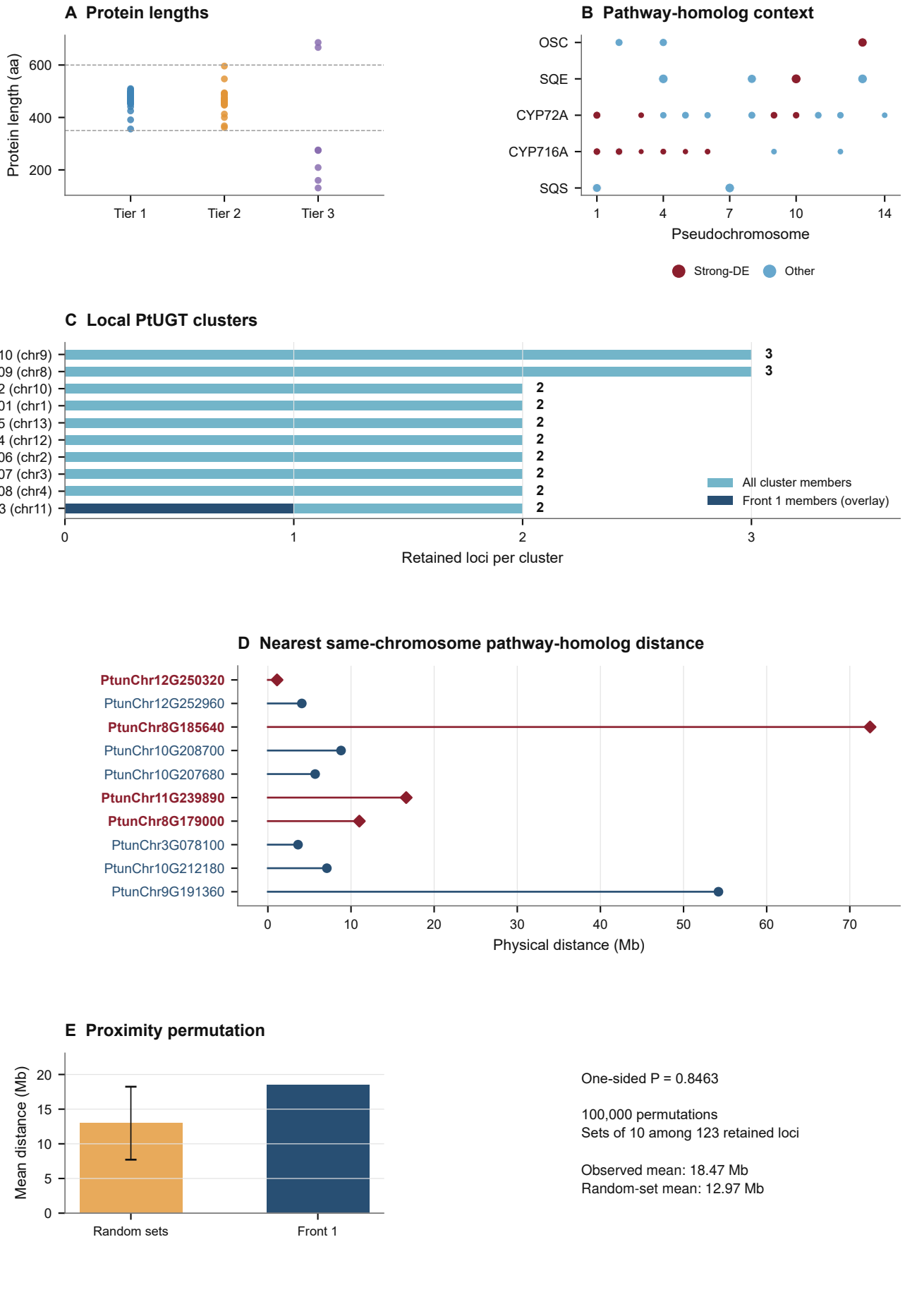

A Protein lengths
Protein length (aa)
600
400
200
Tier 1
Tier 2
Tier 3
B Pathway-homolog context
OSC
SQE
CYP72A
CYP716A
SQS
1
4
7
10
14
Pseudochromosome
Strong-DE
Other
C Local PtUGT clusters
TC10 (chr9)
TC09 (chr8)
TC02 (chr10)
TC01 (chr1)
TC05 (chr13)
TC04 (chr12)
TC06 (chr2)
TC07 (chr3)
TC08 (chr4)
TC03 (chr11)
3
3
2
2
2
2
2
2
2
2
All cluster members
Front 1 members (overlay)
0
1
2
3
Retained loci per cluster
D Nearest same-chromosome pathway-homolog distance
PtunChr12G250320
PtunChr12G252960
PtunChr8G185640
PtunChr10G208700
PtunChr10G207680
PtunChr11G239890
PtunChr8G179000
PtunChr3G078100
PtunChr10G212180
PtunChr9G191360
0
10
20
30
40
50
60
70
Physical distance (Mb)
E Proximity permutation
Mean distance (Mb)
20
15
10
5
0
Random sets
Front 1
One-sided P = 0.8463
100,000 permutations
Sets of 10 among 123 retained loci
Observed mean: 18.47 Mb
Random-set mean: 12.97 Mb