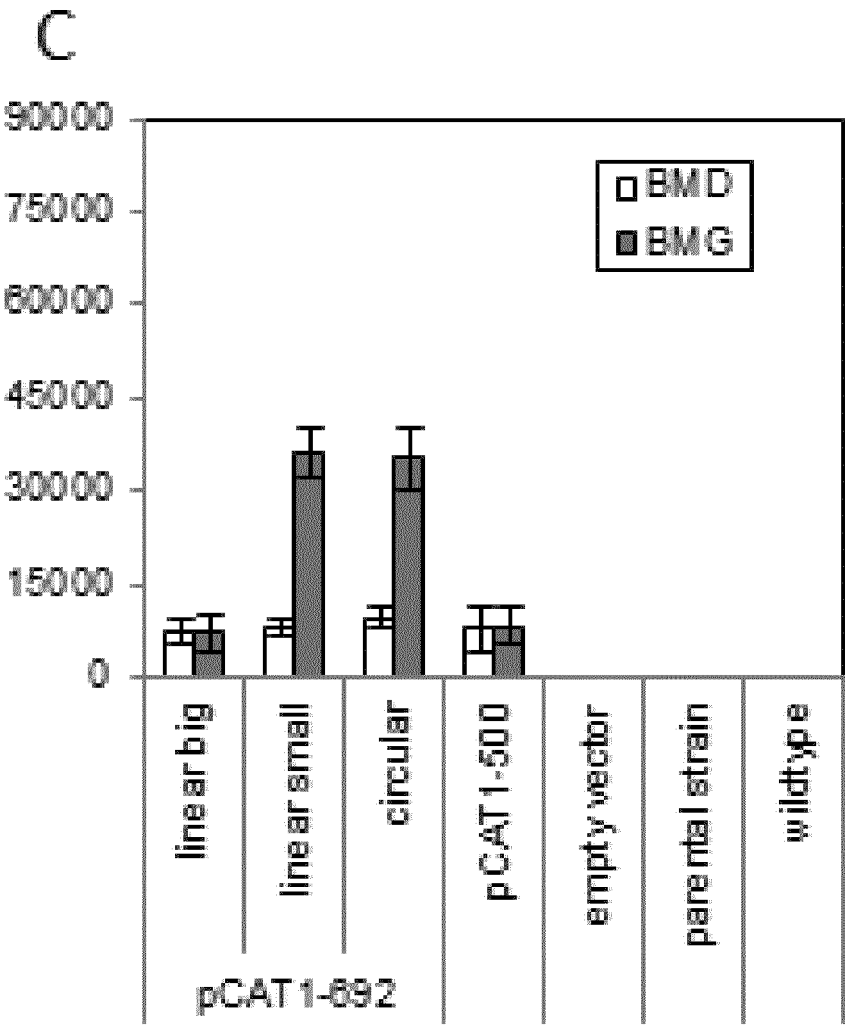

C
90000
75000
60000
45000
30000
15000
0
BMD
BMG
linear big
linear small
circular
pCAT1-500
empty vector
parental strain
wildtype
pCAT1-692

Fig. 4A

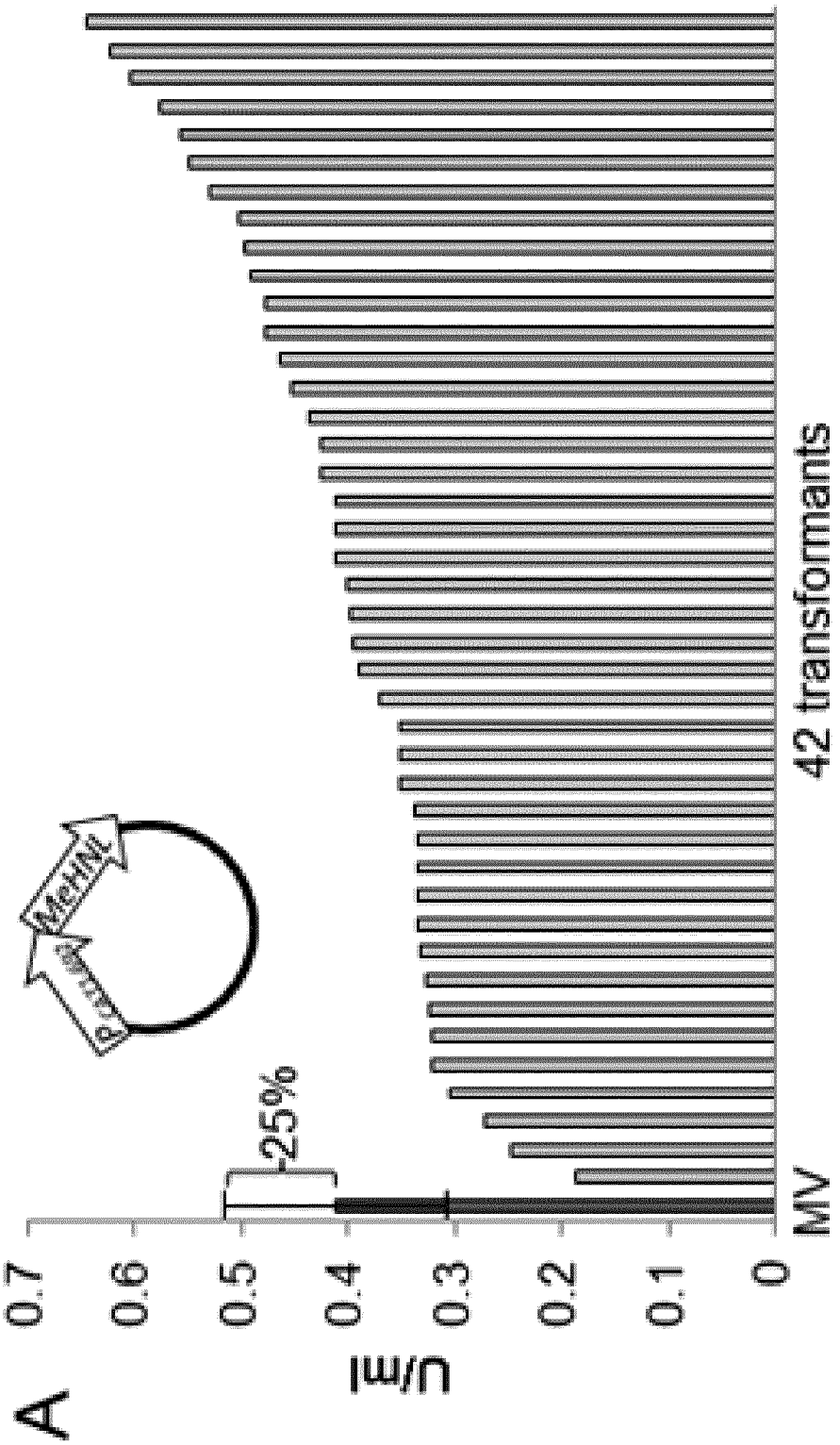


Fig. 4B

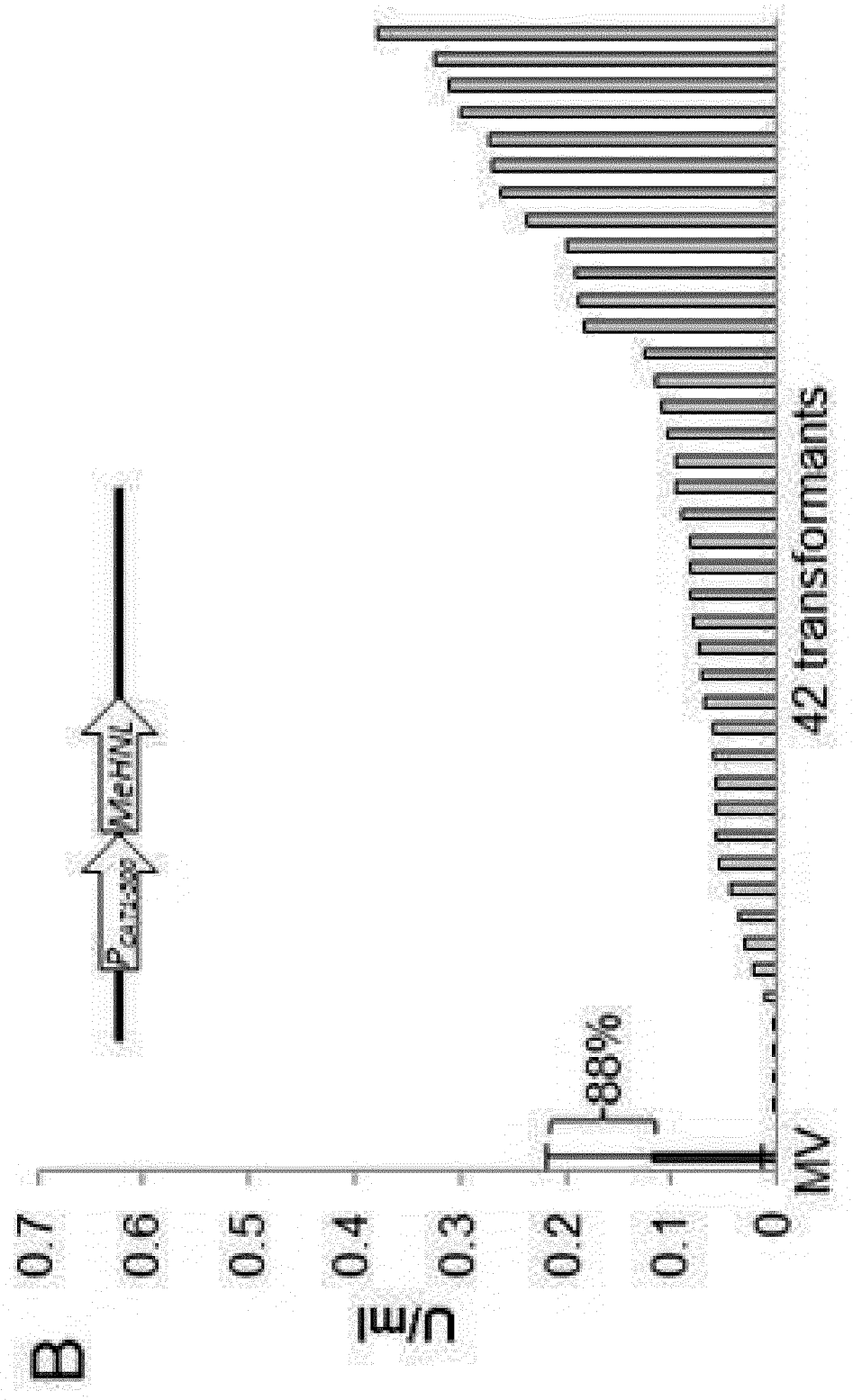


Fig. 4C

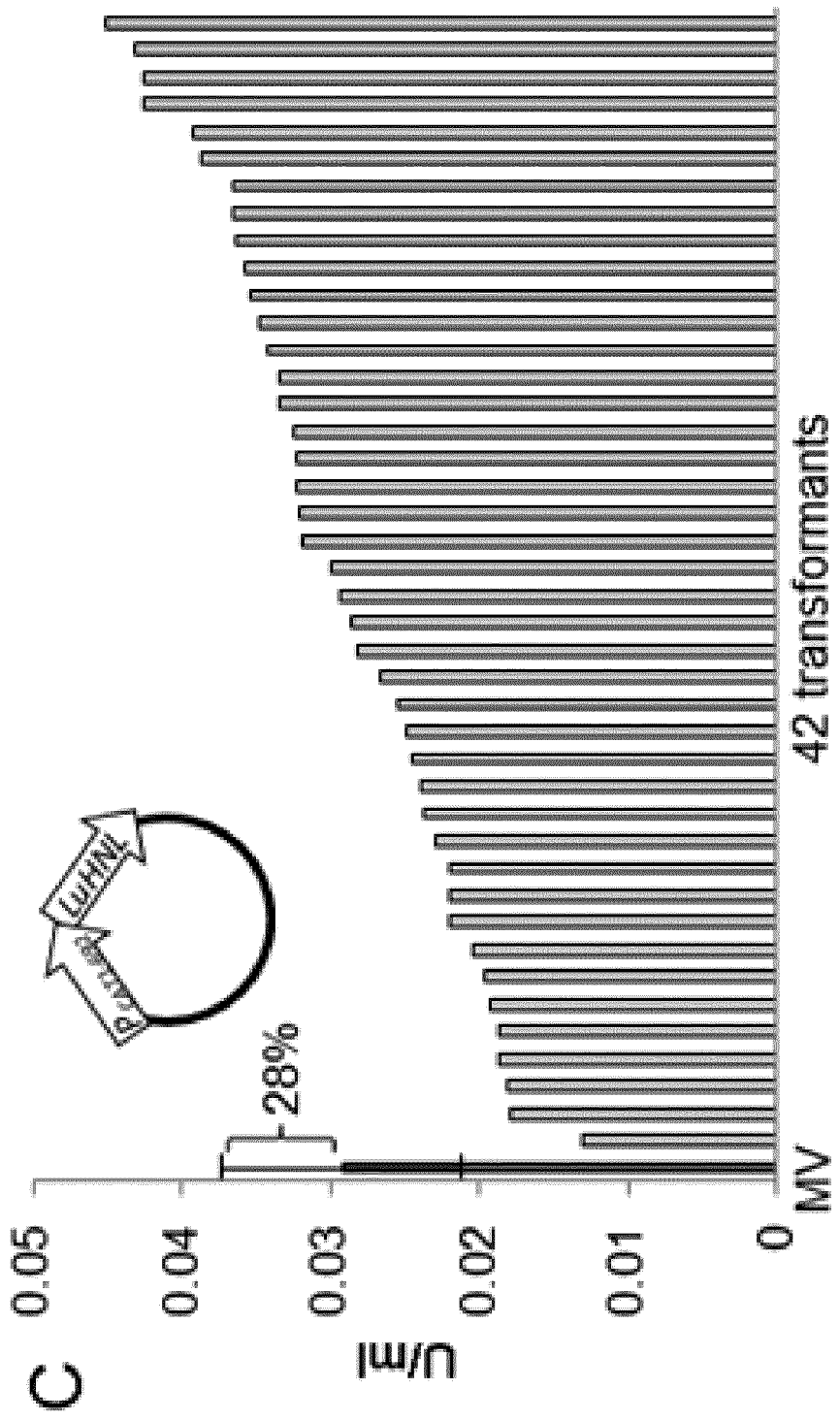


Fig. 4D

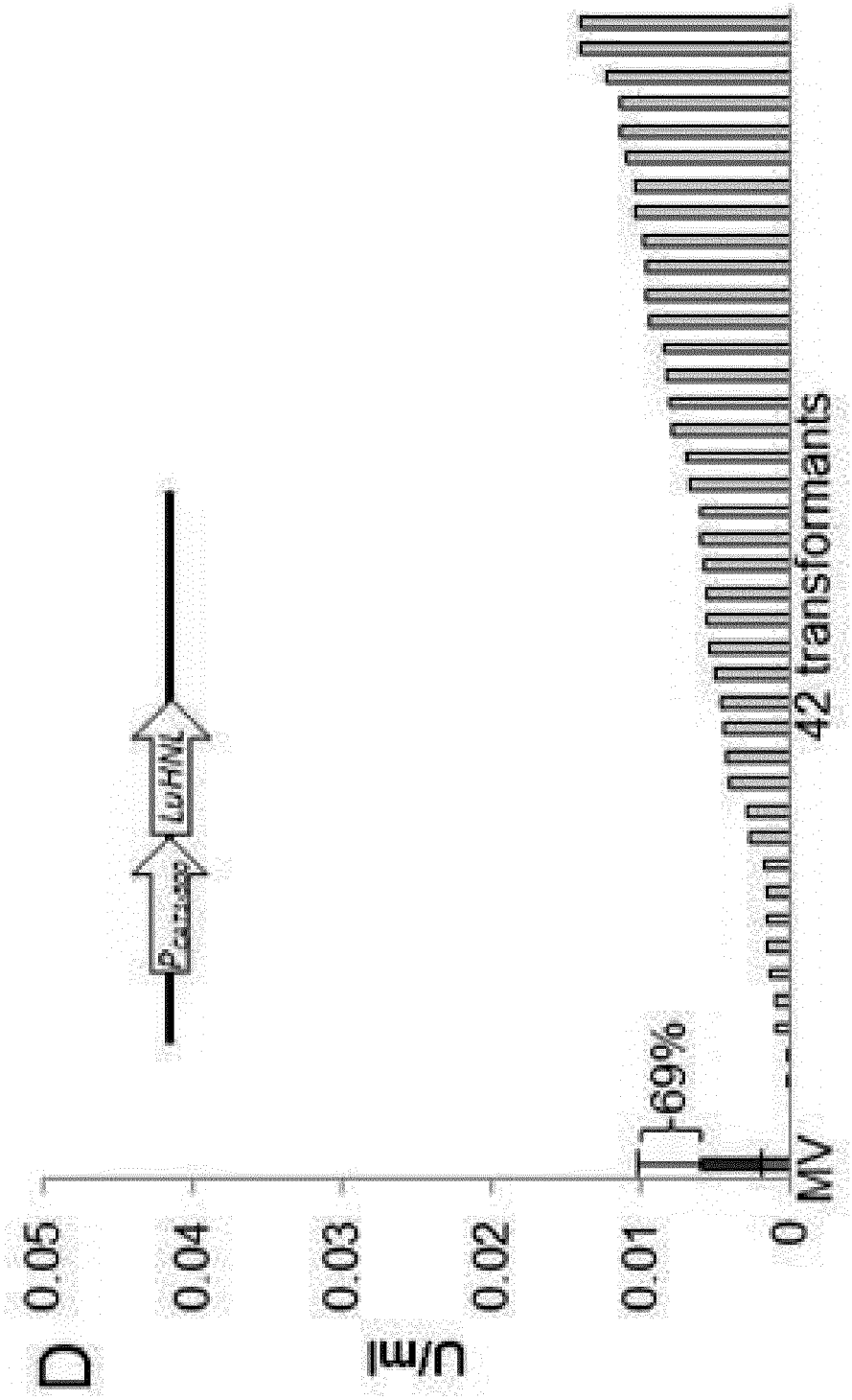


Fig. 5

Type of plasmid	**Circular ARS ($P_{CAT1-692}$)**				**Genomic integration ($P_{CAT1-500}$)**			
Marker	GUT1		Zeocin		GUT1		Zeocin	
GOI	*Me*HNL	*Lu*HNL	*Me*HNL	*Lu*HNL	*Me*HNL	*Lu*HNL	*Me*HNL	*Lu*HNL
Transformation efficiency (cfu/µg DNA)	27500	40800	11900	88400	404	162	467	528
MV±SD	42150 ± 33018				390 ± 160			

Fig. 6A

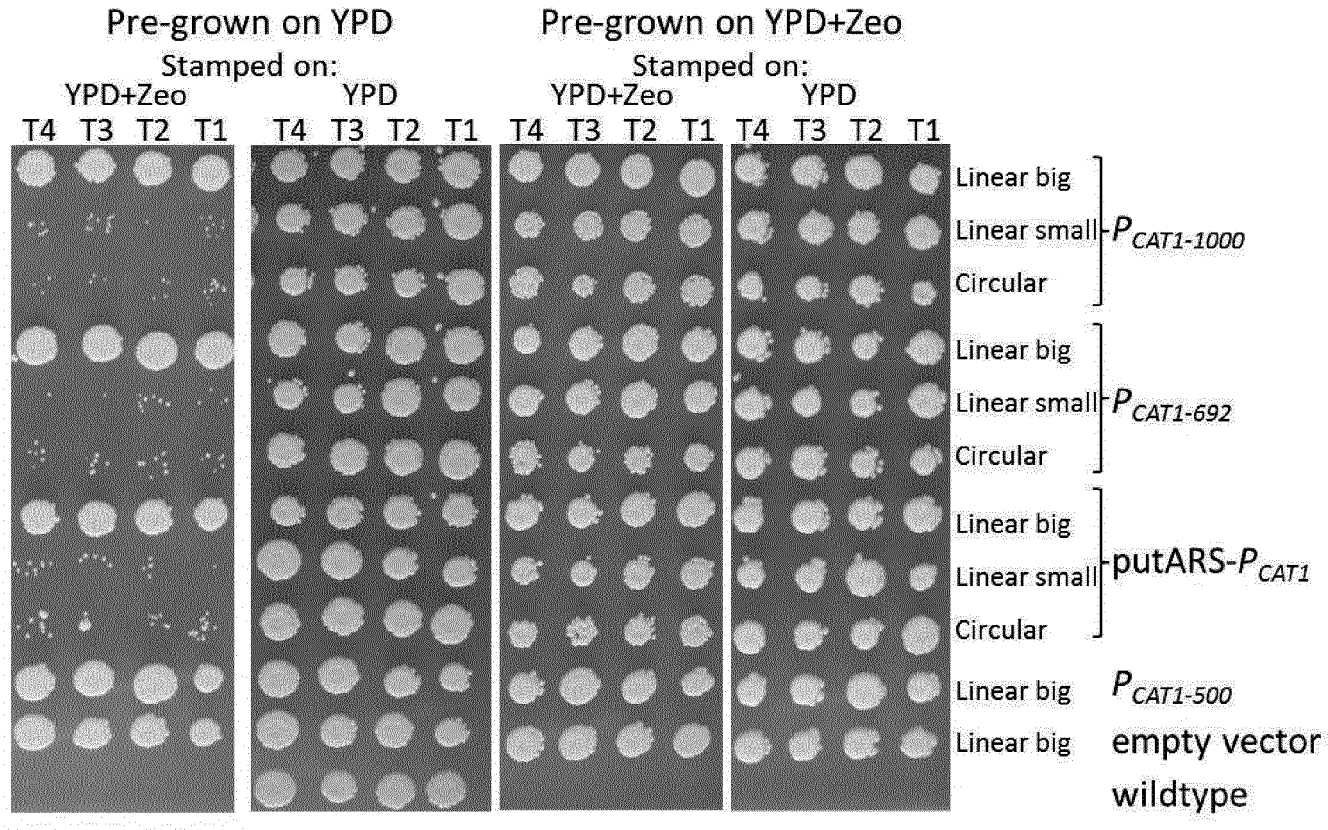


Fig. 6B

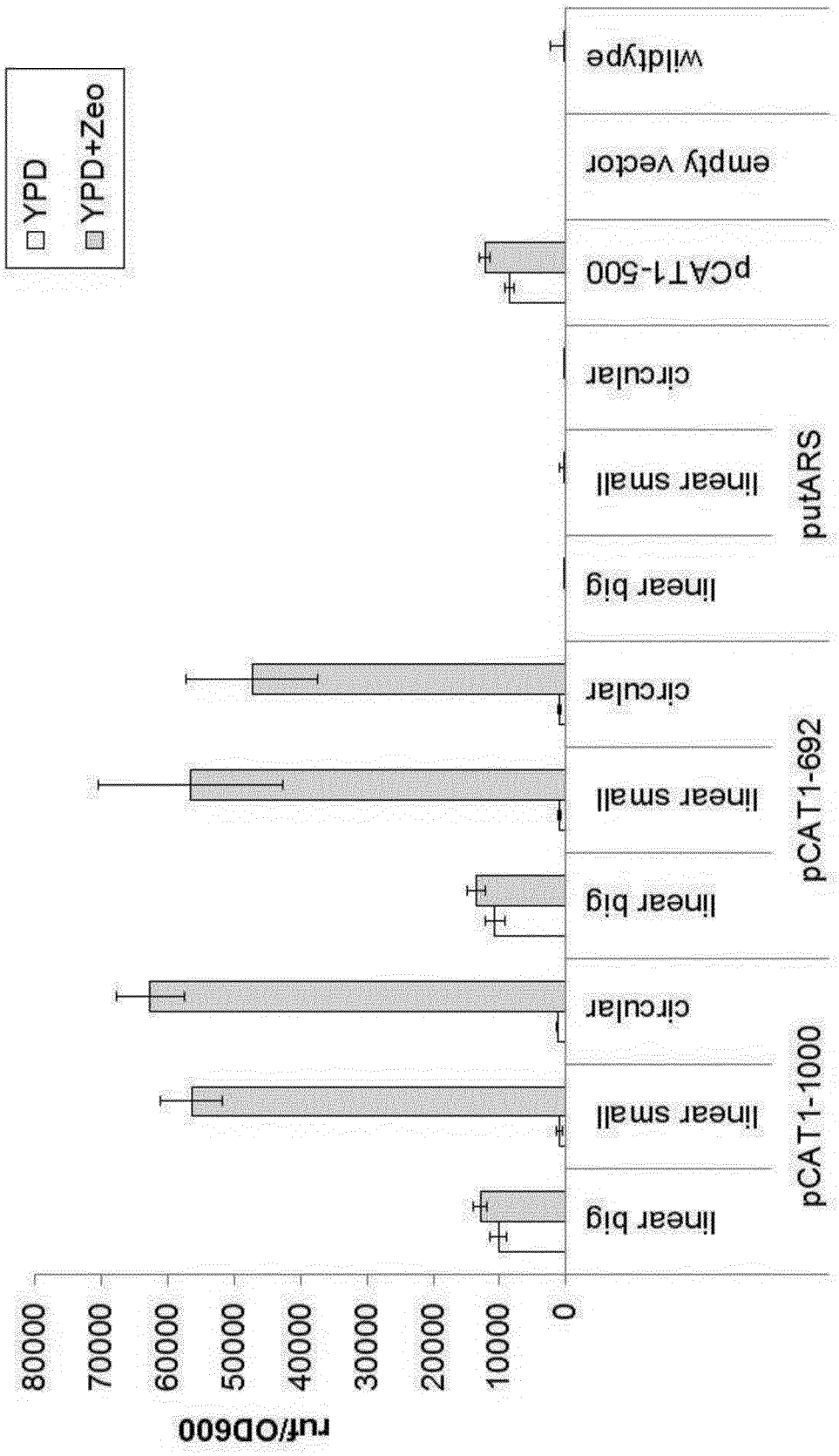

YPD
YPD+Zeo
ruf/OD600
80000
70000
60000
50000
40000
30000
20000
10000
0
linear big
linear small
circular
linear big
linear small
circular
linear big
linear small
circular
linear big
linear small
circular
pCAT1-1000
pCAT1-692
putARS
pCAT1-500
empty vector
wildtype

Fig. 7A

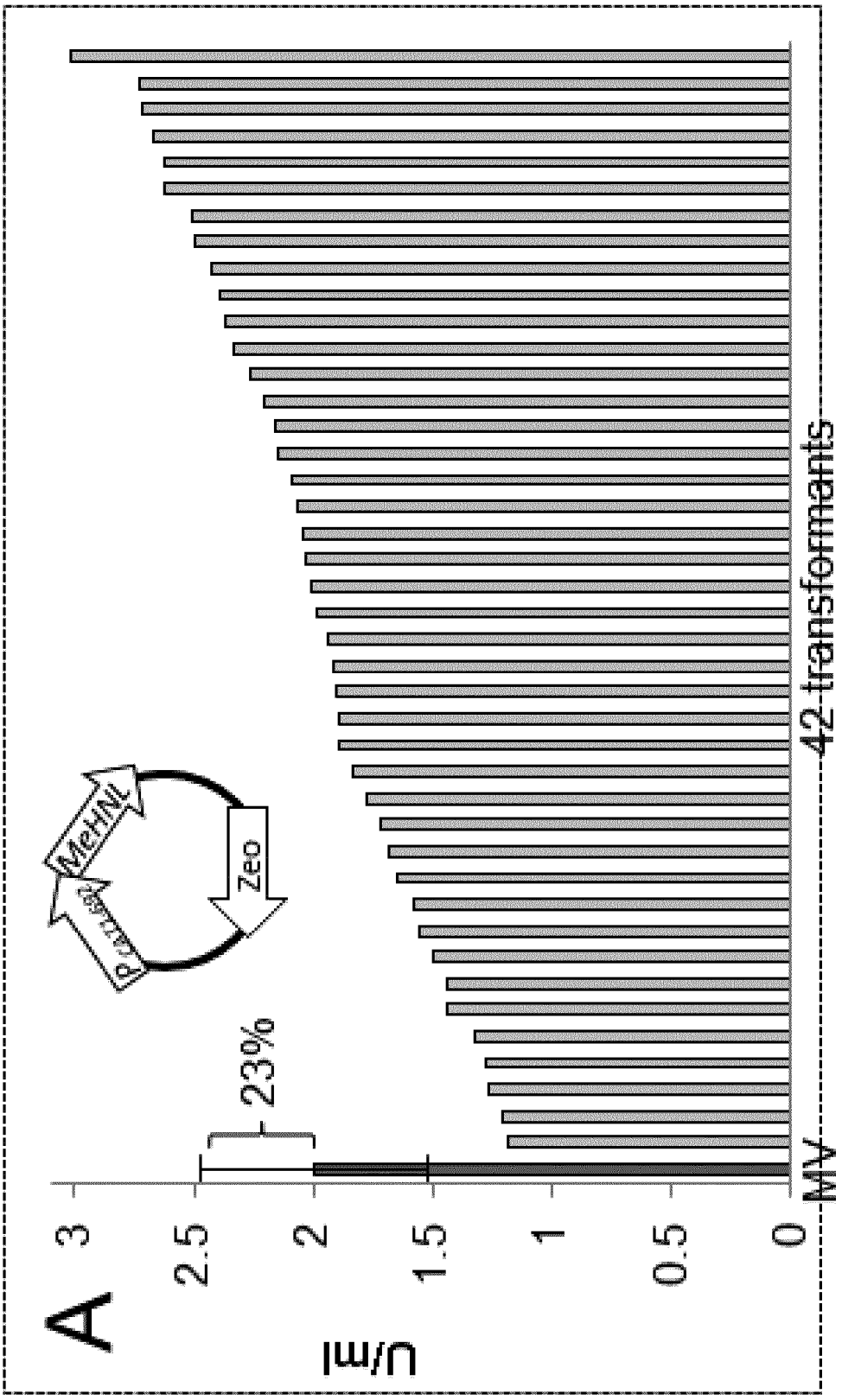


Fig. 7B

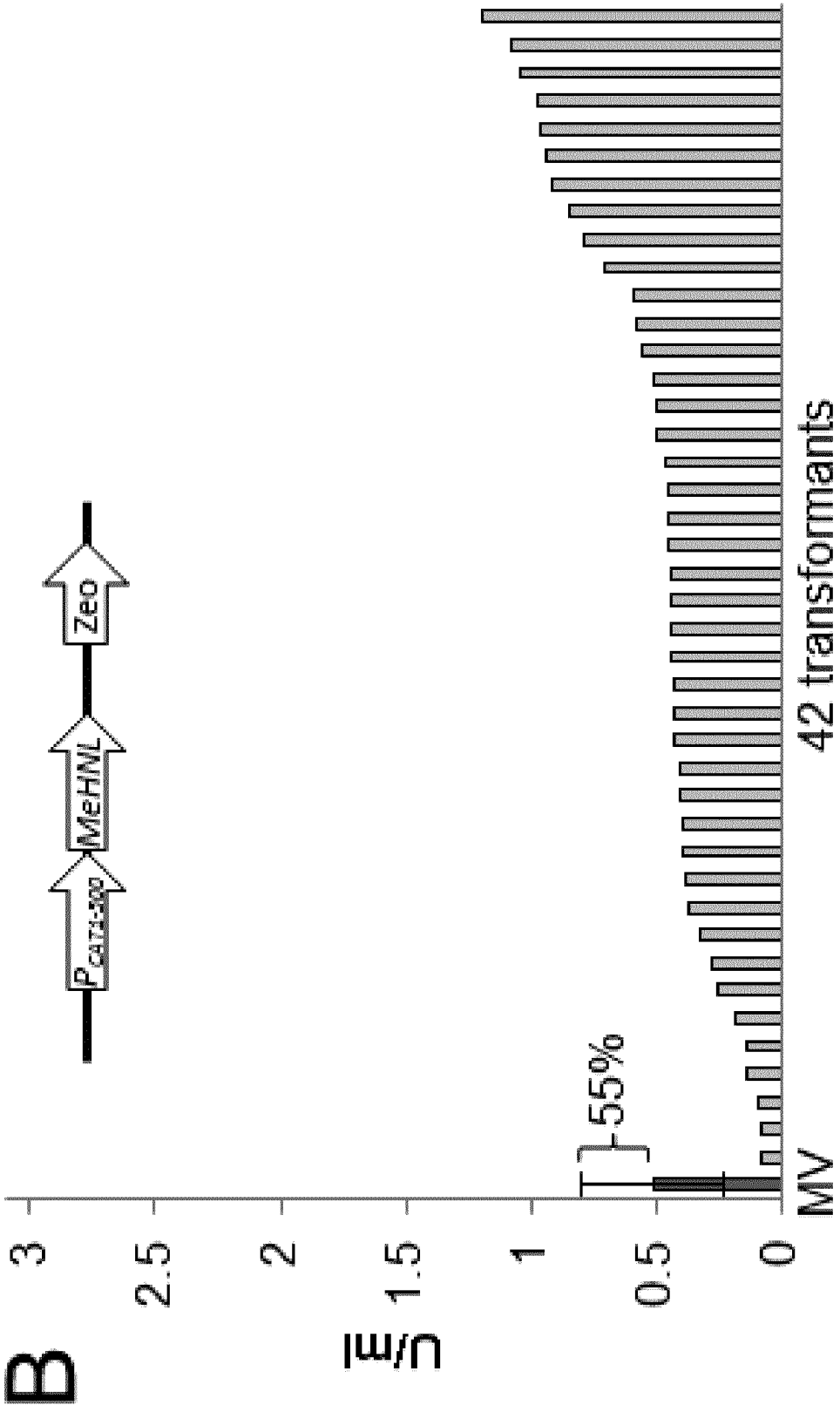


Fig. 8

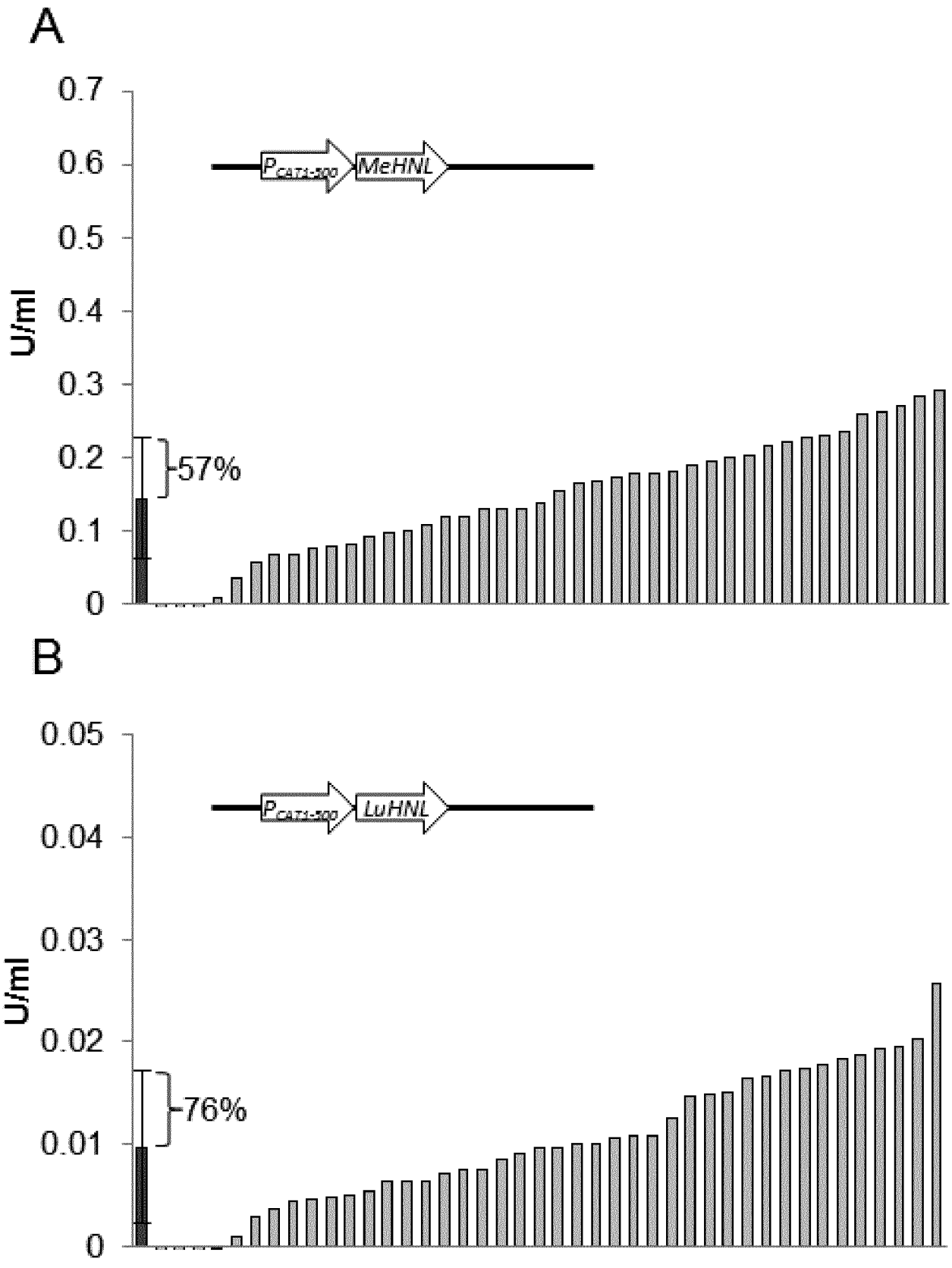

A
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
U/ml
$P_{CAT1\text{-}300}$
MeHNL
57%
B
0.05
0.04
0.03
0.02
0.01
0
U/ml
$P_{CAT1\text{-}300}$
LuHNL
76%

Fig. 9

Sequence of $P_{CAT1-692}$ (SEQ ID NO: 1)

agtgtgtaatcatatatataataaatgaggaataataattgaatagagatttaacgagtcgaagtttctgaaatatacgcac
agtttatatttatgattttgatatctaactacagtcttctccatatatttaactataaataataaagtatataactcttatgaaactgt
ttcaccacatttttttctacgtaatcgaactccgaatgcggttctcctgtaaccttaattgtagcatagatcacttaaataaactc
atggcctgacatctgtacacgttcttattggtcttttagcaatcttgaagtctttctattgttccggtcggcattacctaataaattc
gaatcgagattgctagtacctgatatcatatgaagtaatcatcacatgcaagttccatgataccctctactaatggaattga
acaaagtttaagcttctcgcacgagaccgaatccatactatgcacccctcaaagttgggattagtcaggaaagctgagc
aattaacttccctcgattggcctggacttttcgcttagcctgccgcaatcggtaagtttcattatcccagcggggtgatagcct
ctgttgctcatcaggccaaaatcatatataagctgtagacccagcacttcaattacttgaaattcaccataacacttgctcta
gtcaagacttacaattaaa

Fig. 10

Sequence of putARS-P_{CAT} (SEQ ID NO: 2)

aaaagtgcgaggaagaataaaaatactgcttcctccgcctgggaaagagcaaaaagacgcagaggaaactaaagt
gtgtaatcatatatataataaatgaggaataataattgaatagagatttaacgagtcgaagtttctgaaatatacgcacagt
ttatatttatgattttgatatctaactacagtcttctccatatatttaactataaataataaagtatataactcttatgaaactgtttc
accacatttttttctacg

Fig.11

Sequence of $P_{CAT500-692}$ (SEQ ID NO:3)

agtgtgtaatcatatatataataaatgaggaataataattgaatagagatttaacgagtcgaagtttctgaaatatacgcac
agtttatatttatgattttgatatctaactacagtcttctccatatatttaactataaataataaagtatataactcttatgaaactgt
ttcaccacatttttttctacg

Fig. 12

Sequence of CAT1-500 promoter without ARS sequence (SEQ ID NO:4)

taatcgaactccgaatgcggttctcctgtaaccttaattgtagcatagatcacttaaataaactcatggcctgacatctgtac
acgttcttattggtcttttagcaatcttgaagtctttctattgttccggtcggcattacctaataaattcgaatcgagattgctagta
cctgatatcatatgaagtaatcatcacatgcaagttccatgataccctctactaatggaattgaacaaagtttaagcttctcg
cacgagaccgaatccatactatgcacccctcaaagttgggattagtcaggaaagctgagcaattaacttccctcgattgg
cctggacttttcgcttagcctgccgcaatcggtaagtttcattatcccagcggggtgatagcctctgttgctcatcaggccaa
aatcatatataagctgtagacccagcacttcaattacttgaaattcaccataacacttgctctagtcaagacttacaattaaa

Fig.13

Sequence of CbAOD1 Promoter ARS (SEQ ID NO:5)

GGAGTATACGTAAATATATAATTATATATAATCATATATATGAATACAATGCAATGA
AAGTGAATATGATAAGATTGAAATAATAACAAACAGCGATAAATATATCTCAAAATG
GAGTTACACAACAAATAATAATAAAATATAAATTATAAATTATAAATTATAAAAGAAT
AAAAAATAAACCCCACTAATTTATTTTATTAAAAGATAGATTGGTATCTTTACTTAAT
AACAATTCTGAAACTTTATTCACTTAATTTTATTTAACTTATTTAATTTATTTTTACCC
CAGTTTTTCAGTACAATGCAGCTCCGAAACTTTATTTGGCTGTGATTTGGCTGTGA
TTTGGCTGTGATTTGGCTTGGCTTGGCTGGCTGGAATTGTCTCCTGCAGGAATTG
CTCGGGGTCCGGTTCTCCCGCTGGCTGGCTATTTGGCGGGCTGGCTATTTGGCG
GGCTGGCTGGCTGGCTGCTCTGCCATCTGCTGTGGCCACCCCGCATCTCTGGAT
GCACGCCGTGCAGCTGGACGTGCGTCTACCCTGCAGCCGTGTGCCTTATTTCCC
AATCTCCCAATCTCTCAATCTGCCAGTCAGCCAAAACACCGGCCAGGCAGGCAG
GCAGGCAGGCAGGCAGGCAGTGAAGCCTTCCCACGCCCCACTCCGCATAAACAT
CCCCAGCAGTTTCCCCAGCAGTTTCCCCAGCTTTTCAATTTAATAAAATAGCCTGT
TTCTGTTTCTGTTTTATATTATACAATTTTTTATCCTAATAATTACTCTTTCGGGAAT
TAAATAATAATTATATCATATACCCATATCACATTTTACTATATTTACTATCTATAAAT
AAATTCATATTATAATATTAATTTATATTCGCTTAATTAAAATGCTCTTTTCCATCAT
CATCATCATCATCATCATCACGAGTTTTCGGTTATCAATACTCTTTTCATTAATTTCT
AGAATTTCATTATTTATTTTTTATTGACTGGAAATTTTCAATCAATTTTATTTATTTTT
ATTTATTTATTTTCATATTCTTAGATTTAAACTTTTTAGATGACCGCTATTTTACTTAC
TTACTTACTGTTGTTTTATATTATGATAAGAATTAATTTTCATATTTATGATGATGAT
GATGTAAATTTAACCTAGTATACTATTTTAAAGTTATCACTATCTTTTAGTGCTGGC
ATTTTTTATTCTATTTTCATATATGTATATACGTAAATTAAGTATCATCACGCTGCTT
ACTGTACGTTTAAAATGTGGAGATGGAAATAGAGATGGGGATGAAGATGAAGATG
ATGAGAATTATAAACCATTCATTCATTAATCAATCAATATAACTTATAAAAAAATTTA
TATTTAAATGAATTAATTTCCTTTATTTTAATAATATCGTTAATTCTTTTAAATTCTAT
TTTATTTTAATTCTTTCTTTATCATAGTTATCATATAACAATTATATAACATAGATACA
CAATTATTATTTCATTATCATATTATTTTTTAAAATATTGATTATTTTTAAAATAATAT
CTTAATTAATTAATTTTTACGAATATACAAATTTTAACGACTTACTTTTTTTAACGAA
TTTTAACGAACTTTTAAAAAAACAAAAAAAAAAAAACAAAATTATTTTTCAATA

Figure 14

Sequence of AOD-F1 (SEQ ID NO:6)

GGAGTATACGTAAATATATAATTATATATAATCATATATATGAATACAATGCAATGA
AAGTGAATATGATAAGATTGAAATAATAACAAACAGCGATAAATATATCTCAAAATG
GAGTTACACAACAAATAATAATAAAATATAAATTATAAATTATAAATTATAAAAGAAT
AAAAAATAAACCCCACTAATTTATTTTATTAAAAGATAGATTGGTATCTTTACTTAAT
AACAATTCTGAAACTTTATTCACTTAATTTTATTTAACTTATTTAATTTATTTT

Figure 15

Sequence of AOD-F2 (SEQ ID NO:7)

TACCCCAGTTTTTCAGTACAATGCAGCTCCGAAACTTTATTTGGCTGTGATTTGGC
TGTGATTTGGCTGTGATTTGGCTTGGCTTGGCTGGCTGGAATTGTCTCCTGCAGG
AATTGCTCGGGGTCCGGTTCTCCCGCTGGCTGGCTATTTGGCGGGCTGGCTATT
TGGCGGGCTGGCTGGCTGGCTGCTCTGCCATCTGCTGTGGCCACCCCGCATCTC
TGGATGCACGCCGTGCAGCTGGACGTGCGTCTACCCTGCAGCCGTGTGCCTTAT
TTCCCAATCTCCCAATCTCTCAATCTGCCAGTCAGCCAAAACACCGGCCAGGCAG
GCAGGCAGGCAGGCAGGCAGGCAGTGAAGCCTTCCCACGCCCCACTCCGCA

Figure 16

Sequence of AOD-F3 (SEQ ID NO:8)

TAAACATCCCCAGCAGTTTCCCCAGCAGTTTCCCCAGCTTTTCAATTTAATAAAAT
AGCCTGTTTCTGTTTCTGTTTTATATTATACAATTTTTTATCCTAATAATTACTCTTT
CGGGAATTAAATAATAATTATATCATATACCCATATCACATTTTACTATATTTACTAT
CTATAAATAAATTCATATTATAATATTAATTTATATTCGCTTAATTAAAAT

Figure 17

Sequence of AOD-F4 (SEQ ID NO:9)

GCTCTTTTCCATCATCATCATCATCATCATCACGAGTTTTCGGTTATCAATACT
CTTTTCATTAATTTCTAGAATTTCATTATTTATTTTTTATTGACTGGAAATTTTCAATC
AATTTTATTTATTTTTATTTATTTATTTTCATATTCTTAGATTTAAACTTTTTAGATGA
CCGCTATTTTACTTACTTACTTACTGTTGTTTTATATTATGATAAGAATTAATTTTCA
TATTTATGATGATGATGATGTAAATTTAACCTAGTATACTATTTTAAAGTTATCACTA
TCTTTTAGTGCTGGCATTTTTTATTCTATTTTCATATATGTATATACGTAAATTAAGT
ATCATCA

Figure 18

Sequence of AOD-F5 (SEQ ID NO:10)

CGCTGCTTACTGTACGTTTAAAATGTGGAGATGGAAATAGAGATGGGGATGAAGA
TGAAGATGATGAGAATTATAAACCATTCATTCATTAATCAATCAATATAACTTATAA
AAAAATTTATATTTAAATGAATTAATTTCCTTTATTTTAATAATATCGTTAATTCTTTT
AAATTCTATTTTATTTTAATTCTTTCTTTATCATAGTTATCATATAACAATTATATAAC
ATAGATACACAATTATTATTTCATTATCATATTATTTTTTAAAATATTGATTATTTTTA
AAATAATATCTTAATTAATTAATTTTTTACGAATATACAAATTTTAACGACTTACTTTTT
TTAACGAATTTTAACGAACTTTTAAAAAAACAAAAAAAAAAAAACAAAATTATTTTTC
AATA

Figure 19

Sequence of AOD-F6 (SEQ ID NO:11)

TAAACATCCCCAGCAGTTTCCCCAGCAGTTTCCCCAGCTTTTCAATTTAATAAAAT
AGCCTGTTTCTGTTTCTGTTTTATATTATACAATTTTTTATCCTAATAATTACTCTTT
CGGGAATTAAATAATAATTATATCATATACCCATATCACATTTTACTATATTTACTAT
CTATAAATAAATTCATATTATAATATTAATTTATATTCGCTTAATTAAAATGCTCTTTT
CCATCATCATCATCATCATCATCATCACGAGTTTTCGGTTATCAATACTCTTTTCAT
TAATTTCTAGAATTTCATTATTTATTTTTTATTGACTGGAAATTTTCAATCAATTTTAT
TTATTTTTATTTATTTATTTTCATATTCTTAGATTTAAACTTTTTAGATGACCGCTATT
TTACTTACTTACTTACTGTTGTTTTATATTATGATAAGAATTAATTTTCATATTTATGA
TGATGATGATGTAAATTTAACCTAGTATACTATTTTAAAGTTATCACTATCTTTTAGT
GCTGGCATTTTTTATTCTATTTTCATATATGTATATACGTAAATTAAGTATCATCACG
CTGCTTACTGTACGTTTAAAATGTGGAGATGGAAATAGAGATGGGGATGAAGATG
AAGATGATGAGAATTATAAACCATTCATTCATTAATCAATCAATATAACTTATAAAAA
AATTTATATTTAAATGAATTAATTTCCTTTATTTTAATAATATCGTTAATTCTTTTAAA
TTCTATTTTATTTTAATTCTTTCTTTATCATAGTTATCATATAACAATTATATAACATA
GATACACAATTATTATTTCATTATCATATTATTTTTTAAAATATTGATTATTTTTAAAA
TAATATCTTAATTAATTAATTTTTACGAATATACAAATTTTAACGACTTACTTTTTTTA
ACGAATTTTAACGAACTTTTAAAAAAACAAAAAAAAAAAAACAAAATTATTTTTCAAT
A

Figure 20

Sequence of pCAT1noCore (SEQ ID NO:12)

AGTGTGTAATCATATATATAATAAATGAGGAATAATAATTGAATAGAGATTTAACGA
GTCGAAGTTTCTGAAATATACGCACAGTTTATATTTATGATTTTGATATCTAACTAC
AGTCTTCTCCATATATTTAACTATAAATAATAAAGTATATAACTCTTATGAAACTGTT
TCACCACATTTTTTTCTACGTAATCGAACTCCGAATGCGGTTCTCCTGTAACCTTA
ATTGTAGCATAGATCACTTAAATAAACTCATGGCCTGACATCTGTACACGTTCTTAT
TGGTCTTTTAGCAATCTTGAAGTCTTTCTATTGTTCCGGTCGGCATTACCTAATAAA
TTCGAATCGAGATTGCTAGTACCTGATATCATATGAAGTAATCATCACATGCAAGT
TCCATGATACCCTCTACTAATGGAATTGAACAAAGTTTAAGCTTCTCGCACGAGAC
CGAATCCATACTATGCACCCCTCAAAGTTGGGATTAGTCAGGAAAGCTGAGCAAT
TAACTTCCCTCGATTGGCCTGGACTTTTCGCTTAGCCTGCCGCAATCGGTAAGTTT
CATTATCCCAGCGGGGTGATAGCCTCTGTTGCTCATCAGGCCAAAATCA

Figure 21

Sequence of SapI cloning stuffer (SEQ ID NO:13)

ATGAGAAGAGCGAATTCGGCGCGCCGGTAAGATCCAAATCGATGAATTGACCAA
GCACTACGGTATGAAGCCAGAAGACTACACTGCTGTCAGATGTGGTATGAATGTC
GCCAAGTACATCATCGAAGATAAGATTGATGCTGGTATTGGTATCGAATGTATGCA
ACAAGTCGAATTGGAAGAGTACTTGGCCAAGCAAGGCAGACCAGCTTCTGATGCT
AAAATGTTGAGAATTGACAAGTTGGCTTGCTTGGGTTGCTGTTGTTTCTGTACCGT
TCTTTACATCTGCAACGATGAATTTTTGAAGAAAAACCCTGAAAAGGTCAGAAAGT
TCTTGAAAGCCATCAAGAAGGCAACCGACTACGTTCTAGCCGACCCTGTGAAGGC
TTGGAAAGAATACATCGACTTCAAGCCTCAATTGAACAGCTCTTCATAA

Fig. 22

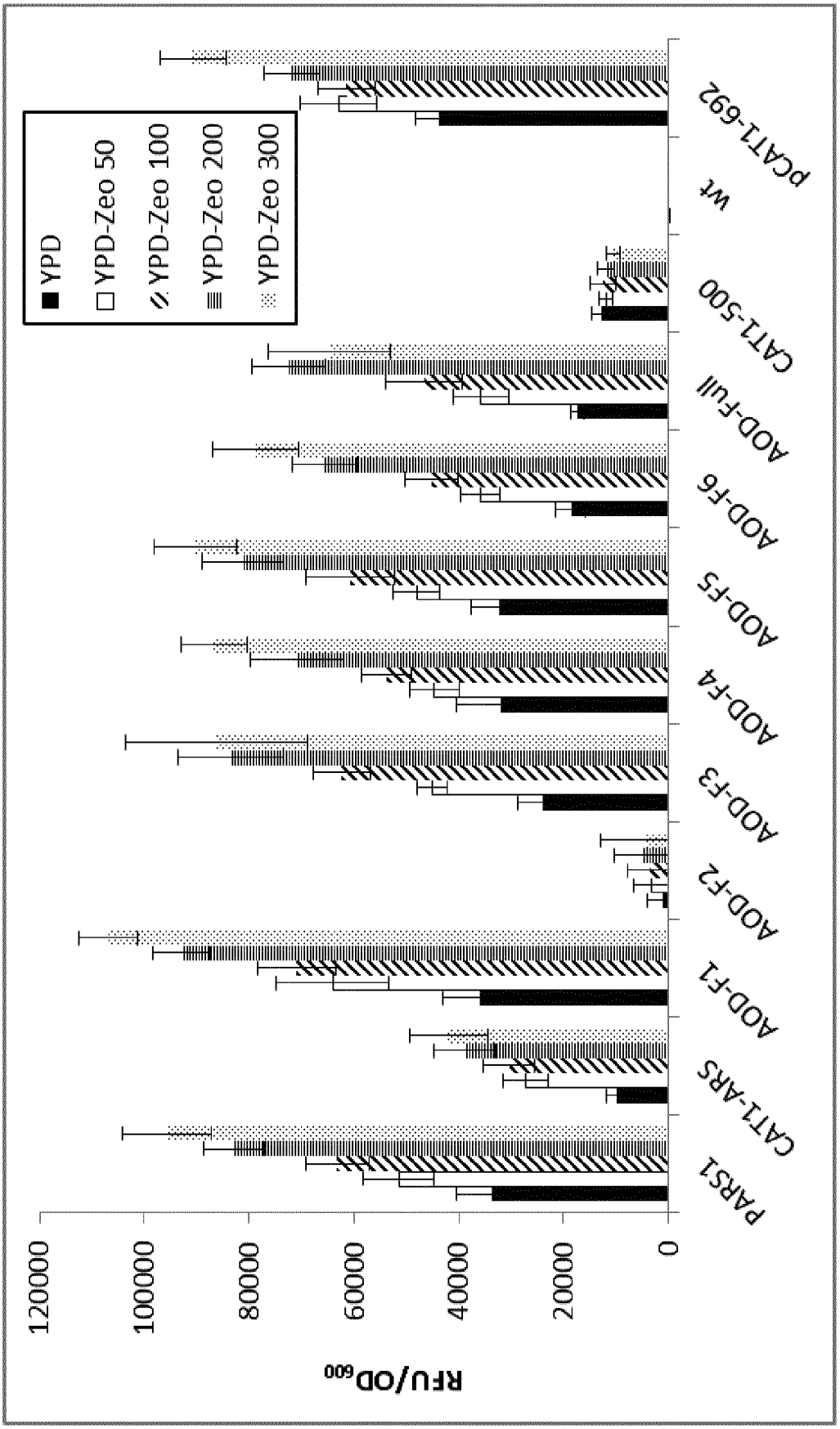

YPD
YPD-Zeo 50
YPD-Zeo 100
YPD-Zeo 200
YPD-Zeo 300
RFU/OD600
120000
100000
80000
60000
40000
20000
0
PARS1
CAT1-ARS
AOD-F1
AOD-F2
AOD-F3
AOD-F4
AOD-F5
AOD-F6
AOD-FUll
CAT1-500
wt
pCAT1-692

Fig. 23

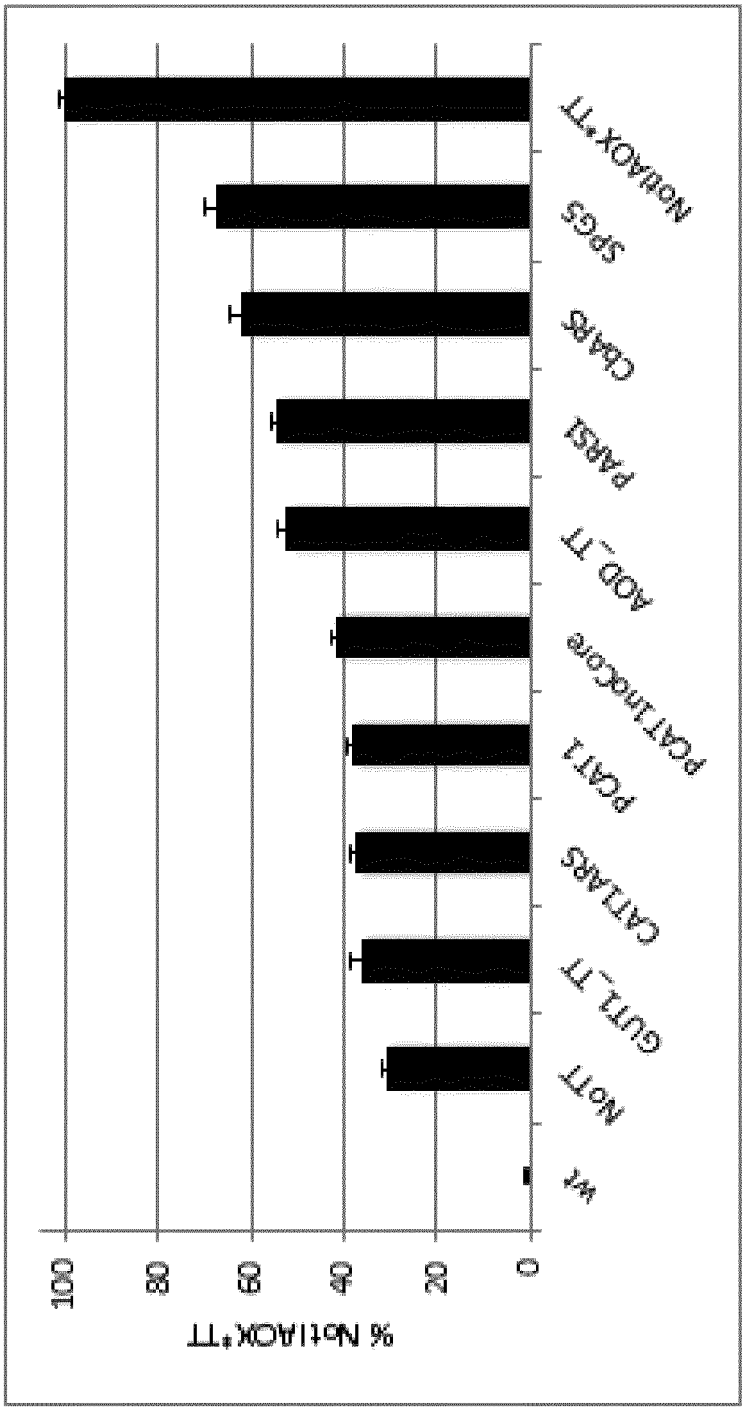

% NbA1AOX*TT
100
80
60
40
20
0
Wt
NOTT
GUT1_TT
CAT1ARS
PCAT1
PCAT1Hdcore
ADD_TT
PARS1
CbARS
SPGS
NbA1AOX*TT

Fig. 24

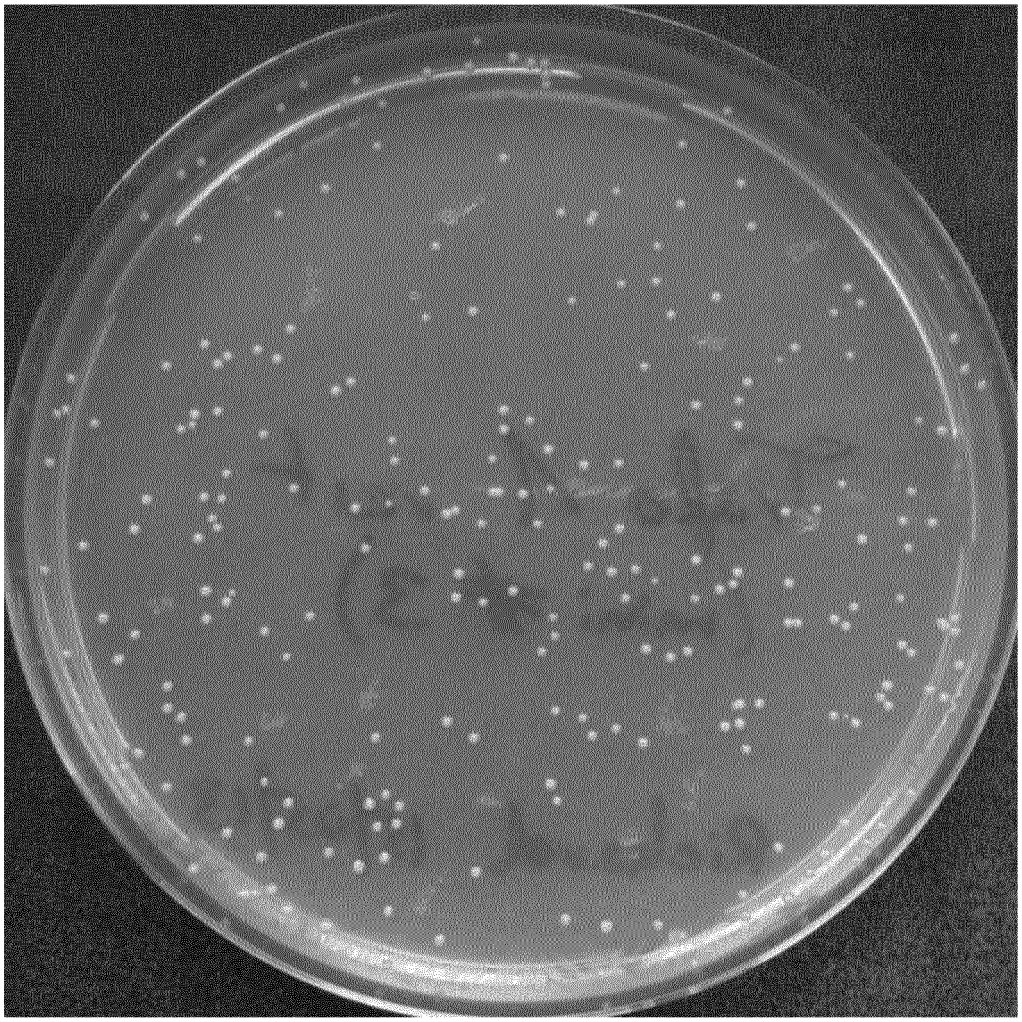
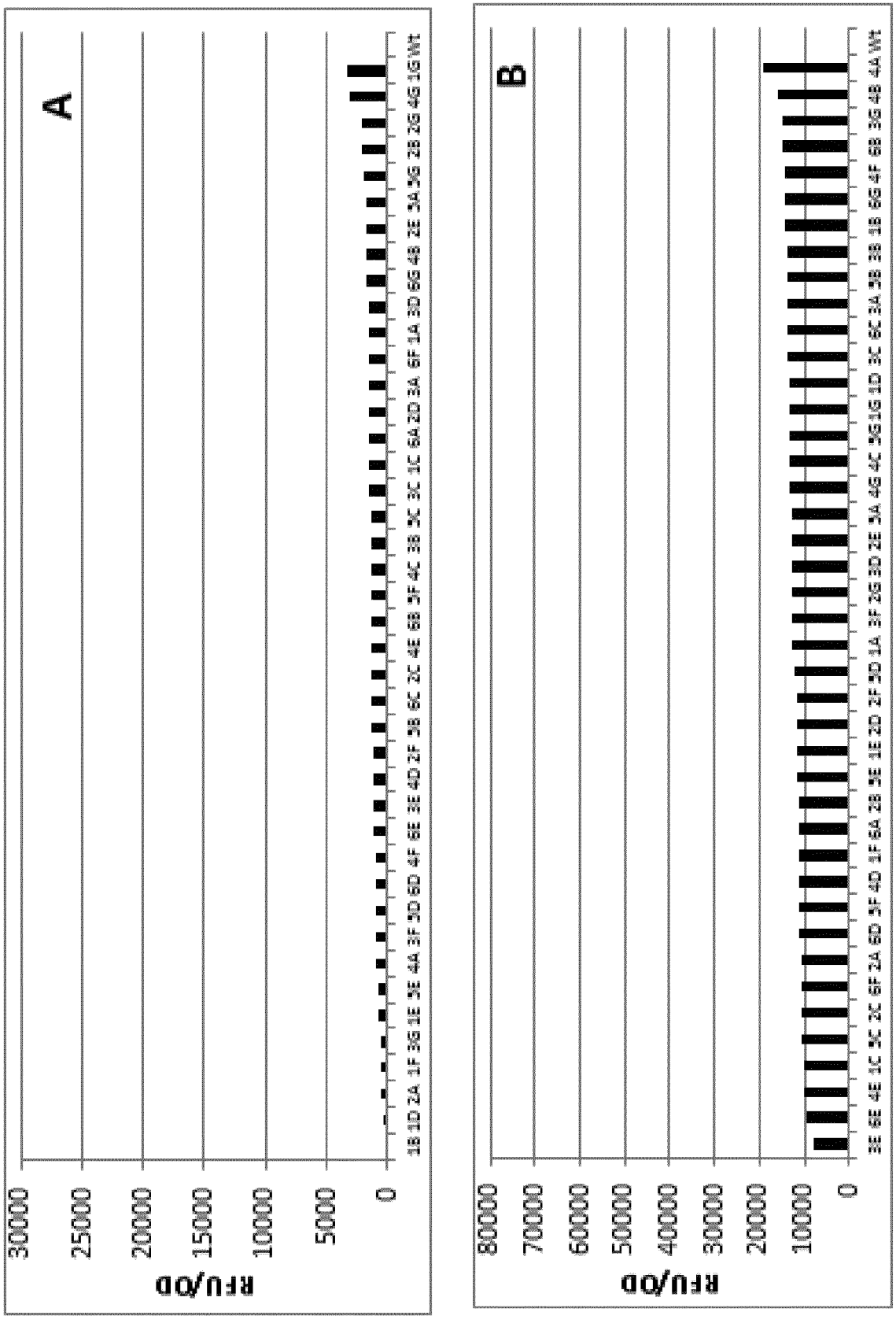


Fig. 25


A
RFU/OD
30000
25000
20000
15000
10000
5000
0
1B 1D 2A 1F 3G 1E 3E 4A 3F 3D 6D 4F 6E 3E 4D 2F 3B 6C 2C 4E 6B 3F 4C 3B 3C 3C 1C 6A 2D 3A 6F 1A 3D 6G 4B 2E 3A 3G 2B 2G 4G 1G Wt
B
RFU/OD
80000
70000
60000
50000
40000
30000
20000
10000
0
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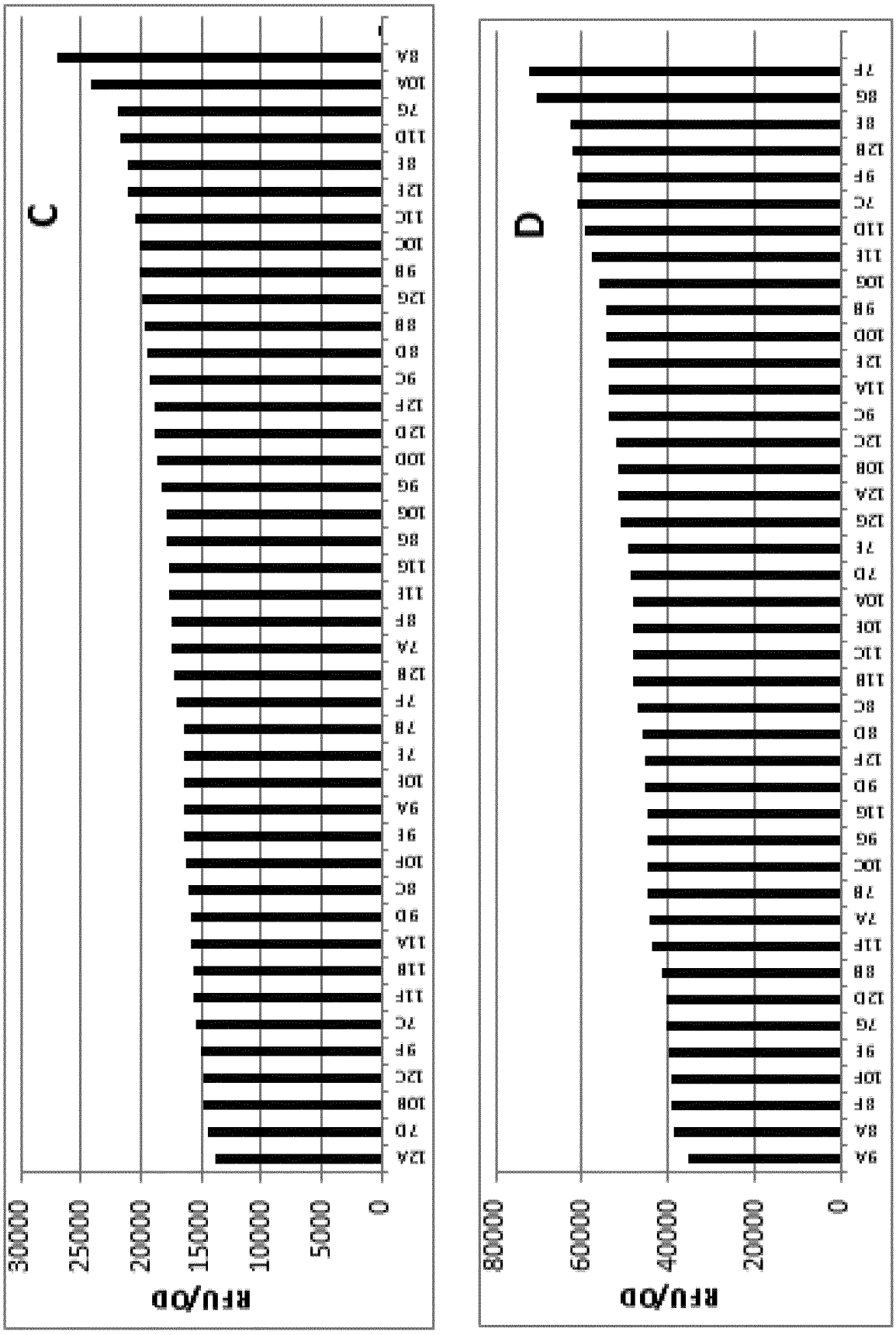


Fig. 25 continued

Fig. 26

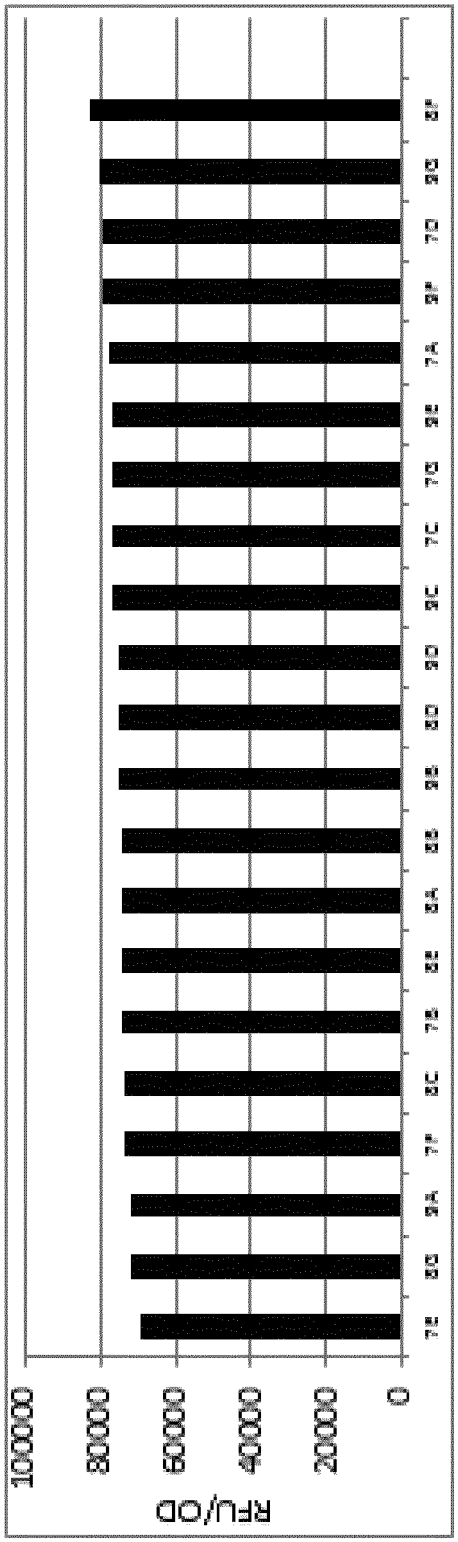


Fig. 27

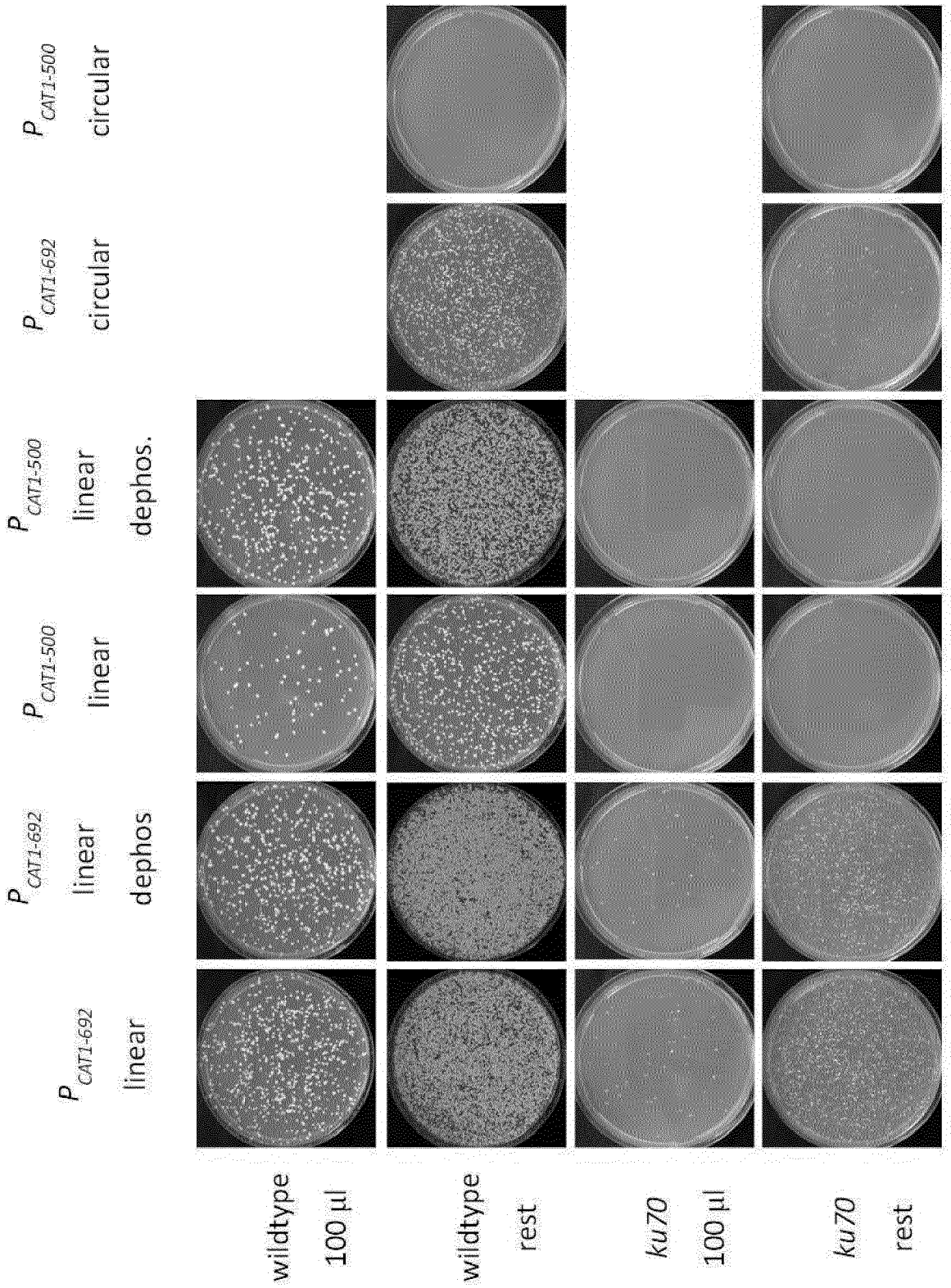

P CAT1-692 linear
P CAT1-692 linear dephos
P CAT1-500 linear
P CAT1-500 linear dephos.
P CAT1-692 circular
P CAT1-500 circular
wildtype 100 µl
wildtype rest
ku70 100 µl
ku70 rest

Fig. 28

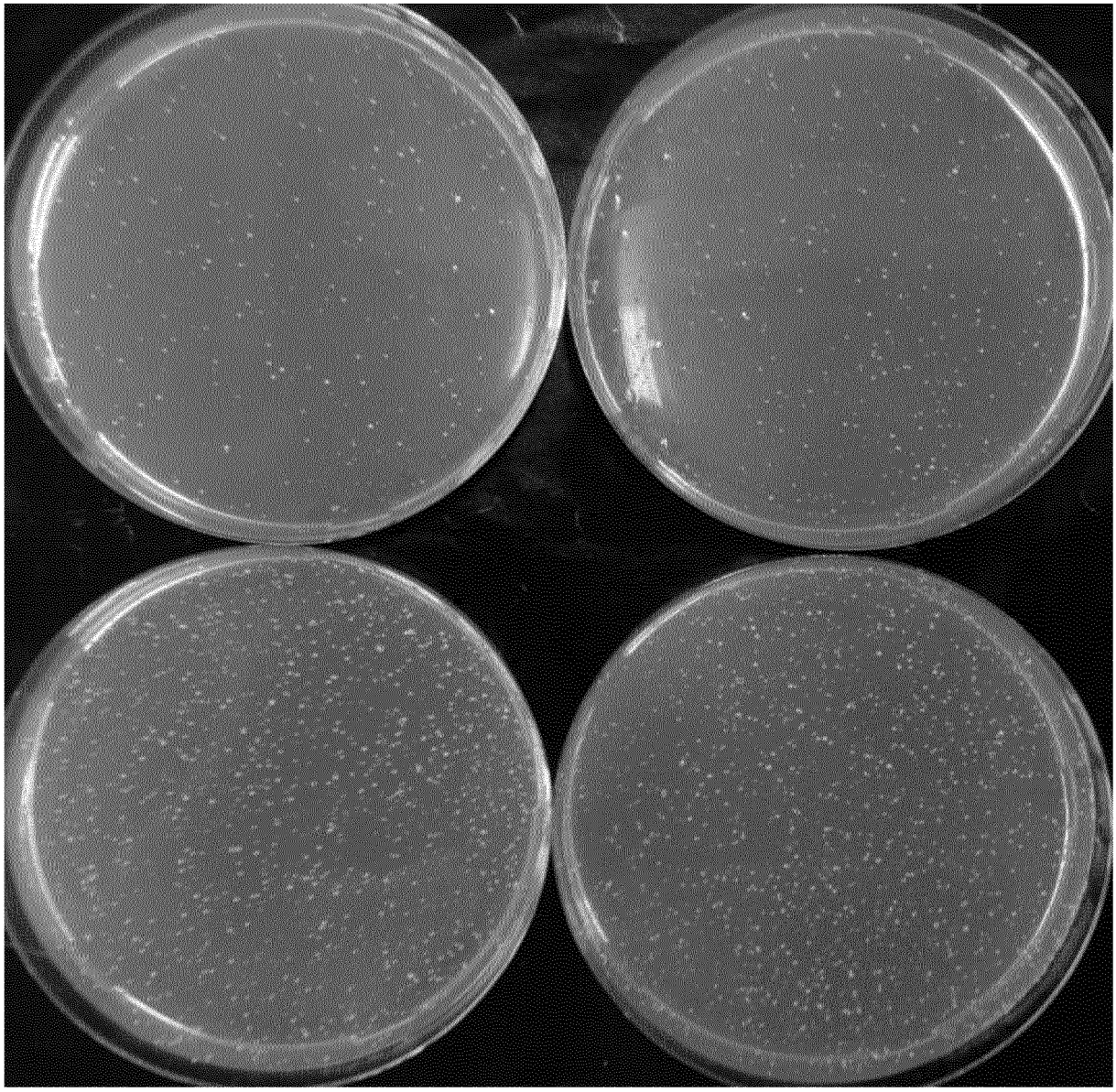


Fig. 29

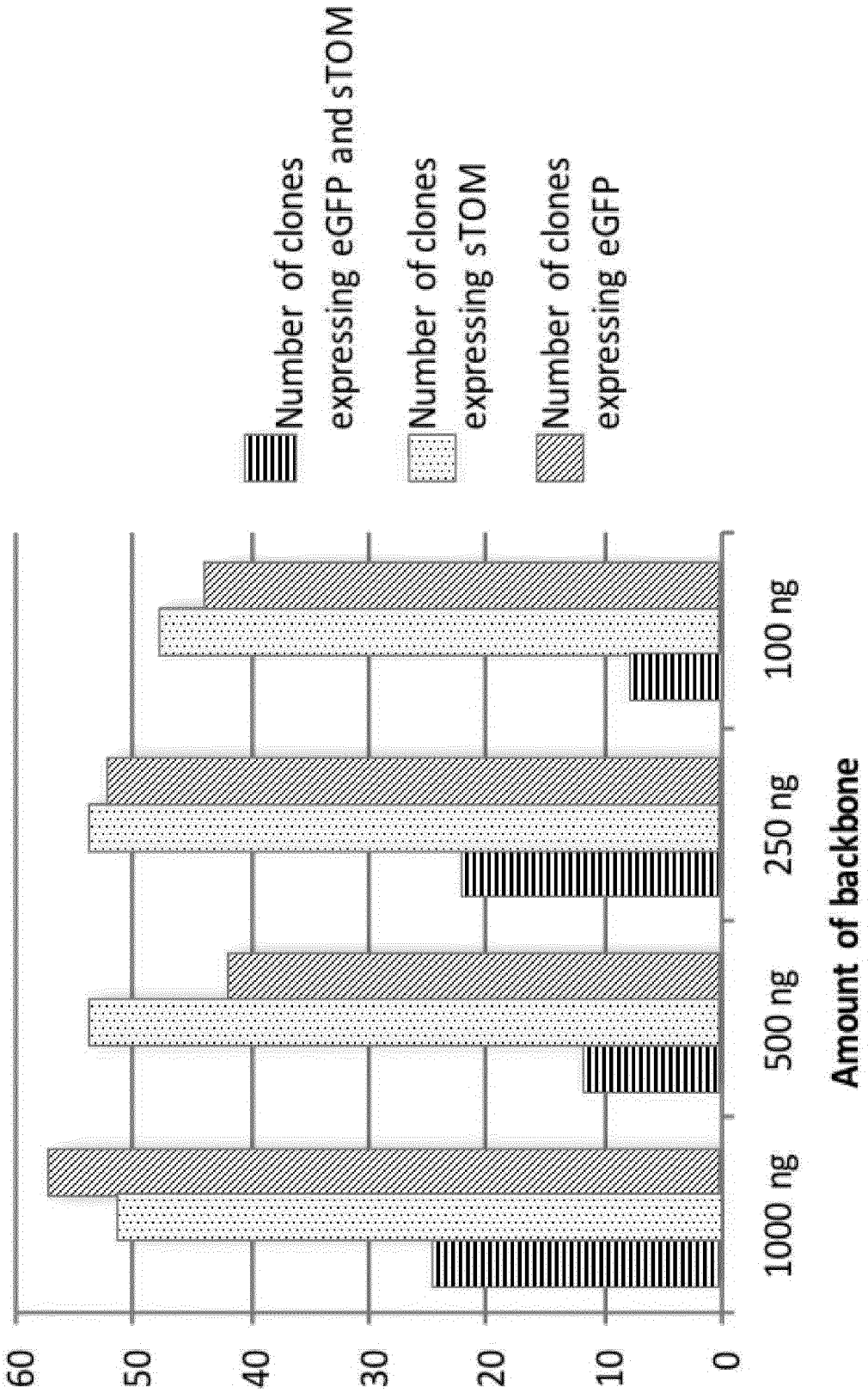

Number of clones expressing eGFP and sTOM
Number of clones expressing sTOM
Number of clones expressing eGFP
60
50
40
30
20
10
0
1000 ng
500 ng
250 ng
100 ng
Amount of backbone

Fig. 30

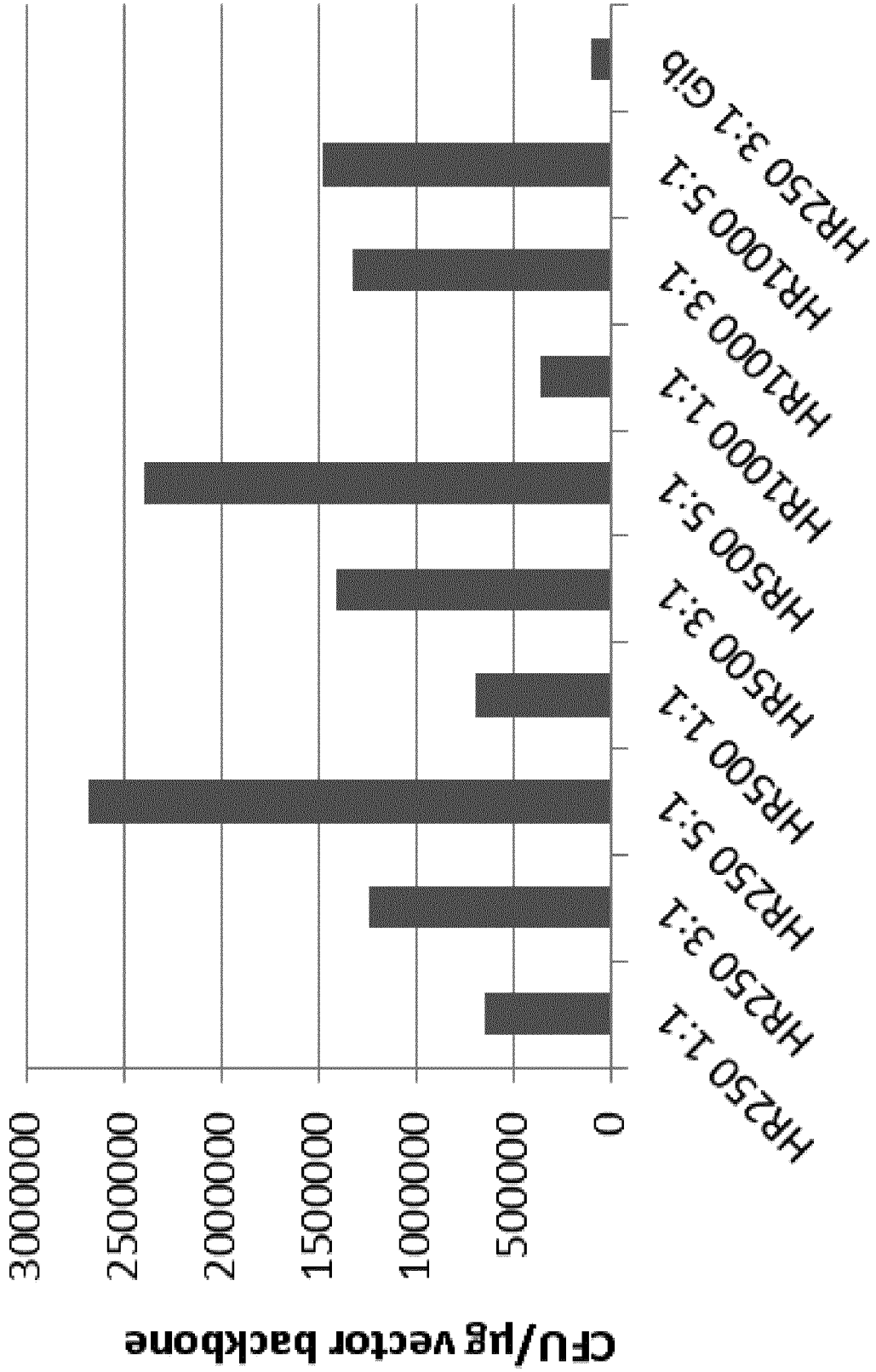

CFU/µg vector backbone
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2500000
2000000
1500000
1000000
500000
0
HR250 1:1
HR250 3:1
HR250 5:1
HR500 1:1
HR500 3:1
HR500 5:1
HR1000 1:1
HR1000 3:1
HR1000 5:1
HR250 3:1 Glb

Fig. 31

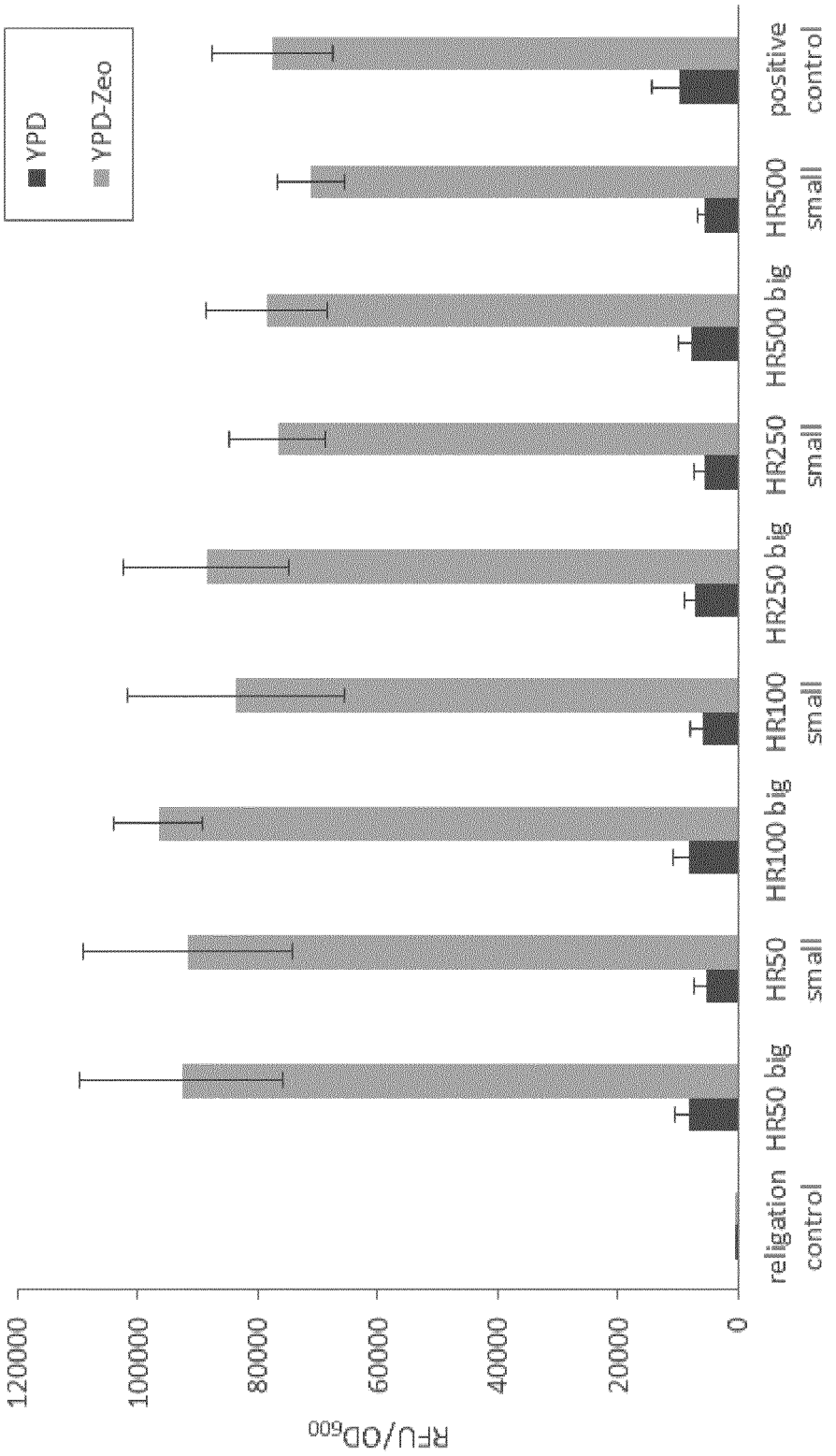

YPD
YPD-Zeo
RFU/OD600
120000
100000
80000
60000
40000
20000
0
religation control
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HR50 small
HR100 big
HR100 small
HR250 big
HR250 small
HR500 big
HR500 small
positive control

Fig. 32

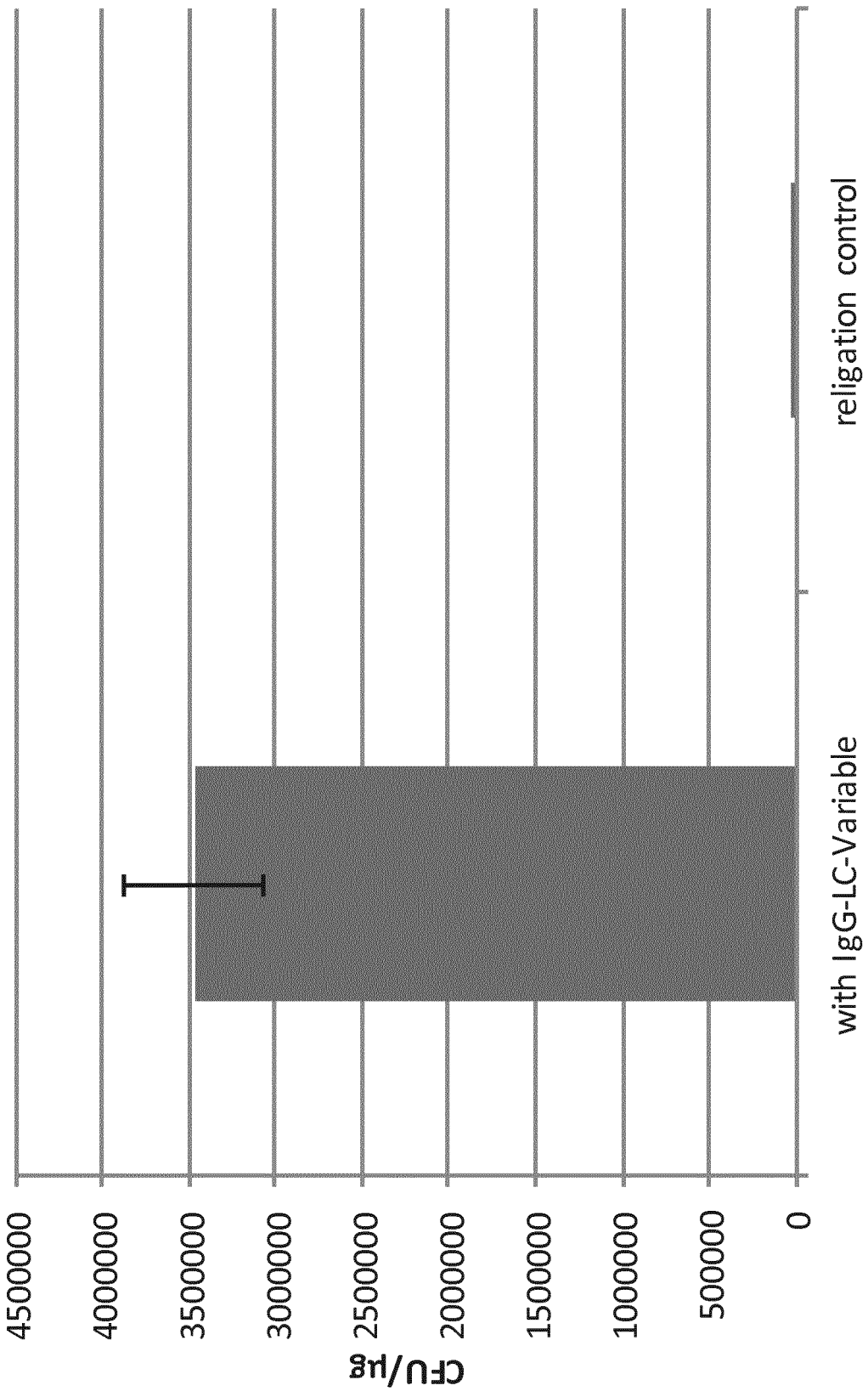

4500000
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2500000
2000000
1500000
1000000
500000
0
CFU/µg
with IgG-LC-Variable
religation control

Fig. 33

SEQ ID NO:72

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Fig. 33 continued

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Fig. 33 continued

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GCTAAGGTCCAGTGGAAAGTTGACAATGCATTGCAATCAGGTAACTCTCAGGAAAGTGTGACAGAA

CAAGATTCCAAGGATAGCACTTACTCTTTGTCCTCTACGTTGACATTGTCCAAAGCCGACTATGAAA
AACACAAAGTTTATGCATGTGAGGTTACACATCAAGGTTTATCATCTCCCGTTACCAAATCCTTCAAC
AGAGGAGAATGTTAAGCGGCCGCTCAAGAGGATGTCAGAATGCCATTTGCCTGAGAGATGCAGGC
TTCATTTTTGATACTTTTTTATTTGTAACCTATATAGTATAGGATTTTTTTTGTCATTTTGTTTCTTCTC
GTACGAGCTTGCTCCTGATCAGCCTATCTCGCAGCAGATGAATATCTTGTGGTAGGGGTTTGGGAA
AATCATTCGAGTTTGATGTTTTTCTTGGTATTTCCCACTCCTCTTCAGAGTACAGAAGATTAAGTGAG
ACCTTCGTTTGTGCGGATCCTTCAGTAATGTCTTGTTTCTTTTGTTGCAGTGGTGAGCCATTTTGACT
TCGTGAAAGTTTCTTTAGAATAGTTGTTTCCAGAGGCCAAACATTCCACCCGTAGTAAAGTGCAAGC
GTAGGAAGACCAAGACTGGCATAAATCAGGTATAAGTGTCGAGCACTGGCAGGTGATCTTCTGAAA
GTTTCTACTAGCAGATAAGATCCAGTAGTCATGCATATGGCAACAATGTACCGTGTGGATCTAAGAA
CGCGTCCTACTAACCTTCGCATTCGTTGGTCCAGTTTGTTGTTATCGATCAACGTGACAAGGTTGTC
GATTCCGCGTAAGCATGCATACCCAAGGACGCCTGTTGCAATTCCAAGTGAGCCAGTTCCAACAAT
CTTTGTAATATTAGAGCACTTCATTGTGTTGCGCTTGAAAGTAAAATGCGAACAAATTAAGAGATAAT
CTCGAAACCGCGACTTCAAACGCCAATATGATGTGCGGCACACAATAAGCGTTCATATCCGCTGGG
TGACTTTCTCGCTTTAAAAAATTATCCGAAAAAATTTTCTAGAGTGTTGTTACTTTATACTTCCGGCTC
GTATAATACGACAAGGTGTAAGGAGGACTAAACCATGGCTAAACTCACCTCTGCTGTTCCAGTCCT
GACTGCTCGTGATGTTGCTGGTGCTGTTGAGTTCTGGACTGATAGACTCGGTTTCTCCCGTGACTT
CGTAGAGGACGACTTTGCCGGTGTTGTACGTGACGACGTTACCCTGTTCATCTCCGCAGTTCAGGA
CCAGGTTGTGCCAGACAACACTCTGGCATGGGTATGGGTTCGTGGTCTGGACGAACTGTACGCTG
AGTGGTCTGAGGTCGTGTCTACCAACTTCCGTGATGCATCTGGTCCAGCTATGACCGAGATCGGTG
AACAGCCCTGGGGTCGTGAGTTTGCACTGCGTGATCCAGCTGGTAACTGCGTGCATTTCGTCGCA
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TATTTAACTTATTTAATTTATTTTATCCTTAGCGAAAGCTAAGGATTTTTTTTTAGGTACCACTGAGCGT
CAGACCCCGTAGAAAAGATCAAAGGATCTTCTTGAGATCCTTTTTTTCTGCGCGTAATCTGCTGCTT
GCAAACAAAAAAACCACCGCTACCAGCGGTGGTTTGTTTGCCGGATCAAGAGCTACCAACTCTTTT
TCCGAAGGTAACTGGCTTCAGCAGAGCGCAGATACCAAATACTGTTCTTCTAGTGTAGCCGTAGTT
AGGCCACCACTTCAAGAACTCTGTAGCACCGCCTACATACCTCGCTCTGCTAATCCTGTTACCAGT
GGCTGCTGCCAGTGGCGATAAGTCGTGTCTTACCGGGTTGGACTCAAGACGATAGTTACCGGATA
AGGCGCAGCGGTCGGGCTGAACGGGGGGTTCGTGCACACAGCCCAGCTTGGAGCGAACGACCTA
CACCGAACTGAGATACCTACAGCGTGAGCTATGAGAAAGCGCCACGCTTCCCGAAGGGAGAAAGG
CGGACAGGTATCCGGTAAGCGGCAGGGTCGGAACAGGAGAGCGCACGAGGGAGCTTCCAGGGG
GAAACGCCTGGTATCTTTATAGTCCTGTCGGGTTTCGCCACCTCTGACTTGAGCGTCGATTTTTGTG
ATGCTCGTCAGGGGGGCGGAGCCTATGGAAAAACGCCAGCAACGCGGCCTTTTTACGGTTCCTGG
CCTTTTGCTGGCCTTTTGCTCACATGTTCTTTCCTGCGGTACCC

Fig. 33 continued

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ATGAGTGTTGTCAGCAAGCAATACGACATCCACGAAGGCATTATCTTTGTAATTGAATTGACCCCGG
AGCTTCACGCGCCGGCTTCAGAAGGGAAATCTCAGCTCCAGATCATCTTAGAGAATGTCAGTGAGG
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CAAAGATGTGGAGACAAAATCTCAGTTTGTCGATCCAACATCCGGAAAAGAGTTTTCCAGTGAACA
GCTGATCAAAGCATATCCTCTAGGTGCCGATGCTTACATTCCTTTAAACTCAGAGCAAGTCAAAACA
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GAAAGATCCACATCAAGAATGGATACCAACCCCAAGAGTATGAAAATCCTTCCCTACAATGGCACTT
CAAAATGTTACGTGACGATTACCTTCAATTGGAACACGATATCGACATCAGTGACCCCCTTGAGAAA
CAAAAGTACATAAACAGCCTCGATGAGACAAAAACCAAGATCATGAAACTACGGGACTATGTCAAG
GAAACTGCCGATGATGACGACCCTTCACGGCTTGCCAACACTCTCAAAGAGCTCAACCAAGAGCTG
AACAAAATTTCCAACTTTGATATCATCGCCAATAAGAAGCCAAAGACCCCCACGACAGTAGACCCTG
TTCCTACTGATGATGACATCATCAACGCCTGGAAGGCAGGAACTCTGAACGGTTTCAAGGTGGATC
AATTACGAAAATACGTAAGGTCACGAAACAACTTTCTGGAGACGGCCTCCAAAAAGGCAGATCTCA
TCGCCAACATTGACAAGTACTTTCAGCAGAAGTTCAAAGAGACTAAGGCCTGA