

USP Views Early Broad Stakeholder Engagement as Essential in Developing Performance-Based Standards for Biologics

The U.S. Pharmacopeia (USP) views expanded early engagement with key stakeholders through workshops, roundtable meetings/studies, and Pharmacopeial Forum (PF) Stimuli articles as an essential component in advancing performance-based standards for biologic products.

USP is making clear that a collaborative approach is needed to determine where its contribution will be most valuable and to develop the biological standards that are prioritized.

At a Pharmacopeial Interest Group (PIG) meeting held at the 2019 PDA/FDA conference in mid-September in Washington, D.C., USP Global Biologics VP Fouad Atouf shed considerable light on the evolution of USP's traditional standard-setting process to better support the manufacturing, evaluation, and control needs of the new generation of biologics.

With more than a decade of experience at USP, Atouf now leads the scientific activities of the pharmacopeia related to the development of documentary and reference standards for biologics and antibiotics – overseeing the laboratory engagement at both the US and India sites. Prior to joining USP, he worked at NIH researching cell-based therapies for diabetes. He holds a PhD in cell biology from the Pierre and Marie Curie University in Paris.

Moderating the session was Biogen Regulatory Intelligence & Pharmacopoeial Affairs Head Janeen Skutnik-Wilkinson, who co-chairs the PDA PIG. During her pharmaceutical career, she has been actively involved in excipient compendial affairs, in particular and has played a leadership role in the International Pharmaceutical Excipients Council (IPEC).

From Recipes to Method and Process Performance

Fouad began his presentation on USP's biological product standard-setting strategy by explaining how the compendia has evolved from “a book of pharmacopeial recipes, where the recipes describe how you make a pharmaceutical preparation,” to providing “descriptions of sophisticated procedures that are used to address quality attributes of specific products.”

He discussed USP's engagement with six prominent biologics – insulin, somatropin, filgrastim, interferon, monoclonal antibodies, and CD34 stem cells – to show how standards-setting has been evolving toward the performance approach as the products get more complex.

“Instead of looking at a standard that allows the user to demonstrate that they meet market specifications,” USP needed to “start looking at standards that allow the user to demonstrate method and process performance,” Atouf explained.

The strategy to evolve from a monograph approach to more broadly applicable standards across the product/process/analytics lifecycle for biologics was recognized in a resolution passed at USP's 2015 convention. It called for a paradigm shift that would best facilitate innovation and availability and serve USP's public health mission.

Atouf pointed to some of the technologies and assays that have been identified as potential standards priorities through the extended dialogue that has been taking place with stakeholders globally.

He provided examples of standards now under collaborative development in the broader biologics arena in areas including visible particles, higher order structure, and trace metals. Areas under consideration in the cell and gene therapy arena, in particular, include vector copy number for lentivirus, and mRNA and AAV measurement.

Atouf concluded with an explanation of where the opportunities for stakeholder engagement and collaboration with USP in biologics standard setting are most compelling.

The overall strategy, he stressed, needs to keep “a good balance” between supporting the needs of the existing biological products – the peptides, proteins, and vaccines – while helping advance the development of the new therapies.

On November 4-5, USP will be holding a workshop on the advancing field of peptides and oligos at its Rockville, MD, headquarters. The workshop will begin with a session on the regulatory challenges that will include presentations by three FDA experts. Further sessions will explore the analytical/control and impurities/immunogenicity challenges and advances across the peptide/oligo product landscape.

USP is Actively Engaged in Global Dialogue

During the Q&A that followed, Atouf had the opportunity to comment further on: ● USP's global engagement ● how industry can collaborate with USP ● analytical quality-by-design (AQbD), and ● raw materials.

In opening up the floor to questions, moderator Skutnik-Wilkinson praised USP for the flexibility it is showing in addressing industry's needs. Noting that its progressive approach is not the norm around the world, she asked what USP is doing “to help bring everybody into the 21st century of standards for biologics.”

Atouf explained that, along with encouraging broad stakeholder engagement, USP is actively engaged in the global dialogue with the Pharmacopoeial Discussion Group (PDG), and on best practices with the World Health Organization (WHO), as well as in ongoing bilateral collaboration and studies with other pharmacopoeias.

In response to a follow-up query, he explained how USP is engaging with others around a framework for elemental impurities for advanced biologics and cell culture media, in particular.

In response to a question from moderator Skutnik-Wilkinson on how industry can be most helpful to USP in its biologics mission, Atouf noted the challenges in making the paradigm shift from product-specific to more broadly applicable standards – stressing again the strong need for information, expertise, and lab resource sharing to expedite the transition.

PDA Scientific and Regulatory Affairs VP Tina Morris, a former leader in USP's biologics efforts, referenced a current proposal at the British Pharmacopoeia (BP) on pursuing compendial standards for AQBd and asked about USP collaboration in that area. Atouf explained that USP does have an Expert Committee engaged with the topic and that it is part of the ongoing dialogue with BP and other pharmacopeias as well as industry.

To the last question on how USP's engagement with raw materials for biologics is evolving, Atouf explained the opportunities the pharmacopeia is exploring, which extend beyond putting "a standard in the book and a reference standard in the catalogue" to helping stakeholders in raw material "capacity building."

[Included in the IPQ story, available to subscribers at IPQpubs.com, is the full presentation by Atouf as well as the Q&A that followed at the PDA/FDA session. For more information on IPQ and how to gain access, visit the IPQ website or contact Peter Blachly (peter@IPQpubs.com).]



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