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BIO Asiaâ??Taiwan 2026 Day 3 Round-Up: Biotechâ??s Next Great Race Begins Where Discovery Ends

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From in vivo CAR-T and supply-chain resilience to exosome standards, multi-omics and digital health, the closing conference programme delivered a revealing message: biotechâ??s next competitive frontier lies not in discovering more, but in manufacturing, regulating, measuring and delivering innovation at scale.



On Wednesday the keynote argued that when AI compresses discovery, the constraint simply relocates: to manufacturing, capital, regulation, talent, clinical capacity. On Friday the programme read that list back, one session at a time, and never mentioned the keynote once.

The conference programme closed today, three days inside a five-day event, while the exhibition keeps trading until Sunday. Closing days are usually where the weak sessions go, the ones nobody scheduled against a plenary. This one was not that. Read end to end, the Innovation Forum's final track was the most quietly consequential day of the week, and it made its argument entirely by omission.

Here is the omission. Across five sessions and roughly eight hours, from CAR-T at nine in the morning to digital health at half past five, there was not one session about finding a drug. No target discovery. No molecular design. No AI-for-chemistry showcase. Day 1 had those in abundance. Day 3 had manufacturing, supply chain, standards, measurement and delivery.

That is not a gap in the programme. That is the programme telling you where the industry now thinks the difficulty lives.

Five sessions, eight hours, and not one of them about discovering anything. The hard part has moved, and the agenda knows it.

DAY 3 · WHAT THE PROGRAMME LEAVES OUT

09:00 · A-8 Reinventing the living drug

The day opened with Advancing Next Generation CAR-T Therapeutics, chaired by **Tsai-Kun Li**, president of the Development Center for Biotechnology, and it took about fifteen minutes to reveal that the session was not really about CAR-T at all. It was about manufacturing, wearing a lab coat.

Look at the two bookend talks. **Wei-Tien Tai**, research fellow at DCB's Institute of Biologics, presented on non-viral and viral platforms for *in vivo* CAR-T engineering. **Chien-Tsun Kuan**, president, chief executive and co-founder of **ARCE Therapeutics**, presented a targeted lentiviral platform for next-generation *in vivo* CAR therapies. Two of the session's three scientific talks, from a government-linked research centre and a domestic startup respectively, were arguing the same thing: stop taking the cells out.

It is worth spelling out why that matters, because the phrase *in vivo CAR-T* does not communicate its own significance. Conventional CAR-T is a manufacturing process disguised as a medicine. You collect a patient's T cells, ship them to a facility, engineer them, expand them, test them, ship them back, and infuse them, and the patient waits weeks while this happens and somebody pays a sum that starts with a four and has five digits behind it. The biology has been remarkable and the logistics have been the reason it has not reached the people who need it.

In vivo CAR-T proposes to delete that entire chain. Inject a vector that finds T cells inside the patient and engineers them where they already are. No apheresis, no cold chain, no bespoke batch, no wait. If it works, it converts the most operationally punishing therapy in oncology into something closer to an infusion.

WHY THIS SESSION WAS A MANUFACTURING SESSION

The scientific claim of in vivo CAR-T is modest: the same receptor, on the same cells, doing the same job. The industrial claim is enormous: it removes the per-patient factory. That is why a national research centre and a startup both showed up with a version of it, and why this belonged at the top of a day about bottlenecks.

Between them sat **Adam Mendizabal**, senior vice president and global head of haematology, oncology and cell and gene therapy at **The Emmes Group**, whose subject was advancements in CAR-T including innovative clinical trial methodology to rapidly deploy CAR-T trials. The placement is the tell again. Flanked by two platform talks, the middle slot went not to more biology but to the machinery of testing it. A field that has decided its bottleneck is deployment puts a trials methodologist in the centre of its session.

That choice is less obvious than it looks. Cell therapy trials are structurally awkward: small populations, heterogeneous products, a manufacturing step that varies per patient, and endpoints that arrive slowly. Conventional trial design assumes a stable product given to many people. CAR-T violates that assumption at the root, and the field has spent years discovering that its regulatory and statistical machinery was built for pills. A session that gives a fifth of its running time to how you actually run the trial is a session that has stopped treating clinical development as an administrative afterthought.

The composition is worth noting too. The **Development Center for Biotechnology** is Taiwan's state-linked applied research organisation, the institution that exists precisely to carry science from laboratory to industry, and it both chaired this session and presented in it. Alongside it, a domestic startup and an international CRO. That is a national translation apparatus and its commercial counterparts in one room, arguing about the same platform, which is roughly what an ecosystem is supposed to look like from the inside.

The honest caveat, which the panel that followed was well positioned to explore, is that in vivo CAR-T does not abolish manufacturing. It moves it. The per-patient cell factory is replaced by a vector factory, and a targeted lentiviral vector at population scale is its own formidable industrial problem, with its own purity, potency and comparability questions. The bottleneck does not vanish. It becomes somebody else's, and it becomes a problem of chemistry, manufacturing and controls rather than logistics.

In vivo CAR-T does not remove the factory. It relocates it, from the patient's side to the vector supplier's, and that is a trade the region should want.

A-8 · THE MANUFACTURING ARGUMENT UNDERNEATH THE SCIENCE

For Taiwan, that trade is the interesting part. A per-patient cell manufacturing model rewards proximity to hospitals. A vector manufacturing model rewards process engineering, yield discipline and quality systems at scale. It does not take much imagination to see which of those two an island built on semiconductor manufacturing would rather compete in.

10:50 · A-9 Ninety minutes, no slides

Session A-9 was Supply Chain, and its format was its content: ninety minutes, one panel, no presentations at all.

Yingming Yue, senior advisor to the **Taiwan CDMO Alliance** and president of Solvanta Advisory Group, moderated a bench of **Neeraj Shah** of Boston Insights, **Larry Yu** of Advanced Clinical Trial Supply, **Elizabeth Lomax** of Lomax Associates, **Frank Binder** of Global Supply Chain Advisors and **Vivian Liao**, general manager of Research and Development Solutions at **IQVIA Taiwan**.

Notice what that bench is made of. Not manufacturers. Advisors, consultants and service providers, four of the five running their own firms, one from the largest clinical research organisation in the world. This was not a session where companies described their capacity. It was a session where the people who diagnose supply chains for a living talked about what breaks.

READ THE FORMAT

A ninety-minute pure panel with no presentations is a deliberate choice. Slides are for announcements. Panels are for problems. Somebody decided this topic was better served by argument than by capability decks, and on a day about bottlenecks that was the right call.

Supply chain has had an unusual week. It opened the conference on Wednesday as a plenary subject, framed as Medicine Resilience across global and local perspectives, which is a way of saying geopolitics. It closed the conference on Friday as a working panel with clinical trial supply and CDMO practitioners, which is a way of saying logistics. The distance between those two framings is the whole difficulty of the topic. Resilience is discussed at the level of nations and executed at the level of a shipment of comparator drug arriving at a site in the right temperature range.

The presence of the Taiwan CDMO Alliance in the moderator's chair deserves noting on an island whose contract manufacturing ambitions run through every other session this week. An alliance that convenes the diagnosis rather than delivering the sales pitch is behaving like a mature trade body.

There is a strategic reading available here that nobody on the panel had any reason to state. Taiwan's CDMO ambition is, in commercial terms, a bet that global pharma will keep distributing its manufacturing and clinical supply across more jurisdictions rather than fewer. Every argument for supply chain resilience is therefore also an argument for Taiwanese capacity, and every argument for consolidation and reshoring is an argument against it. A trade body that spends ninety minutes hosting an unsentimental discussion of what actually breaks, rather than a showcase of what its members can build, is one that understands its customers are buying reliability rather than enthusiasm.

It is also the only session of the day with no Taiwanese company presenting a capability, which on a day otherwise thick with domestic institutions is either an oversight or a deliberate piece of restraint. Given the rest of the programme's discipline, restraint seems the better bet.

12:40 · A-10 The regulator sat down

If you read this publication's Day 2 round-up, you know the question this session answers.

On Thursday, Room 402AB hosted a Nobel laureate on the cell biology of vesicle traffic in the morning and, six hours later, a cosmetics industry strategy session on exosome skincare in the same room. We asked, in print, whether the discipline of the morning could hold the afternoon to its standards, and whether the Taiwan Exosome Industry Cluster Directory would carry evidence standards as a condition of entry or simply become a list.

Session A-10, From Cell Therapy to Cell-Free Regenerative Medicine, is the closest thing to an answer the week has produced, and the answer is more encouraging than the question deserved.

We asked on Thursday whether anyone would referee the exosome field. On Friday the ministry opened the session, the national lab presented the standards, and the regulator took a seat on the panel.

A-10 · THE ANSWER TO ROOM 402AB

Before the speakers, though, consider the title, because it contains an admission that the field rarely makes this plainly. *From* cell therapy *to* cell-free regenerative medicine. That preposition is carrying a decade of disappointment.

Mesenchymal stromal cell therapy was, for years, one of the most invested and most oversold ideas in regenerative medicine. Thousands of trials, an enormous commercial apparatus, and a clinical record that has been, to put it charitably, inconsistent. The intellectual escape route from that impasse was the observation that the transplanted cells frequently did not engraft, did not persist, and did not become the tissue they were supposed to become, and yet something occasionally happened anyway. The explanation that survived is paracrine: the cells were not rebuilding anything, they were signalling, and the signal travelled in vesicles.

If that is right, then the cell was never the medicine. The secretome was. And a vesicle has properties a living cell can only envy in a manufacturing context: it can be characterised, filtered, potentially standardised, stored, shipped and dosed without being kept alive. Cell-free regenerative medicine is the field conceding that its original product was the wrong unit and proposing a better one.

THE WORD DOING THE WORK

From. Not alongside, not complementing. The session title stakes a position that the future of this field is not living cells at all. For a country that has invested heavily in cell therapy infrastructure, scheduling that argument on the closing day, with the ministry in the room, is not a neutral act.

Which makes the first speaker the correct first speaker.

Start with who opened it. **Dr Chien-Cheng Tai**, senior technical specialist at the Department of Industrial Technology of the **Ministry of Economic Affairs**, alongside **Maggie Lu**, vice president and general director of the Biomedical Technology and Device Research Laboratories at the **Industrial Technology Research Institute**. A government ministry and the national applied research institute, jointly opening a session on extracellular vesicles. That is the state declaring the field a national industrial matter rather than a scientific curiosity.

Then look at the running order, because it is a rebuke to every hype cycle this field has had.

â?ª **Sai Kiang Lim**, research director at Paracrine Therapeutics, on the development of MSC-derived small EV therapeutics, covering biological advances and translational opportunities. Lim is among the foundational figures in mesenchymal stromal cell vesicle biology, and the name of her company is not decoration: the paracrine hypothesis is the argument the session title rests on. Putting the person who helped establish that the signal, not the cell, is the medicine in the opening slot sets the scientific floor for everything after it.

â?ª **Benjamin Chou**, deputy general director at ITRI, on standardising extracellular vesicle production, with the subtitle that matters most on the entire day: compliance, purity, and control.

â?ª **Grace Lee**, president of **BIONET Therapeutics**, on advancing EV-based therapeutics through AI, covering discovery acceleration and clinical efficacy.

Biology, then manufacturing standards, then application. Not the other way round. A field with a credibility problem sequenced its own session so that purity and control came before the AI story, which is precisely the discipline the afternoon session in 402AB could not have been expected to impose on itself.

And then the panel. **Chi-Ying Huang**, distinguished professor and dean of the College of Pharmaceutical Sciences at **National Yang Ming Chiao Tung University**, moderated, with Lim, Chou and Lee joined by **Meng-Hsiu Wu**, deputy director of the Division of Medicinal Products at the **Taiwan Food and Drug Administration**.

THE SINGLE MOST IMPORTANT NAME ON DAY 3

A deputy director of the TFDA's medicinal products division, sitting on a public panel about extracellular vesicles, alongside the national research institute that just presented the compliance framework. Regulators do not appear on panels about fields they consider unserious. This is the referee arriving before the match gets out of hand.

It would be easy to overread this. One panel appearance is not a regulatory pathway, and the gap between a TFDA deputy director joining a discussion and a defined route to approval for an EV therapeutic remains substantial. Nor does anything here touch the cosmetics question directly. Exosome skincare will continue to be sold under a different regime, using the same word, whatever this panel concluded.

But the shape of the response is right, and it is fast. Within twenty-four hours of the two-vocabularies problem being visible on a single day's schedule, the same event produced a session where the ministry, the national lab, the regulator, a university dean and the field's foundational scientist sat in one room and talked about compliance, purity and control. Very few markets could assemble that on demand. It is the same coordination reflex that produced three exosome bodies and a cluster directory in the first place, pointed for once at the hard question rather than the export opportunity.

One panel is not a pathway. But a field that puts standards before its AI story, with the regulator in the room, is a field that has decided to be taken seriously.

A-10 · THE CAVEAT, AND THE CREDIT

14:30 · A-11 The measurement problem

Session A-11, AI and Multi-Omics in Cancer and Chronic Disease, was opened and closed by **Pan-Chyr Yang**, president of the **Institute for Biotechnology and Medicine Industry** and one of the most senior figures in Taiwanese biomedicine. Between his bookends sat three talks that had almost nothing in common except the thing that mattered: all three were about measurement.

Dean Ho, professor and head of the Department of Biomedical Engineering at the **National University of Singapore**, gave the day's most personal talk, on using AI on his own biology, with lessons for precision longevity and health. It is a neat closing bracket on the week. Wednesday's keynote made the corporate case for longevity, arguing that a company survives by licensing legible work to fund illegible work. Friday's session made the measurement case: whatever you intend to do about ageing, you first have to be able to read what is happening in a specific human body, and the n-of-one experiment is where that becomes concrete rather than theoretical.

Hiroshi Ohno, team director of the Laboratory for Intestinal Ecosystem at the **RIKEN Center for Integrative Medical Sciences**, presented on gut microbiota and immune networks from a multi-omics perspective. The microbiome has spent a decade as the most over-promised field in biology, and the multi-omics framing is the corrective: not one more association study, but the layered measurement required to say anything causal about an ecosystem talking to an immune system.

James CH Yang, executive vice president of **National Taiwan University** and one of the region's most consequential clinical investigators in lung cancer, closed on liquid biopsy as the new frontier in detecting and defeating cancer. This is the most clinically advanced measurement technology in the session and the one closest to routine practice, and it is worth noticing that it sits in the same intellectual family as Thursday's exosome science: reading what cells shed into circulation, and inferring what is happening where you cannot look.

THE THREAD NOBODY STATED

Liquid biopsy reads vesicles and fragments in blood. Thursday's morning session was about how cells decide what to load into those vesicles. The diagnostic industry is already selling the application of a mechanism the field is still working out. That is the exosome field's whole situation, restated in a different room.

Read together, A-11 was the session that explained why the rest of the day exists. You cannot manufacture what you cannot specify, you cannot regulate what you cannot measure, and you cannot deliver what you cannot verify. The measurement layer is upstream of every bottleneck the other four sessions described.

16:20 · A-12 The last mile, and the tell

The conference programme closed with Digital Health, chaired by **Ray-Jade Chen**, chairman of the **Taiwan Digital Health Industry Development Association**, and it contained the single most on-theme speaker of the entire week.

Allen Lien is chairman and chief executive of **Acer Medical**. Acer. The personal computer company. Speaking on AI in healthcare, realities and challenges, at the closing session of Taiwan's biotech conference.

Every piece this publication has published this week has circled the same argument: that Taiwan's industrial inheritance in semiconductors and information technology is not a charming irrelevance to its biotech story but the substance of it, because the industry's constraint is moving toward precision, manufacturing and execution. That argument spent three days being made by inference. Then a Taiwanese PC manufacturer's medical subsidiary walked onto the closing stage and made it by simply existing.

The week spent three days arguing that Taiwan's chip inheritance is its biotech advantage. Then Acer's medical arm closed the conference, and the argument stopped needing to be made.

A-12 · THE TELL

The rest of the session was about the last mile. **Mavis Hsu**, partner in technology and transformation at **Deloitte & Touche**, spoke on AI-driven digital health, framed as a move from smart healthcare to trusted healthcare, and that word swap is the sector's entire current problem in two syllables. Smart was the last decade's pitch. Trusted is what determines whether a clinician actually uses the thing.

Yu-Sheng Lo, director of the Center of Digital Innovation and Development at **Taipei Medical University**, spoke on going beyond the smart hospital and on TMU's own digital transformation, which is the unglamorous institutional work that decides whether any of this reaches a patient. The closing panel, with Hsu and **Tony Tang** of Mikotek Information, took on AI-powered home care and digital health toward a resilient and sustainable healthcare future.

Home care is the correct place for this conference to end, and not for sentimental reasons. Asia's demographic position makes the home the decisive site of care delivery over the next two decades, which is the same demographic fact that earned dementia a dedicated Special Forum earlier in the week. A programme that opens on global biotech development and closes on getting care into somebody's living room has described the full length of the chain.

THE WEEK Three days, read backwards

A daily round-up has an occupational hazard: each day looks like a list of sessions. The shape only appears once there are no more days.

Day 1, Wednesday, was assertion. Plenaries on global biotech development and medicine resilience, a press meet where six people with six unrelated subjects arrived independently at the same conclusion, and a keynote arguing that a longevity company survives by licensing the commercially legible work to fund the work no regulator will approve. It was the week at its most rhetorical, and its most quotable.

Day 2, Thursday, was evidence, and evidence is messier. The exhibition opened. A Nobel laureate spoke on vesicle biogenesis by video at nine in the morning, and the same room hosted an exosome cosmetics strategy session at three in the afternoon. Down the corridor, iPSC organoids argued that human-relevant models had matured, and upstairs a four-hour session helped Taiwanese founders list in New York while European countries ran tracks nearby. It was the day the triumphal narrative acquired complications.

Day 3, Friday, was the correction. No discovery sessions. The regulator on a panel. Standards before the AI story. Ninety minutes on what breaks in a supply chain, with no slides. A PC company's medical arm closing the conference. If Day 1 sold the region and Day 2 exposed the seams, Day 3 was the region turning up with a toolbox.

THE SEQUENCE, IN ONE LINE

Day 1 said Asia is where this happens now. Day 2 showed that it does, unevenly. Day 3 showed the machinery for making it happen properly, which is the only one of the three that is hard to fake.

Every industry conference wants Day 1. It is where the headlines are. But the day that tells you whether a sector is real is the closing day, when the plenaries are over and the only people still in the room are the ones with a problem to solve. On that measure this week reported well.

DAY 3 The Innovation Forum, at a glance

TIME	Session
09:00	**A-8 Advancing Next Generation CAR-T Therapeutics.** DCB chairing; two of three talks on in vivo CAR-T engineering, from DCB's Institute of Biologics and ARCE Therapeutics, with The Emmes Group on trial deployment methodology.

10:50	**A-9 Supply Chain.** Ninety minutes, pure panel, no presentations. Taiwan CDMO Alliance moderating a bench of supply chain advisors plus IQVIA Taiwan.
12:40	**A-10 From Cell Therapy to Cell-Free Regenerative Medicine.** MOEA and ITRI opening; Paracrine Therapeutics on MSC-sEV biology, ITRI on standardising EV production, BIONET on AI; TFDA on the pane
14:30	**A-11 AI and Multi-Omics in Cancer and Chronic Disease.** IBMI bookending; NUS on precision longevity, RIKEN on gut microbiota and immune networks, NTU on liquid biopsy.
16:20	**A-12 Digital Health.** Deloitte on trusted healthcare, TMU on digital transformation, Acer Medical on AI realities, closing panel on AI-powered home care.

THE TAKEAWAY

Three days, and the through-line only becomes visible from the end.

â?ª **The agenda enacted the keynote.** Wednesday's argument was that compressing discovery relocates the bottleneck downstream to manufacturing, capital, regulation, talent and clinical capacity. Friday's five sessions were, in order: manufacturing, supply chain, regulation and standards, measurement, and delivery. Nobody planned that as a callback. It is simply what the industry's problem list looks like when you write it down.

â?ª **Taiwan answered its own hardest question in twenty-four hours.** The two-vocabularies problem in Room 402AB on Thursday was met on Friday by a session where the ministry opened, the national lab presented compliance and purity, and the regulator sat on the panel. That is not a solution. It is a serious response, produced fast, by an ecosystem that can convene the state, the lab, the clinic and the company in one room on short notice.

â?ª **The industrial thesis stopped being a thesis.** In vivo CAR-T trades a per-patient cell factory for a vector factory. EV therapeutics turn on purity and control. Digital health closed with a PC manufacturer's medical arm on stage. Every one of those is an argument that the next decade of biomedicine rewards process engineering, and every one of them was made without anyone needing to mention semiconductors.

The conference ends here. The exhibition trades on until Sunday, the partnering system keeps running, and the roadshow companies go back to their investors with whatever they came for. What the closing day leaves behind is a corrected picture of what this industry currently finds difficult.

The science was never the bottleneck. It was the beautiful part, and the week gave it a Nobel laureate on video and a hall full of people who understood him. The difficulty is everything that happens after somebody is right: making it twice, shipping it cold, proving it is pure, measuring whether it worked, and getting it into a house where somebody needs it.

That is downstream, and downstream is where this region has always been strongest. Which may turn out to be the most important thing BIO Asia-Taiwan 2026 had to say.

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