a
CheA
P
CheY
P
CheZ
RFP
YFP
kinase on
FRET on
CheA
CheY
RFP
CheZ
YFP
kinase off
FRET off
b
CheZ-YFP
CheY-mRFP
c
intensity [photon/pxl]
300
100
150
100
50
RFP/YFP
0.5
0.4
0
500
1000
1500
2000
time (s)
d
WT
pSJAB
12
pSJAB109
pSJAB
106