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Recent advances in high throughput screening methods for formulation development of vaccines

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A major challenge in the formulation of vaccine products is the identification of optimal conditions for long term storage. This is a difficult and time-consuming process, mainly due to the complexity of macromolecular structure and the very specific physical and chemical properties involved. Ideally, a formulation should maintain its physicochemical stability and biological potency for several years. To achieve this, a large number of variables may be examined during preformulation development in an effort to identify optimal pH, buffer ingredients, ionic strength and excipients. High throughput screening is an approach that has been used with some success for the identification of conditions that maximize the stability of biopharmaceutical products. Several reports have described the use of multi-well based instruments that permit the measurement of biophysical properties of the macromolecule under investigation when perturbed by temperature or other stress conditions. This presentation will highlight some recent developments on high throughput screening technologies that may be used in formulation development. In particular, the talk will be focused on the use of biochemical and biophysical techniques to monitor the effects of multiple formulation conditions. Examples will be presented of the use of fluorescence spectroscopy for the analysis of physical stability of antigens in the presence of mineral adjuvants.

Biography

Dr. Ausar has completed his Ph.D in Biochemistry from Catholic University of Cordoba, Argentina and Postdoctoral studies from University of Kansas. He is Senior Scientist in the Formulation and Stability Department at Sanofi Pasteur, Toronto Canada. He is author of more than 30 scientific papers, book chapters and patents.