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ASIA EDITION

Driving Asiaâ??s Bioprocessing Future Through Localised Downstream Innovation

May 8, 2026 | News | By Ankit Kankar | ankit.kankar@mmactiv.com

Jessay Devassy, Global R&D Director at Ecolab , discusses how the companyâ??s Korea Bioprocessing Applications Lab is helping biopharma companies across Asia accelerate purification development, improve manufacturing efficiency, and build globally aligned, regulatory ready processes.



As Asia's biologics ecosystem continues to scale rapidly across monoclonal antibodies, biosimilars, and advanced therapies, downstream process optimisation is becoming central to manufacturing competitiveness. To address this shift, Ecolab has expanded its global Bioprocessing Applications Lab network with a new facility in Korea, designed to bring purification expertise and process development support closer to regional customers. **In this exclusive interview with BioSpectrum Asia, Jessay Devassy** shares insights into how localised resin screening, globally standardised development methods, and collaborative process optimisation are helping Asian biopharma companies reduce development timelines, improve scalability, and strengthen regulatory preparedness for global markets

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How does the Korea Bioprocessing Applications Lab specifically reduce development timelines compared to relying on facilities in the US or UK?

Ecolab's Bioprocessing Applications Lab (BPAL) in Korea expands our global network, bringing downstream development support closer to customers across Asia. Our newest BPAL provides convenient local access, accelerating regional timelines by helping minimize transportation schedules, while further building Ecolab's global network.

With local access, customers can run studies during similar time zones; from early-stage resin screening through scale-down studies designed to replicate commercial manufacturing conditions.

BPAL Korea is fully integrated into a global BPAL network spanning the US, UK, and Asia, using standardized methods so programs can keep moving with continuity and consistency. This offers faster iterations, fewer pauses, and quicker decisions on the purification strategy, while still generating structured work and regulatory-ready data that product teams need as they prepare for scale-up.

What measurable improvements in yield, productivity, or cost efficiency have early customers observed through local resin screening and purification studies?

BPAL Korea is an extension of an established global network, and the advancements delivered locally are grounded in what customers have already achieved through BPAL programs in the US and UK.

Across Ecolab's global BPAL network, customers see measurable improvements earlier in development, particularly through structured resin screening and purification optimization. High-throughput screening allows teams to evaluate multiple resins and process conditions quickly, helping them identify the most productive purification strategy upfront rather than carrying suboptimal choices forward.

From a yield and productivity perspective, this early optimization is critical. By deliberately designing chromatography steps early on, customers reduce late-stage rework and achieve more consistent performance as processes move toward scale-up. In practice, this often translates into robust unit operations aimed at maximizing drug intermediate recovery and tighter process control.

Cost efficiency follows naturally from those improvements. BPAL studies include resin comparisons, lifetime studies, and cost-modelling analyses that look beyond the lab bench and consider real manufacturing conditions. This helps teams balance productivity, resin utilization, and operating parameters to reduce overall cost of goods without compromising product quality.

With BPAL Korea, customers in Asia can more easily access the proven approaches and processes established in the US and UK, locally. This enables standardized methods, aligned data, and the global BPAL expertise to be delivered closer to their development and manufacturing teams.

How is Ecolab tailoring its Purolite resin portfolio to meet the evolving needs of biosimilars and monoclonal antibody pipelines in Asia?

Asia's biologics pipeline is expanding at pace, driven by sustained growth in both monoclonal antibodies (mAbs) and biosimilars. Industry analysts indicate Asia-Pacific is one of the fastest-growing mAb regions globally. At the same time, the biosimilars market in Asia is scaling rapidly, driven by patent expirations of leading mAbs, pricing pressures, and government efforts to improve access to advanced therapies.

This growth is helping redefine development success in Asia, with many programs advancing rapidly toward late-stage development and commercial manufacturing; particularly in biosimilars, where downstream efficiency, consistency, and cost control are critical to competitiveness.

As a result, resin selection and purification strategy are increasingly tied to long-term manufacturing outcomes rather than short-term lab performance. Developers need purification platforms that scale predictably, maintain performance across batches, and support sustainable cost structures.

BPAL Korea supports customers by enabling local, data-driven optimization of Purolite™ resins in the context of these real manufacturing demands. The BPAL approach reflects the realities of today's Asian biologics market, where speed to scale, reproducibility, and cost efficiency are as critical as scientific performance.

In what ways does the new facility support regulatory alignment across diverse markets such as Korea, Japan, India, and China?

Biopharma companies operating in Asia today are navigating a more complex regulatory landscape than ever before. While requirements still vary by country, there is a clear regional trend toward greater regulatory maturity, increased scrutiny of manufacturing data, and closer alignment with global standards.

Regulatory authorities across markets such as Korea, Japan, China, and India have been steadily raising expectations around process understanding, data transparency, and lifecycle management for biologics and biosimilars. At the same time, regional agencies are increasingly participating in reliance and harmonization efforts, meaning development data is more routinely reviewed across borders rather than in isolation.

That puts pressure on development teams to generate purification data that is not only locally relevant but robust, traceable, and consistent.

BPAL Korea is designed to support that need through globally aligned development methods rather than country-specific approaches. Studies are run using standardized protocols and data-capture approaches that are consistent with the wider BPAL network, helping customers build development packages that are repeatable across regions.

Equally important is transparency. As a strategic co-development partner, supporting bioprocessing innovation and the next generation of molecule development, BPAL operates with full visibility into study design, execution, and raw data. This approach provides customers with increased confidence and regulatory-ready data to support the kind of process understanding that regulators are increasingly asking for as molecules move toward GMP.

How do you see demand for downstream process optimization evolving in APAC over the next three to five years, particularly with the rise of advanced biologics?

Over the next three to five years, demand for downstream process optimization in Asia-Pacific is set to increase materially, driven by both pipeline expansion and manufacturing scale-up. One important shift is where development programs are maturing. Asia now accounts for a significant share of global pipeline growth, particularly in oncology, immunology, and biosimilars.

As a result, downstream processing is becoming a critical priority rather than a late-stage consideration.

Cost pressure is another key factor. In biosimilars especially, margin structures demand highly efficient, repeatable purification processes. That is driving earlier focus on resin performance, lifetime, and process robustness, rather than optimization being deferred until after tech transfer.

Taken together, these trends point to a clear shift in APAC: downstream optimization is moving upstream in importance, becoming a strategic lever for speed, scalability, and cost control as the region's biopharmaceutical sector continues to mature.

What role will this lab play in enabling closer collaboration between global biopharma companies and emerging regional players?

Feedback from global biopharma customers that already operate in Korea and across Asia is consistent. Many are developing and manufacturing in the region but, until recently, have relied heavily on technical support and development work done elsewhere. That distance can slow decision-making and increase complexity when global and regional teams collaborate.

BPAL Korea is intended to help close that gap. By providing local access to downstream development support that is aligned with global methods, the lab allows teams in Asia to engage more directly in process development while staying connected to global manufacturing and quality strategies.

For global companies, that means regional teams can participate earlier and more meaningfully in purification studies rather than receiving handoffs later in the process. For emerging regional players and CDMOs, it provides access to structured development approaches that are already familiar to global partners, helping align expectations from the outset.

Just as important is how the work is done. Customers value transparency and the ability to work collaboratively with scientists who understand both local manufacturing realities and global requirements. BPAL operates as a shared development environment, where data, methods, and decision-making are visible across teams rather than confined to a single site.

The role of the BPAL in Korea is not to replace global centers, but to enable smoother collaboration between regional execution and global oversight. That helps reduce friction, shorten feedback loops, and support a more integrated approach to development as biopharma activity in Asia continues to grow.