

Level 1, List B

**Additional information required for reporting enzyme kinetic data.
The information is required to allow a quality check on the data and
to ensure their value to others.**

<http://www.strenda.org/>

Version 1.5

Date: October, 9th, 2008

Information required	Comments
Required data for all enzyme functional data	
Number of independent experiments	Problems of reproducibility?
Indication of accuracy	<i>e.g. standard error of the mean, standard deviation, confidence limits, quartiles</i>
Specification whether relative to subunit or oligomeric form	
Data necessary for reporting kinetic parameters	Units necessary:
V_{\max}	V_{\max} given as units or katal, as defined in List 1A,
k_{cat}	V_{\max} may be divided by the specific activity units (moles per unit time per unit enzyme mass) of the enzyme to give k_{cat} , measured in s^{-1} or min^{-1}
k_{cat}/K_m	k_{cat}/K_m given as per time per concentration, <i>e.g. $\text{s}^{-1}.\text{mM}^{-1}$</i>
K_m	Units necessary
$S_{0.5}$	Both are concentrations, <i>e.g. mM</i>
Hill coefficient, saturation ratio (R_S) or other coefficients of cooperativity	
How was the given parameter obtained?	<i>e.g. non-linear curve fitting using least squares, non-parametric method such as direct linear plot, linear regression to transformed form of rate equation</i>
	Note: The use of linear transformations for determining Michaelis-Menten parameters is recognised to be inaccurate.
s/K_m range used	<i>e.g. 0.1 to 10</i>

Information required	Comments
Model used to determine the parameters	With explanation of why is the chosen model considered to be the “right” model
High-substrate inhibition, if observed, with K_I value	
Data required for reporting inhibition data	
Time-dependence and reversibility	With method described
For reversible inhibitors: type and K_I values	<i>With units and how values were determined</i> <i>e.g. competitive, uncompetitive, etc.,</i>
For tight-binding inhibitors: association/dissociation rates, <i>inhibition type and K_I values</i>	Units necessary
For irreversible inhibitors: type Appropriate kinetic parameters	<i>e.g., non-specific, mechanism-based, "suicide substrate".</i> There are too many alternative parameters to list here. The reference to a quite comprehensive source is recommended: Tipton, K.F. (2001). <i>Enzymes: Irreversible Inhibition</i> In: <i>Nature Encyclopedia of Life Sciences</i> . London. http://www.els.net/ [doi:10.1038/npg.els.0000601] .
	NOTE: IC_{50} values These have been used for both reversible or irreversible inhibition. However the use is not recommended because these values are without a consistent meaning. The relationship of these values to inhibition constants is analysed in detail e.g. by Cortes, A. <i>et al.</i> (2001) <i>Biochem. J.</i> 357 :263-268.
Data required for reporting activation data	Similar to the requirements for inhibition data
Additional material desirable	
Kinetic mechanism	<i>e.g. ordered bi-bi,</i>
Data for cooperative behaviour: model used	With equation given
Time-dependency of enzyme reactions	<i>e.g. Monod-Wyman-Changeux, etc.</i> i.e., duration of initial-rate conditions at defined substrate concentrations etc.
Example of at least one experiment together with raw data	