



SDI Review Form 1.6

PART 1:

Journal Name:	International Journal of Biochemistry Research & Review
Manuscript Number:	MS: 2012 IJBcRR 2639
Title of the Manuscript:	Activatory Effect of Germination on Catalytic Capacity of Urease Extracted from Beans Samples (Effect of Germination on the Kinetics of Urease from Beans)

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- This form has total 9 parts. Kindly note that you should use all the parts of this review form.



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PART 2: Review Comments

	Reviewer's comment	Author's comment <i>(if agreed with reviewer, correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)</i>
<u>Compulsory</u> REVISION comments	In this work, the authors subjected beans of seven leguminous species to germination. Next, the authors extracted urease from the beans, both prior to and during the germination, and determined the properties of the enzyme. This was done to see if and how the germination affects urease in different species. In that sense the article is valuable, however, in my opinion, in the present form the article does not qualify for publication. To be considered for publication the article would require thorough revision, effectively, writing it anew. Please see my general comments below. 1. A general presentation of the work as well as the language of the text, its style, grammar and syntax requires thorough improvement. 2. The authors obtained crude extracts of urease from the beans. Importantly, such samples can only be used to compare relative properties, such as those in pH and temperature profiles as well as Km. However, the activities (Vmax) of the samples derived from different sources cannot be compared, as the crude samples may contain different amounts of urease. 3. Several important experimental details are	



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	missing from the article: (i) the activity assay of urease! This should also include the reaction conditions (buffer, pH, temperature) and importantly, the reaction time and the units of urease activity; (ii) buffers used for pH and temperature measurements, their concentrations and pHs. 4. page 5 – It is not clear if optimum pH and temperature (Fig. 1 and 2) are those for pH- and temperature-activity profiles, or for pH- and temperature stabilities of the enzymes. 5. Kinetic parameters K_m and V_{max} – On page 5, the substrate concentrations that were used for these measurements are given to be 0.1-0.6 M. For such measurements, however, the substrate concentration should be in the range $0.1 K_m$-$10 K_m$, whereas the K_m values in Table 2 are less than 1 mM. Also, it is not clear what the concentration units were used in Fig. 4 (x-axis). Numerically, the substrate concentrations in Fig. 4.1 are between 0.1 and 0.4, and in Fig. 4.2, between 0.05 and 0.4. Please revise and make the data consistent. 6. Table 2 – As said in point 2 above, the V_{max} values of urease from different sources can be compared less than roughly. But more importantly, the K_m values listed are always lower than 1 mM, whereas ureases are known for having K_m typically in the millimolar range (ref. 22). This should be accounted for;	
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	perhaps buffer effects or temperature were involved in the values obtained. 7. Figures should be organized in a clear way, e.g. for one property, all the profiles for germinated urease in one figure and those for ungerminated in another one. Also, it would be advisable to have one graphical point reserved for a certain type of urease. 8. line 203 – Optimum temperatures, as presented in Fig. 2, are between 50-60 Celsius degrees. 9. For comparing the properties of ureases, apart from ref. 22 also use Krajewska B., Ureases. I. Functional, kinetic and catalytic properties: a review, J. Mol. Catal. B: Enzym., 59: 9-21, 2009. 10. Fig. 3 – This figure is not clear. What are the substrate units? Are these curves hyperboles of the Michaelis-Menten equation? 11. References should be presented in one format expected by the journal: article titles, journal titles should be given correctly (e.g. ref 1: Journal of the American Chemical Society; ref. 2: Journal of Biological Chemistry, etc). 12. These and other flaws of the article call for substantial revision.	
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Minor REVISION comments		
Optional/General comments		

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