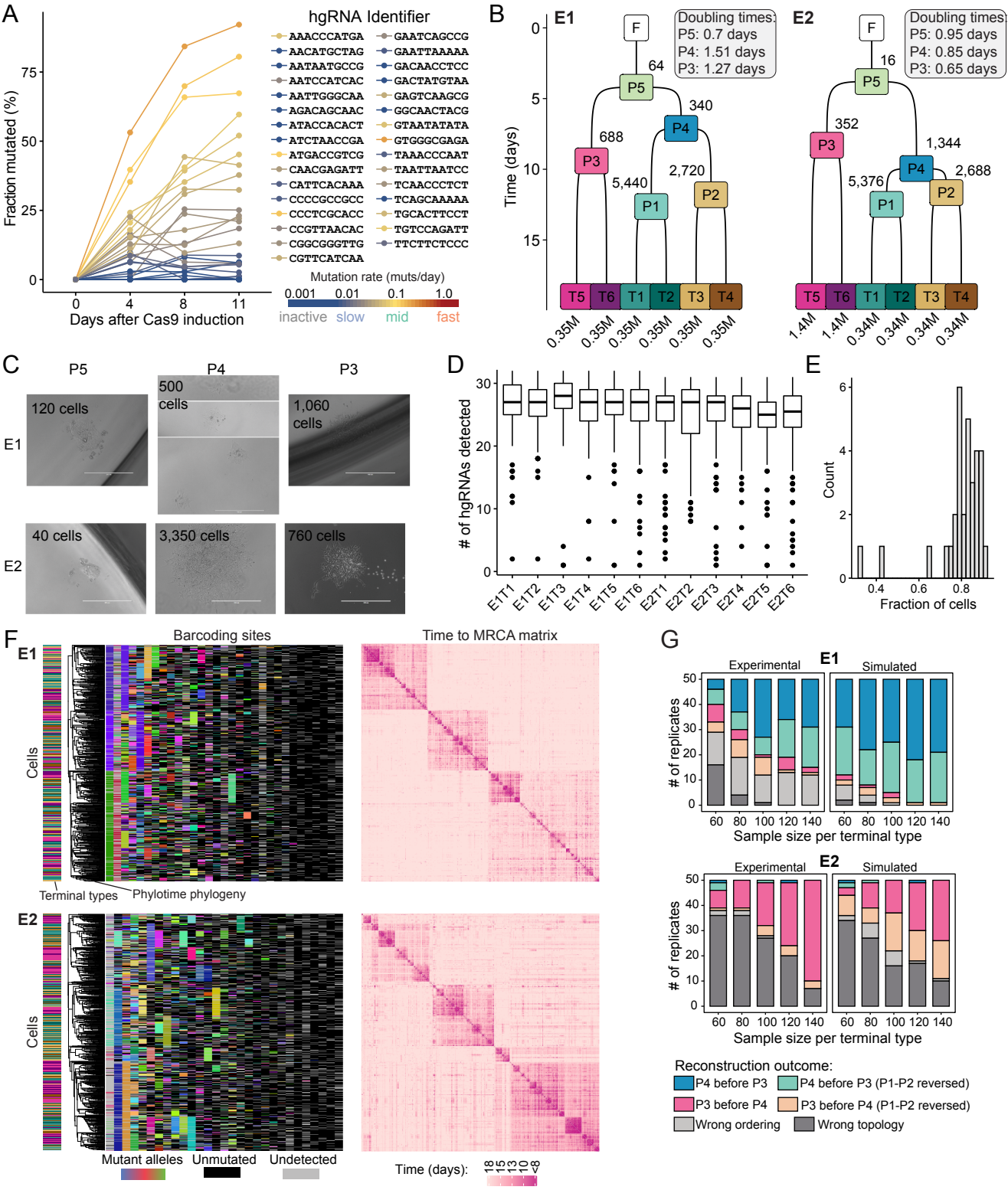
A
hgRNA Identifier
AAACCCATGA
AACATGCTAG
AATAATGCCG
AATCCATCAC
AATTGGGCAA
AGACAGCAAC
ATACCACACT
ATCTAACCGA
ATGACCGTCG
CAACGAGATT
CATTCACAAA
CCCCGCCGCC
CCCTCGCACC
CCGTTAACAC
CGGCGGGTTG
CGTTCATCAA
GAATCAGCCG
GAATTAAAAA
GACAACCTCC
GACTATGTAA
GAGTCAAGCG
GGCAACTACG
GTAATATATA
GTGGGCGAGA
TAAACCCAAT
TAATTAATCC
TCAACCCTCT
TCAGCAAAAA
TGCACTTCCT
TGTCCAGATT
TTCTTCTCCC
Fraction mutated (%)
Days after Cas9 induction
Mutation rate (muts/day)
0.001 0.01 0.1 1.0
inactive slow mid fast
B
E1
Doubling times:
P5: 0.7 days
P4: 1.51 days
P3: 1.27 days
E2
Doubling times:
P5: 0.95 days
P4: 0.85 days
P3: 0.65 days
Time (days)
F
P5
P4
P3
P2
P1
T5 T6 T1 T2 T3 T4
0.35M
1.4M
0.34M
C
P5
P4
P3
E1
E2
120 cells
500 cells
1,060 cells
40 cells
3,350 cells
760 cells
D
# of hgRNAs detected
E1T1 E1T2 E1T3 E1T4 E1T5 E1T6 E2T1 E2T2 E2T3 E2T4 E2T5 E2T6
E
Count
Fraction of cells
F
E1
Barcoding sites
Time to MRCA matrix
Cells
Terminal types
Phylotime phylogeny
E2
Mutant alleles
Unmutated
Undetected
Time (days):
G
E1
Experimental
Simulated
# of replicates
Sample size per terminal type
E2
Reconstruction outcome:
P4 before P3
P4 before P3 (P1-P2 reversed)
P3 before P4
P3 before P4 (P1-P2 reversed)
Wrong ordering
Wrong topology
H
Commitment time
P3 (E1)
P3 (E2)
P4 (E1)
P4 (E2)
Time (days)
Ground truth
Experiment
Simulation
Sample size per terminal type
I
Population size
Truth: 530
Truth: 380
Truth: 1625
Population size
Ground truth
Experiment
Simulation
Sample size per terminal type