Vol. 159, No. 1, 1989 BIOCHEMICAL AND BIOPHYSICAL RESEARCH COMMUNICATIONS
February 28, 1989 Pages 368-371

ERRATA

Volume 152, Number 1, April 15, 1988

In "Kinetic Distinction Between Rapid-Equilibrium Random and Abortive Ordered Enzymatic Mechanisms Using Alternative Substrates or Kinetic Isotope Effects", by Cynthia A. Gates and Dexter B. Northrop, pages 406-410: the apparent V/K_a in Eq. 4 on page 408 should have been presented as an apparent K_a/V at high B (i.e. $[B] > K_b$), as follows:

$$\left[\frac{K_a}{V}\right]_{app} = \frac{K_a}{V} + \frac{K_a[B]}{VK_I} + \frac{K_{ia}K_b}{VK_I} \qquad (4)$$

Under steady-state conditions at "higher" B, V/K_a becomes:

$$\left[\frac{V}{K_a}\right]_{app} = \frac{VK_I}{K_a[B]} = \frac{k_1K_I}{[B]} \qquad (5)$$

Hence, this apparent V/K_a is independent of catalysis (k_5) as assumed throughout the rest of the paper.

But the object of the derivation was to define an apparent V/K_a under rapid-equilibrium conditions. The original Eq. 5 was erroneously attributed to a limit when $k_5 << k_4$, when in fact it was the limit when $k_5 >> k_4$, for $VK_I/K_{ia}K_b$ (1). The latter term is introduced into V/K_a under the rapid-equilibrium hypothesis, which in turn requires that k_5 be small relative to k_2 (2). Hence, we have a contradiction: k_5 cannot be "small" and "large" at the same time. To state the problem another way, the idea being put forth is that saturation with B drives $k_3[B]$ to infinity and traps A on the enzyme as (EA), such that the limiting V/K_a is determined only by kinetic events preceding (EA) in Scheme I. But the rapid-equilibrium assumption supposedly places (EA) in equilibrium with (E+A), based on a rate equa-

tion in which k_5 is driven towards zero. Algebraically, this generates $k_3[B]k_5$ terms which become a product of opposing limits (i.e. infinity times zero) when both assumptions are invoked.

The way out of this paradox is to start with apparent V/K_a in terms of all possible constituent rate constants before these are grouped into individual kinetic parameters and pared by restrictive assumptions. From net rate constant theory (3), apparent V/K_a of Scheme I can be written as:

$$\left[\frac{V}{K_a}\right]_{app} = \left[\frac{k_1k_3[B]k_5}{k_2(k_4+k_5) + k_3[B]k_5}\right]\left[\frac{1}{1 + [B]/K_I}\right] \qquad (6)$$

Obviously, at "higher" B, Eq. 6 approaches the same limit as Eq. 5 and the theory holds; the question is, how high is "higher" when slow catalysis qualifies for the rapid-equilibrium assumption? Given $K_b = (k_4+k_5)/k_3$ and assuming that $k_3[B]k_5$ must exceed $k_2(k_4+k_5)$ by ten fold in order to effectively eliminate k_5 from Eq. 6, then "higher" B is: $[B] > 10(K_bk_2/k_5)$. Hence, if catalysis is 100-fold less than the rate of dissociation of A, then the concentration of B must exceed 1000-times its Michaelis constant.

In some instances, such concentrations may not be attainable. Consequently, this method eliminates the rapid-equilibrium mechanism when values of V/K_a are identical at high B, but it does not eliminate the abortive-ordered mechanism when they are not.

REFERENCES

1. Segel, I. W., personal communication. We wish to thank Professor Segel for detecting the errors in our derivation and calling them to our attention.
2. Segel, I. H., (1975) "Enzyme Kinetics," John Wiley & Sons, New York, page 591
3. Cleland, W. W. (1975) Biochemistry 14, 3320-3324.

Volume 157, Number 1, November 30, 1988

In the article "Characterization of the Liver Mitochondrial Cytochrome P-450 Catalyzing the 26-Hydroxylation of 5β-Cholestane-3α, 7α, 12α-triol," by Helena Dahlbäck, pages 30-36:

On page 35, lines 5 and 6 contain two errors: Residue 9 is Gln not Glu and a residue Gly was omitted at position 14; thus Pro 14 becomes 15 and each residue beyond is increased by one. The correct N-terminal sequence amino acid is:

Ala-Leu-Pro-Ala-Asp-Glu-Ala-Ala-Gln-Ala-Pro-Gly-Ala-Gly-Pro-Gly-Asp-Arg-Gly-Gly-Val.

Volume 157, Number 2, December 15, 1988

In the article "Transcellular Conversion of Endogenous Arachidonic Acid to Lipoxins in Mixed Human Platelet-Granulocyte Suspensions," by Charlotte Edenius, Jesper Haeggström, and Jan Åke Lindgren, pages 801-807:

On page 804, the sentence beginning on line 14 should read: "The transformation of LTA_4 to lipoxins increased about five-fold in the presence of ionophore A23187. Thus, the amount of LXA_4 reached 228 ± 57 pmol/ml in the presence of ionophore A23187 (1 μM) as compared to 41 ± 16 pmol/ml in the absence of ionophore stimulation (mean ± SEM, $\underline{n} = 5$)."

Volume 157, Number 3, December 30, 1988

In the article "Inhibition of the Proteolysis of Rat Erythrocyte Membrane Proteins by a Synthetic Inhibitor of Calpain," by Shujaath Mehdi, Michael R. Angelastro, Jeffery S. Wiseman, and Philippe Bey, pages 1117-1123:

On page 1118, line 10 under Erythrocyte Membrane Protein Degradation should read "...5 mL of 5 mM sodium phosphate (pH 8.2) containing...," instead of "... 5 mL of 5mM sodium phosphate containing...." Lines 4 and 5 under Assays for Measuring Calpain Activity should read "... 100 mM MOPS (pH 7.5), 5 mM $CaCl_2$ ..." instead of "... 100 mM MOPS (pH 7.5), 100 mM $CaCl_2$ ...."

Volume 157, Number 3, December 30, 1988

In the article "The Presence of a Novel Cellular Retinoic Acid-Binding Protein in Chick Embryos: Purification and Partial Characterization," by Toshihiro Kitamoto, Takashi Momoi, and Mariko Momoi, pages 1302-1308:

In Fig. 3 on page 1306, the 10th residue of CRABP II (chick) was mistyped. The correct residue is K (Lys) and not R (Arg). The correct NH_2-terminal amino acid sequence of chick CRABP II is:

	10	20	30
CRABP II (chick)	PNFSGNWKMK	SSENFEELLK	ALGVNMMLRK IAVAAA