



Correction

Correction: Franz et al. Unraveling a Force-Generating Allosteric Pathway of Actomyosin Communication Associated with ADP and P_i Release. *Int. J. Mol. Sci.* 2021, 22, 104

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Table and Figure Legend

The author wishes to make the following correction to this paper [1]:

In the original article, there were following mistakes:

A common term was incorrectly used in the legend for Table 2. The incorrect parameters “Steady-state ATPase” should be replaced with “Steady-state ATPase Activity”. A parameter was incorrectly assigned in the legend for Table 4. The incorrect parameters “ $k'_{+5}/K'_5K'_6$ ” should be replaced with “ $k'_{+5}K'_5K'_6$ ”. Parameters were incorrectly assigned in the legend for Figure 5. The incorrect parameters “ $K'_5K'_6$ ” should be replaced with “ $1/(K'_5K'_6)$ ”. Parameters were incorrectly assigned in the legend for Figure 6. The incorrect parameters “ $K'_{DPA}k_{+4}$ ” should be replaced with “ $k_{+4}K'_{DPA}$ ”.

Error in Table

In the original article, there was a mistake in Table 3 as published. Rate and equilibrium constants, and corresponding values were incorrectly assigned. The corrected Table 3 appears below.

Table 3. Transient kinetic parameters and equilibrium constants in the absence of actin.

	Unit	M765 ^{wt}	M765 ^{AA}	M765 ^{GGG}
ATP binding to myosin ¹				
K_1k_{+2}	($\mu\text{M}^{-1}\text{s}^{-1}$)	0.48 ± 0.01	0.38 ± 0.01	0.38 ± 0.01
k_{-2}	(s^{-1})	0.79 ± 0.49	0.54 ± 0.24	0.43 ± 0.25
$k_{+3}+k_{-3}$	(s^{-1})	42 ± 1	61 ± 2	106 ± 8
ADP binding to myosin ¹				
$k_{-5}K_6$	($\mu\text{M}^{-1}\text{s}^{-1}$)	0.58 ± 0.02	0.38 ± 0.02	0.49 ± 0.01
k_{+5}	(s^{-1})	1.6 ± 0.1	1.8 ± 0.1	1.9 ± 0.1
$1/(K_5K_6)$	(μM)	2.8 ± 0.2	4.7 ± 0.4	3.9 ± 0.2
Rate of P_i release ¹				
k_{+4}	(s^{-1})	0.02 ± 0.01	n.d.	0.02 ± 0.01

¹ at 20 °C.

In the original article, there were mistakes in Tables 4 and 5 as published. Rate and equilibrium constants and a unit were incorrectly assigned. The corrected Tables 4 and 5 appear below.



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Table 4. Transient kinetic parameters and equilibrium constants in the presence of actin.

	Unit	M765 ^{wt}	M765 ^{AA}	M765 ^{GGG}
Actomyosin interactions in the absence and presence of ADP				
k'_{+A}	($\mu\text{M}^{-1}\text{s}^{-1}$)	0.64 ± 0.03	0.61 ± 0.03	0.61 ± 0.03
k'_{-A}	(s^{-1})	0.003	0.004	0.005
$1/K'_A$	(μM)	0.0057 ± 0.0005	0.010 ± 0.009	0.011 ± 0.009
k'_{+DA}	($\mu\text{M}^{-1}\text{s}^{-1}$)	0.12 ± 0.01	n.d.	0.18 ± 0.01
k'_{-DA}	(s^{-1})	0.006 ± 0.001	n.d.	0.005 ± 0.001
$1/K'_{DA}$	(μM)	0.063 ± 0.002	n.d.	0.024 ± 0.001
ATP interactions of actomyosin				
$K'_1 k'_{+2}$	($\mu\text{M}^{-1}\text{s}^{-1}$)	0.24 ± 0.01	0.32 ± 0.01	0.92 ± 0.01
k'_{+2}	(s^{-1})	719 ± 22	871 ± 80	923 ± 19
k'_{-2}	(s^{-1})	0.08 ± 0.05	0.62 ± 0.05	1.48 ± 0.13
$1/K'_1$	(μM)	3200 ± 130	2702 ± 279	883 ± 30
ADP interactions of actomyosin				
$k'_{-5} K'_6$	($\mu\text{M}^{-1}\text{s}^{-1}$)	$>1.0 / >0.74$	$>1.47 / >2.94$	$4.7 \pm 1 / 3.6 \pm 1$
$1/(K'_5 K'_6)$	(μM)	135 ± 10	34 ± 4	3.4 ± 1
k'_{+5}	(s^{-1})	>100	>100	16 ± 1
P_i kinetics of actomyosin				
k'_{+4}	(s^{-1})	3.8 ± 1.1	n.d.	14.4 ± 1.0
$k'_{+4} K'_{DPA}$	($\mu\text{M}^{-1}\text{s}^{-1}$)	0.04 ± 0.01	n.d.	0.79 ± 0.08
$1/K'_{DPA}$	(μM)	94 ± 32	n.d.	18 ± 3
Weak-to-strong transition				
$k'_{\text{weak-strong}}$	(s^{-1})	1.0 ± 0.01	n.d.	2.6 ± 0.04
Duty ratio				
$t_{\text{strong}}/t_{\text{total}}$	%	3 ± 1	$<4 \pm 1$	49 ± 4
Experimental	%	<1	n.d.	35

¹ Calculated: k'_{-A}/k'_{+A} ; ² calculated: k'_{-DA}/k'_{+DA} ; ³ calculated from $k'_{+5}K'_5K'_6$; ⁴ obtained from linear fit of k_{fast} of competitive ATP/ADP binding experiment with 25 μM ATP; ⁵ obtained from ADP-inhibition of ATP-induced dissociation; ⁶ obtained from hyperbolic fits of A_{slow} and A_{fast} (Figure 5g); ⁷ estimated from the rate of ADP inhibition of ATP-induced dissociation at excess ADP concentrations; ⁸ y-intercept of hyperbola in Figure 5i; n.d. not determined.

Table 5. Parameters used for the estimation of the fractional occupancies of intermediate states.

	Unit	M765 ^{wt}	M765 ^{AA}	M765 ^{GGG}
Equilibrium constants				
K'_{DPA}	(μM^{-1})	0.01	0.01	0.05
K'_4	(μM^{-1})	0.00001	0.00001	0.00001
K'_5	-	0.5	0.74	7.14
K'_6	(μM^{-1})	0.02	0.02	0.02
K'_1	(μM^{-1})	0.0003	0.004	0.001
K'_2	-	8988	1405	624
K'_{TA}	(μM^{-1})	0.001	0.001	0.001
K_3	-	9.5	9.2	9.6
K'_3	-	95	92	96
Rate constants of forward reactions				
k'_{+DPA}	($\mu\text{M}^{-1}\text{s}^{-1}$)	10	10	50
k'_{+4}	(s^{-1})	3.8	5.0	14.4
k'_{+5}	(s^{-1})	235	160	20
k'_{+6}	(s^{-1})	1000	1000	1000
k'_{+1}	($\mu\text{M}^{-1}\text{s}^{-1}$)	100	100	100
k'_{+2}	(s^{-1})	719	871	923
k'_{+TA}	(s^{-1})	1000	1000	1000
k_{+3}	(s^{-1})	38	55	96
k'_{+3}	(s^{-1})	38	55	96

Table 5. Cont.

	Unit	M765 ^{wt}	M765 ^{AA}	M765 ^{GGG}
Rate constants of backwards reactions				
k'_{-DPA}	(s ⁻¹)	1000	1000	1000
k'_{-4}	(μM ⁻¹ s ⁻¹)	0.000038	0.00005	0.000144
k'_{-5}	(s ⁻¹)	470	216	2.8
k'_{-6}	(μM ⁻¹ s ⁻¹)	20	20	20
k'_{-1}	(s ⁻¹)	333300	250000	88500
k'_{-2}	(s ⁻¹)	0.08	0.62	1.48
k'_{-TA}	(μM ⁻¹ s ⁻¹)	1	1	1
k_{-3}	(s ⁻¹)	4	6	10
k'_{-3}	(s ⁻¹)	0.4	0.6	1

Text Correction

There were following errors in the original article.

A correction has been made to 2. Results and Discussion:

1. Paragraph 8. The incorrect constants " $K'_5K'_6$ " should be replaced with " $1/(K'_5K'_6)$ ".
2. Paragraph 10. The incorrect constants " K'_{DPA} " should be replaced with " $1/K'_{DPA}$ ". The incorrect constants " $K'_{DPA}k'_{+4}$ " should be replaced with " $k'_{+4}K'_{DPA}$ ".
3. Paragraph 11. The incorrect constants " K'_{DPA} " should be replaced with " $1/K'_{DPA}$ ".

A correction has been made to 3. Conclusions, Paragraph 1. The incorrect constants " $K'_5K'_6$ " should be replaced with " $1/K'_5K'_6$ ".

The authors state that the scientific conclusions are unaffected. This correction was approved by the Academic Editor. The original publication has also been updated.

Reference

1. Franz, P.; Ewert, W.; Preller, M.; Tsiavaliaris, G. Unraveling a Force-Generating Allosteric Pathway of Actomyosin Communication Associated with ADP and Pi Release. *Int. J. Mol. Sci.* **2021**, *22*, 104. [[CrossRef](#)] [[PubMed](#)]