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Dr. Leslie Yañez Gonzalez
Vice-Rector for Research
and Postgraduate Studies
University of Habana – Cuba

February 12, 2012

Re: Nominating Dr. Vicente Verez Bencomo for the “2012 Prince of Asturias Award”

Dear Dr. Gonzalez:

It is my great pleasure to write this letter in strong support of nominating Dr. Vicente Verez Bencomo for the “2012 Prince of Asturias Award” based upon his great contributions to the field of carbohydrate research, in particular, his contributions to the area of carbohydrate-based vaccine development.

I am currently Professor of Chemistry at Wayne State University, USA. My research interests are focused on carbohydrate chemistry, glycobiology, and carbohydrate-based vaccine development. I have more about 20 years of experience in the specified field, with more than 100 publications and several vaccine patents. I am the coauthor of a book entitled “Carbohydrate-Based Vaccines and Immunotherapies” (Wiley), and I am currently the Editor-in-Chief of *Journal of Carbohydrate Chemistry*. I am also the recipient of several national and international awards, such as Young Investigator Award of Carbohydrate Division, American Chemical Society, and so on. I have regularly served on a number of award and grant review panels. Therefore, I consider myself qualified to comment on Dr. Bencomo’s scientific achievements.

One of the most important contributions that Dr. Bencomo has made to science is in the area of carbohydrate-based vaccine development. Carbohydrates are abundantly expressed by various cells, such as bacterial and cancer cells, and are exposed on the cell surface. Therefore, they are ideal antigens for the development of preventive and therapeutic vaccines. However, a major problem associated with carbohydrate antigens is that they are poorly immunogenic, which has significantly hindered the progress in this area. One of Dr. Bencomo’s research projects aims to overcome the problem and develop functional vaccines against bacteria. His strategy to achieve this goal is to chemically synthesize well-defined bacterial carbohydrate antigens equipped with proper functionalities and then link these antigens to immunologically active proteins through the reactive functional groups to generate glycoprotein conjugates, which have much improved immunological activities. This strategy turned out to be very successful, with the development of a clinically useful vaccine against an important human pathogen *Haemophilus influenzae* type b. This represents the first semi-synthetic glycoconjugate vaccine that was practically useful in clinic. His research paper published in *Science* magazine, which described the novel type of

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vaccine, gained significant attention from the scientific community. Thus, this work is not only significant to a specific pathogen or disease but also has a great impact on the whole area of vaccine development.

In the process of preparing carbohydrate antigens and developing carbohydrate-based vaccines, Dr. Bencomo has also contributed significantly to the discovery of new synthetic methods, thus to the advancement of carbohydrate research in many other aspects.

In conclusion, Dr. Bencomo has made great contributions to carbohydrate research from theory to application. His work has not only significantly advanced and promoted glycoscience but also significantly influenced vaccine development against bacteria and other pathogens, thus it has already and will continue to have a great impact on human well-being in general. I believe that Dr. Bencomo is a very strong candidate for the "2012 Prince of Asturias Award", based on his scientific contributions.

Thank you for your time and consideration. If you need more information, please feel free to contact me.

Sincerely,



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