
Parameters Values from the Curve Fit.

c_1	$K_{d,f}$	Association of P53 and MDM_2	$9.20 \cdot 10^6$	$M^{-1}s^{-1}$
c_2	$K_{d,r}$	Dissociation of P53 and MDM_2	2.00	s^{-1}
c_3	ka_f	Association of LH_2 to NC Complex	$1.84 \cdot 10^8$	$M^{-1}s^{-1}$
c_4	ka_r	Dissociation of LH_2 from NC Complex	$3.00 \cdot 10^3$	s^{-1}
c_5	kl_f	Association of ATP to NC Complex	$3.00 \cdot 10^7$	$M^{-1}s^{-1}$
c_6	kl_r	Dissociation of ATP from NC Complex	$4.80 \cdot 10^3$	s^{-1}
c_7	kl_{f2}	Association of LH_2 to NFLuc	$1.84 \cdot 10^8$	$M^{-1}s^{-1}$
c_8	kl_{r2}	Dissociation of LH_2 from NFLuc	$5.05 \cdot 10^3$	s^{-1}
c_9	ka_{f2}	Association of ATP to NFLuc	$3.00 \cdot 10^7$	$M^{-1}s^{-1}$
c_{10}	ka_{r2}	Dissociation of ATP from NFLuc	$2.05 \cdot 10^4$	s^{-1}
c_{11}	k_{Af}	Adenylation rate, forward, NC complex	$5.01 \cdot 10^2$	s^{-1}
c_{12}	k_{Ar}	Adenylation rate, reverse, NC complex	$1.08 \cdot 10^{-2}$	s^{-1}
c_{13}	k_{Af2}	Adenylation rate, forward, NFLuc	$5.00 \cdot 10^{-2}$	s^{-1}
c_{14}	k_{Ar2}	Adenylation rate, reverse, NFLuc	$1.10 \cdot 10^{-2}$	s^{-1}
c_{15}	kI_f	Association of Intermediate, NC complex	$7.77 \cdot 10^7$	$M^{-1}s^{-1}$
c_{16}	kI_r	Dissociation of Intermediate, NC complex	3.47	s^{-1}
c_{17}	kI_{f2}	Association of Intermediate, NFLuc	$7.77 \cdot 10^7$	$M^{-1}s^{-1}$
c_{18}	kI_{r2}	Dissociation of Intermediate, NFLuc	3.47	s^{-1}
c_{19}	k_{cat}	Oxidation Rate, NC complex	$2.1 \cdot 10^{-1}$	s^{-1}
c_{20}	k_{cat2}	Oxidation Rate, NFLuc	$4.00 \cdot 10^{-7}$	s^{-1}
c_{21}	ki_f	Association of Oxyluciferin to NC Complex	$8.30 \cdot 10^6$	$M^{-1}s^{-1}$
c_{22}	ki_r	Dissociation of Oxyluciferin from NC Complex	$6.13 \cdot 10^{-1}$	s^{-1}
c_{23}	ki_{f2}^2	Association of L-AMP to NC Complex	$5.00 \cdot 10^7$	$M^{-1}s^{-1}$
c_{24}	ki_{r2}^2	Dissociation of L-AMP from NC Complex	$2.30 \cdot 10^{-5}$	s^{-1}
c_{25}	ki_{f2}	Association of Oxyluciferin to NFLuc	$8.30 \cdot 10^6$	$M^{-1}s^{-1}$
c_{26}	ki_{r2}	Dissociation of Oxyluciferin from NFLuc	$6.13 \cdot 10^{-1}$	s^{-1}
c_{27}	ki_{f2}^2	Association of L-AMP to NFLuc	$5.00 \cdot 10^7$	$M^{-1}s^{-1}$
c_{28}	ki_{r2}^2	Dissociation of L-AMP from NFLuc	$2.30 \cdot 10^{-5}$	s^{-1}
c_{29}		Dark Reaction Frequency	$2.87 \cdot 10^{-1}$	
c_{30}		Heat Degradation	$1.00 \cdot 10^{-3}$	s^{-1}