

A list of enzyme preparations covered by the term enzybiotics should not be restricted to bacteriophage-encoded peptidoglycan hydrolases (lysins)

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Sir,

Peptidoglycan (murein) hydrolases, hen egg-white lysozyme being a classical example, have long attracted the scientific community as a possible tool to combat infectious diseases (Biziulevičius et al 2007). As peptidoglycan hydrolases can be found in (and isolated from) almost any living form on the Earth, representing thus an inexhaustible source of natural antimicrobials, these enzymes have been intensively studied by numerous research groups around the world to find options for their medical application with rather good results. Several preparations of animal and bacterial origin, namely lysozyme, lysoamidase and lysosubtilin, have already been approved (the latter two approximately twenty years ago and lysozyme even earlier) for use in human or veterinary medicine and have been of great help in saving the lives of a large number of human beings as well as agricultural animals (see Skryabin & Kulaev 1990; Sava 1996; Biziulevičius & Žukaitė 1999 for more information); some other preparations like lysostaphin, a bacterial product with a forty-year long history of its biomedical use, and certain bacteriophage-encoded endolysins (lysins) are expected to be authorized within the next few years (Hermoso et al 2007; Oluola et al 2007).

While turning attention to today's situation with the most prospective enzymatic antimicrobials, we would like to highlight the use (or more aptly, the misuse) of the term enzybiotic. Enzybiotic, a hybrid word from enzyme and antibiotic, was introduced into scientific language (in 2001) by Dr Vincent Fischetti's group at the Rockefeller University, New York (Nelson et al 2001); Dr Fischetti is also co-founder (in 2002) of Enzybiotics (Inc), a privately held biopharmaceutical company that is developing an answer to the critical issue of antibiotic resistance, and is chairman of its Scientific Advisory Board. According to the godfathers of the term, as well as to the authors of the most recent review articles on the topic (Borysowski et al 2006; Hermoso et al 2007; Veiga-Crespo et al 2007), the term enzybiotic refers only/mainly to phages (phage lysins).

While bearing in mind the above said on lysozyme, lysoamidase, lysosubtilin and lysostaphin, as well as taking into account a suggestion expressed in the most recent review on enzybiotics (Veiga-Crespo et al 2007) that the term enzybiotics should also include fungal cell-wall-degrading enzymes, like glucanases and chitinases, we propose that a list of enzyme preparations covered by this term should be expanded to include any medically important microbial (bacterial, fungal or both) cell-wall-degrading (lytic) enzyme preparation irrespectively of its origin (animal, plant, bacterial, fungal or phage). This might give us all an opportunity to speak on various subjects relating to enzymatic antimicrobials in the same language (and the right to be heard).

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