SCRIP
CITELINE COMMERCIAL

29 Jul 2024 | **News**

Deal Watch: BI Acquires Nerio For Novel Immune Checkpoint Inhibitor

by Joseph Haas

Featuring deals involving Novartis/Dren, Palvella/Pieris, Eyenovia/Senju, Addex/Johnson & Johnson, Agilent/BioVectra, Meitheal/Nabriva, plus tech transfer agreements and deals in brief.

Scrip regularly covers business development and deal making in the biopharmaceutical industry. Deal Watch is supported by deal intelligence from Biomedtracker.

Boehringer Ingelheim Acquires Nerio Therapeutics

Boehringer Ingelheim GmbH is expanding its immuno-oncology pipeline with the acquisition of Nerio Therapeutics for up to $1.3b, which brings a preclinical immune checkpoint inhibitor that BI hopes to make a potential centerpiece of its IO portfolio.

Nerio's small molecules inhibit the protein tyrosine phosphatases N1 and N2 (PTPN1 and PTPN2), representing a novel checkpoint for drug therapy. PTPN2/N1 inhibitors enhance immune function and sensitize tumors to pro-inflammatory signals, which supports robust anti-tumor activity.

BI sees potential use as a single-agent therapy as well as in combination with multiple in-house cancer therapies and programs. The private biopharma reports it has around 20 projects, including cancer cell-directed agents, immuno-oncology therapies and "smart combination approaches." It has a PD-1 inhibitor, ezabenlimab, in Phase I as monotherapy and various combinations in Phase II across a range of tumor types. Boehringer has signed several deals in recent years aimed at building out its oncology portfolio, including other IO targets from Covant and 3T. (Also see "*Boehringer Snaps Up T3 Amid Broader Immuno-Oncology Push*" - Scrip, 22 Nov, 2023.)

Nerio emerged from the Avalon BioVentures accelerator and was founded by Avalon Ventures,

with financial support from Bregua Corporation, Correlation Ventures, Alexandria Venture Investments and Viva BioInnovator.

Novartis Looks To Dren For New Bispecifics

Novartis AG unveiled a partnership 24 July with *Dren Bio, Inc.* on discovery and development of therapeutic bispecific antibodies for cancer using Dren's targeted myeloid engager and phagocytosis platform, a bispecific antibody-based technology that, Dren explained, induces potent depletion of pathogenic cells, protein aggregates and other disease-causing agents by engaging a novel phagocytic receptor that is selectively expressed on myeloid cells. Engineering the compounds as bispecific antibodies means controlled myeloid cell activation only in the presence of the target antigen, "which may result in greater therapeutic indexes and offer superior safety profiles compared to other therapeutic modalities such as T-cell engagers and antibody-drug conjugates," according to Dren. The biotech has two clinical programs – DR-0201, which induces deep depletion of pathogenic B cells, and DR-01, which selectively depletes autoreactive T-cells.

The partners will collaborate to advance selected targeted myeloid engager programs in oncology through clinical candidate selection; Novartis will then take on full responsibility for remaining development, manufacturing, regulatory and commercialization activities.

The private biotech will receive a total upfront package of $150m, including a $25m equity investment in the company. Dren is also eligible for up to $2.85bn in milestone payments, as well as tiered royalties on future net sales of any commercialized products resulting from the collaboration.

Palvella, Pieris Merge To Focus On Rare Genetic Skin Diseases

Clinical-stage *Palvella Therapeutics*, focused on serious rare genetic skin diseases, will go public via an all-stock merger with *Pieris Pharmaceuticals, Inc.* announced 24 July. The new firm will focus on Palvella's lead clinical product candidate, Qtorin (3.9% rapamycin anhydrous gel) for microcystic lymphatic malformations (microcystic LMs), cutaneous venous malformations and other functionally debilitating skin diseases driven by overactivation of the mTOR pathway.

The combined company said it has cash runway into the second half of 2027, with $80.5m in cash and equivalents at closing, including $78.9m from a private financing. That financing should see it through Phase III results for Qtorin in microcystic lymphatic malformations.

Pieris stockholders will be issued a contingent value right (CVR) that will provide payments, if any, under Pieris's existing partnerships on immune-oncology bispecifics with Pfizer and Boston Pharmaceuticals. The merger is expected to close in Q4.

SCRIP
CITELINE COMMERCIAL

Eyenovia, Senju Pair On Drug-Device Combo For Dry Eye

New York-based *Eyenovia, Inc.* announced a collaboration on 23 July with *Senju Pharmaceutical Co., Ltd.* to develop Senju's corneal epithelial wound-healing candidate SJP-0035 for use with Eyenovia's Optejet dispensing technology, as a potential treatment for chronic dry eye disease.

Under the agreement, Eyenovia and Senju will meet with the US Food and Drug Administration to present a clinical development proposal that they said, if successful, could support a new drug application filing for a novel drug-device combination product for dry eye disease. An eye drop, SJP-0035 has been shown in prior Phase I and Phase II studies to be well tolerated at multiple doses tested in over 250 subjects.

The companies said a planned Phase IIb trial would evaluate the combination product with a goal of producing data in 2025. If successful, the companies then could expand upon their collaboration agreement to bring the product into two Phase III studies by 2026.

Addex Loses J&J's Support On Phase II Epilepsy Drug

Addex Therapeutics Ltd. revealed on 22 July that *Johnson & Johnson* is no longer participating in development of Phase II epilepsy candidate ADX71149/JNJ-40411813, a mGluR2 positive allosteric modulator, after a Phase II study in adjunctive therapy missed its primary endpoint in a data readout this past April.

Included in a partnership inked between the Geneva biotech and J&J affiliate Ortho-McNeil in 2005, the candidate failed meet statistical significance in time for patients to reach baseline seizure count in epilepsy sufferers with focal onset seizures with suboptimal response to levetiracetam (*UCB S.A.*/*Otsuka Pharmaceutical Co. Ltd.*'s Keppra and generics) or brivaracetam (UCB's Briviact and generics).

Addex said the partnership with J&J otherwise is ongoing and that the big pharma's decision was expected following the Phase II failure. The company said it will conduct a full analysis of the study before determining the future of ADX71149.

Agilent To Buy CDMO BioVectra

Agilent Technologies, Inc. agreed on 22 July to acquire privately held contract development and manufacturing organization (CDMO) *BioVectra Inc.* for $925m. Founded in 1970 and based in Canada, BioVectra produces highly potent active pharmaceutical ingredients and other molecules for targeted therapeutics. Agilent said the transaction is expected to close this year.

Previously, BioVectra was acquired by Questor Pharmaceuticals in 2013, then it became part of *Mallinckrodt plc* after the UK firm purchased Questor for $5.3bn the following year. In 2019, private equity firm HIG Capital bought BioVectra as Mallinckrodt said it wanted to focus on its

branded specialty products business.

BioVectra supports early-stage clinical development to large-scale commercial manufacturing and currently serves biotech and pharmaceutical companies in North America and Europe. The acquisition builds upon Agilent said the deal will add to its CDMO specialization in oligonucleotides and CRISPR therapeutics, expanding its portfolio with BioVectra's sterile fill-finish services, pDNA and mRNA capabilities, and lipid nanoparticle formulation capabilities.

Meitheal Purchases Antibiotic Contepo From Nabriva

Meitheal Pharmaceuticals acquired North America rights on 18 July to the broad-spectrum antibiotic Contepo (fosfomycin for injection) from *Nabriva Therapeutics plc.* Contepo (ZTI-01) is a novel, intravenous antibiotic with demonstrated activity against most multi-drug resistant (MDR) strains that cause complicated urinary tract infections (cUTI), according to Vienna-headquartered Nabriva, but has run into multiple delays during the approval process at the US FDA.

Under the agreement, Meitheal's rights to the product will include any results of development and regulatory activities, and all intellectual property rights, technology and know-how related to Contepo. In exchange, Nabriva will receive an upfront payment upon closing and can earn US net sales royalties for Contepo.

In preparation for a potential commercial launch, Meitheal said it will establish a full commercial marketing and sales organization in addition to a medical science liaison team to support clinician needs. Nabriva received an FDA complete response letter to its NDA for Contepo in 2019, and then received a second CRL in June 2020 after refiling the drug for approval. (Also see "*Keeping Track: US FDA Approves Sanofi's Dengvaxia, But Heron's HTX-011 And Nabriva's Contepo Fall Short*" - Pink Sheet, 5 May, 2019.)

Tech Transfer:

- *Autobahn Therapeutics*, a Samsara BioCapital-backed virtual accelerator for academic biotech, announced 24 July a partnership with *Charles River Laboratories International, Inc.* "to accelerate the advancement of novel academic science into transformational new therapies across diverse therapeutic modalities and disease areas." CRL will be the preferred research partner for Autobahn's pipeline of preclinical therapeutics and made an investment in Autobahn Labs, which the firms said will help expand Autobahn's number of partnerships with academic institutions. That same day Autobahn announced a $100m series C financing. (Also see "*Autobahn Speeds Lead Drug Into Phase II With $100m In Fresh Cash*" - Scrip, 24 Jul, 2024.)

- The *University of Texas MD Anderson Cancer Center* and *Summit Therapeutics plc* on 25 July announced a five-year strategic collaboration to accelerate development of ivonescimab,

including exploring additional tumor types beyond its current development plan. Summit recently reported positive Phase III results with partner *Akeso Inc.* in non-small cell lung cancer. (Also see "*ASCO: Ivonescimab A New Challenger To Keytruda In 1L, PD-L1-High NSCLC?*" - Scrip, 5 Jun, 2024.)

- The Astellas Institute for Regenerative Medicine, *Universal Cells Inc.* (both of which are wholly owned subsidiaries of *Astellas Pharma, Inc.*) and *Osaka University* announced a research collaboration on 22 July to develop pluripotent stem cell-derived cartilage organoid cell therapy for the treatment of intervertebral disc degenerative disease. Universal Cells holds the rights to universal donor cell (UDC) technology to create cell therapy products from pluripotent stem cells that it claims can offer reduced risk of immune rejection by genetically modifying human leukocyte antigen using gene-editing technology.

- The *University of Oxford* and *Apollo Therapeutics LLC* unveiled a drug discovery and development collaboration on 21 July aimed at translating breakthroughs made by biomedical researchers at the university. Apollo will identify and assess validated therapeutic targets from Oxford's researchers, whose research teams will gain access to therapeutic development expertise and program funding from Apollo. Apollo said its drug discovery team will look for potentially transformational medicines to advance the standard of care across areas such as oncology and immunological and inflammatory disorders.

In Brief:

- *Ipsen SA* is gaining ex-US regulatory and commercial rights to Ojemda (tovorafenib) for pediatric low-grade glioma (pLGG), cleared by the US FDA in April, and any future indications. Under the agreement announced 25 July, *Day One Biopharmaceuticals, LLC* will receive an upfront payment of $71m in cash plus a $40m equity investment at a premium, and up to $350m in additional launch and sales milestone payments as well as tiered double-digit royalties starting at mid-teens percentage on sales.

- *Eisai Co., Ltd.* is collaborating with EcoNaviSta, a provider of SaaS-based home monitoring systems used in nursing care, on improving awareness of changes in cognitive function in residents in care home facilities using Eisai's digital brain health check tool NouKNOW, EcoNaviSta's Life Rhythm Navi and Dementia Prediction Model. The firms note that in Japan, many of its rapidly aging population moves into residential facilities without care services, where there are few chances to notice changes in cognitive function. Eisai is partnered with *Biogen, Inc.* on the Alzheimer's therapy Leqembi (lecanemab).

- *BioNTech SE* and China-headquartered *Triastek, Inc.*, focused on 3D-printed biopharmaceutical products, said on 23 July that they will collaborate to develop RNA therapeutics for oral delivery using 3D printing technology. Triastek said it will aim to create tablet structures that can optimize therapeutic delivery across the gastrointestinal mucosa

while minimizing degradation in the GI tract. BioNTech will pay $10m up front under the alliance, with Triastek eligible to earn up to $1.2bn in development, regulatory and commercial milestones, plus sales royalties.

- Israel's Parkinson's disease-focused *Pharma Two B Ltd.* will go public in a reverse merger with trouble liver-focused *Hepion Pharmaceuticals, Inc.*, the two companies revealed on 22 July. After reducing headcount by 60% in December, Hepion said on 19 April that it had stopped treating patients and was winding down a Phase II study of rencofilstat, a cyclophilin inhibitor, in non-alcoholic steatohepatitis. (Also see "*Finance Watch: Earnings Season Brings Job Cuts, Even At Big Pharma*" - Scrip, 30 Apr, 2024.) Pharma Two B said it is working toward filing an NDA for Parkinson's candidate P2B001, a novel, fixed-dose, extended-release combination of pramipexole and rasagiline, in early 2026. The combined company will continue under the Pharma Two B name, led by the Israeli firm's management team after the deal valued at $58.5m closes.

- *Nissan Chemical Corporation* licensed rights to research, develop, and market its NIP-322 in Japan, the US, Europe and Taiwan agreement on 22 July to fellow Japanese firm *Maruho Co., Ltd.* NIP-322 is a selective inhibitor of sepiapterin reductase in preclinical development for the treatment of chronic pain. Nissan Chemical will get upfront cash and could earn milestones and royalties from Maruho.

Stay tuned for the next edition of Deal Watch. You can read more about other deals that have been covered in depth by Scrip and Generics Bulletin in recent days below:

(Also see "*Flagship Inks Another Big Pharma Development Deal, This Time With GSK*" - Scrip, 29 Jul, 2024.)	The deal includes up to 10 medicines, with an initial focus on immunology and respiratory diseases, and is similar to one the VC firm made with Pfizer last year.
(Also see "*$1.6bn Bharat Serums Buy Gives Mankind Dominance In Women's Health, R&D Engine*" - Scrip, 29 Jul, 2024.)	With an eye-catching $1.6bn deal, Mankind has acquired Bharat Serums and Vaccines to add a high-barrier, specialty business, a credible biologics R&D engine and a complementary portfolio of women's fertility and health treatments while PE firm Advent finds a profitable exit. What's next?
(Also see "*Take Five: Ipsen Bags Rights To Day One Brain Cancer Drug*" - Scrip, 26 Jul, 2024.)	The Paris-based group has inked five external deals already this year, this time paying $111m to get access internationally to

	Day One Biopharmaceuticals' Ojemda for refractory pediatric low-grade glioma.
(Also see "*Apollo Bolsters Its R&D Strategy With Oxford University Alliance*" - Scrip, 23 Jul, 2024.)	Adding Oxford to its roster will help Apollo widen its net for potential first-in-class therapies, and connects with the university's ambition to build world-beating spin-outs.
(Also see "*AstraZeneca Cultivates Oncology Pipeline With Pinetree Pact*" - Scrip, 24 Jul, 2024.)	Degrading rather than inhibiting a target protein has emerged as one of the most promising approaches in drug discovery and AstraZeneca is paying handsomely to advance its presence in the space.
(Also see "*Grünenthal Bolsters US Portfolio With Buyout Of Valinor*" - Scrip, 22 Jul, 2024.)	German pain-management specialist Grünenthal is acquiring Valinor to gain additional geographic rights to the gastrointestinal drug Movantik and add to its US product portfolio.
(Also see "*Wegovy And M&A Deals Help Novo Holdings Expand Biotech Investments*" - Scrip, 22 Jul, 2024.)	Flush with cash, the controlling stakeholder of Novo Nordisk's life sciences investment arm is increasing its financing of other biopharma innovators.
(Also see "*Narasimhan Playing The Long Game At Novartis*" - Scrip, 19 Jul, 2024.)	The head of Basel-headquartered Novartis is no fan of bidding wars when it comes to dealmaking. "If we are outbid and it's not within our envelope, we just walk away and we're okay with that."
(Also see "*Relay's SHP2 Runs Aground As Roche Pulls Out Of Development Deal*" - Scrip, 17 Jul, 2024.)	Relay said in an SEC filing that Roche terminated the deal to develop migoprotafib, though Roche emphasized that it was not due to any emerging clinical safety concerns.