Posterior probability distributions created by parameter estimation k_1 - Rate constant of O_2 reduction k_3 - Rate constant of cbb_3 reduction l_1 - Rate constant of NO reduction 0.0045 0.005 0.008 0.0040 0.007 0.004 0.0035 0.0060.0030 Probability Probability 0.005 0.003 0.0025 0.004 0.0020 0.002 0.003 0.0015 0.002 0.0010 0.001 0.001 0.0005 0.0000 0.000 0.000 320 $\mu M^{-1}s^{-1}$ $\mu M^{-1}s^{-1}$ $\mu M^{-1}s^{-1}$ m_1 - Rate constant of NO_2^- reduction - Rate constant of NorB reduction m_3 - Rate constant of AniA reduction 0.009 0.007 0.008 0.006 0.004 0.007 Probability 0.006 0.004 0.003 0.005 Probability Probability 0.003 0.004 0.003 0.002 0.002 0.002 0.001 0.001 0.001 0.000 0.0000.000 35 0.04 0.12 0.16 00 0.5 0.6 0.4 0.7 $\mu M^{-1}s^{-1}$ $\mu M^{-1}s^{-1}$ β - Rate constant of k_5 - Rate constant of cbb_3 denaturing passive diffusion of O_2 k_6 - Rate of cbb_3 recovery 0.010 0.006 0.008 0.007 0.005 0.008 0.006 Probability 900.0 900.0 0.004 Probability 0.005 0.003 0.004 0.003 0.002 0.0020.002 0.001 0.001 0.000 0.000 0.0000.000125 $\mu M^{-1} s^{-1}$ 0.000135 0.000140 0.000155 0.000130 0.000160 1400 1600 o.5 400 f - Rate constant of $\mu M^{-1}s^{-1}$ reduction of cytochromes g - Rate of electrons in y - Loss of NO 0.006 0.0030 0.005 0.005 0.00250.004 Probability 0.004 0.003 0.002 0.0020Probability 0.003 0.0015 0.002 0.0010 0.001 0.001 0.0005 0.0000 0.000 0.000 0.0024 0.12 0.0027 0.0023 0.0025 0:09 0.06 0.07 0.08 0.10 0.11 0.0021 0.7 0.8 09 $\mu M^{-1}s^{-1}$ μMs^{-1} Q - Quinone concentration X - Cytochrome concentration A - AniA concentration 0.005 0.006 0.00400.0035 0.005 0.004 0.0030 0.004Probability 0.0025 0.003 0.003 0.0020 0.002 0.0015 0.002 0.0010 0.001 0.001 0.00050.000 0.000 0.0000 5.0 5.5 3.5 4.5 35 45 50 20 0.2 20 0.4 0.6 30 μΜ μΜ μM C - cbb3 concentration B - NorB concentration 0.008 0.007 0.007 0.006 0.006 0.005 Probability 0.005 0.004 0.004 0.003 0.003

15

μΜ

20

0.002

0.001

0.000

Probability

Probability

0.002

0.001 0.000 ℃

20

 μM

12