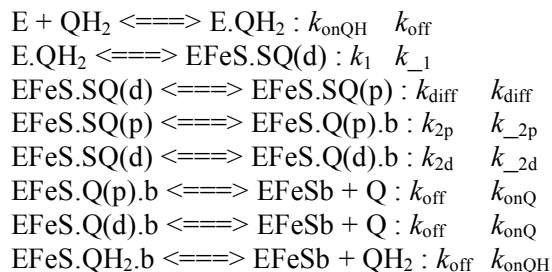


## SUPPLEMENTAL DATA

### DynaFit File

Model used for simulation of cytochrome *b* reduction and semiquinone concentration kinetics (Fig. 9) in a sequential mechanism of quinol oxidation involving a moving semiquinone (15).

#### REACTION MECHANISM



#### CONSTANTS

$k_{onQH} = 500$   
 $k_{off} = 5000$   
 $k_{onQ} = 50$   
 $k_{diff} =$  (varied between 100000000 and 1000000000000)  
 $k_1 = 1300$   
 $k_{-1} = 32500000000$   
 $k_{2d} = 90000000000$   
 $k_{-2d} = 3600$   
 $k_{2p} = 19000000$   
 $k_{-2p} = 0.76$

#### RESPONSES

$EFeS.Q(p).b = 1$   
 $EFeS.Q(d).b = 1$   
 $EFeSb = 1$   
 $EFeS.QH_2.b = 1$

#### PROGRESS

mesh from 0 to 0.01 step 0.00001  
monitor EFeS.SQ(d), EFeS.SQ(p)

concentration E = 1, QH<sub>2</sub> = 200