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***Interactive comment on “Group additivity  
calculation of the standard molal thermodynamic  
properties of aqueous amino acids, polypeptides  
and unfolded proteins as a function of  
temperature, pressure and ionization state” by  
J. M. Dick et al.***

**J. Middelburg (Editor)**

J.Middelburg@nioo.knaw.nl

Received and published: 24 January 2006

Dear authors:

Your paper provides essential data for the calculation of amino acid and peptide properties in natural aquatic environments at wide ranges of temperature and pressure. This type of information is of the utmost importance for biogeoscientists and astrobiologists interest in the origin of life and the chemistry of biomolecules in hydrothermal environments. Biogeosciences is thus an appropriate outlet for this well-written, lasting

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contribution.

However:

(1) The majority of the audience may not be well aware of all the details of amino acids and peptides and I therefore advice you to add a section (and a figure) introducing and outlining the basic properties of amino acids, peptides and proteins.

(2) The linkage of your work with the interest of most biogeoscientists and astrobiologist could be improved. Please provide some more context in which you make a strong case for the relevance of your work for hydrothermal processes, the origin of life, stability of proteins in very acid/basic, hot or cold environments, etc. As also highlighted by referee # 3, some more information on the limitations of your results for natural, folded proteins would be welcome.

While reading your manuscript, I found a few additional minor things that need to be corrected before publication. p. 1518, l. 5: achieved not acheived.

p.1524, l. 23 & 26: should it not be alfa(<sup>0</sup>H<sub>2</sub>O?

p. 1532, l. 11: this calculation is outside

p. 1538, l. 11: substantially not substantially

p. 1541, l. 16: propagated not propgated

p. 1544, l. 10: remove E before 2000

p. 1546, l. 7: prevalent in different

p. 1546, l. 18: delete one of the the

p. 1548, footnote 2: update if possible.

p. 1562, l. 12: add brackets around (1958)

With best regards, Jack Middelburg

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