

The misuse of terms in scientific literature

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This letter concerns the recent article entitled 'Low-homology protein threading' published in Bioinformatics, vol. 26 ISMB2010, pp. i294–i300.

We would evidence that the term 'homology' has been misused, in the title and in the text. In particular, the abstract reports: '*A protein is low-homology if we cannot obtain sufficient amount of homologous information for it from existing protein sequence databases*'.

'Homology' has a well-defined meaning when referred to proteins: 'two homologous proteins have a common origin' (Reeck *et al.*, 1987), and so it is not possible to associate the term to an adjective as low or high, or indicate a degree of homology with a number, as an example a percentage value. The common origin exists or not. Moreover, it is not possible to apply this term to a single object, being referred to a quality which includes the existence of at least two homologous proteins.

One year ago, we published a letter (Marabotti and Facchiano, 2009) in which we underlined the persistent misuse of the term 'homology'. Twenty years after a debate hosted by the most prestigious scientific journals, the wrong usage of the term homology is very difficult to remove from the literature. However, a nice event occurred at the ISMB2009 Conference, where we presented a poster on this subject (poster Z18) and discussed this aspect with many interested people. One of them told us that, during the discussion following an oral presentation, a conference attendee suggested to the speaker to correct his misuse of 'homology', according to our

poster exposed at the conference. This suggested us that the bad habits can be corrected, when they are evidenced.

In bioinformatics area, researchers from different background are challenged to communicate by using a common language, to be generated by the integration of different background knowledge from biology and computer science. This language should be based on the correct usage of existing terms, as well as on the creation of neologisms just when needed. The bad usage of terms must be prevented to avoid that wrong meanings assimilated by researchers will generate a chaotic language not suitable for the real advance of knowledge.

For this reason, we hope that the most prestigious journals in the bioinformatics field will agree to engage this fight against bad habits in the use of scientific terminology. Therefore, we suggest that Authors should be asked to present articles that agree not only with general rules (molecule nomenclature, English language, reference formats) but also for the correctness in the usage of the term 'homology', and any other term for which public debates have evidenced a bad habit in their misuse. Only the observance of 'rules' can help to eradicate wrong habits, and this opportunity should be exploited by Bioinformatics to open the way toward a better quality scientific literature.

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