

■Assets / Hokkaido University				AsiaBio2026@Singapore	
No.	Category	Category2	Modality	Title	Summary
1	Biotech/Pharma	Neurological disorders	Protein	GFRα1: A First-in-Class Lead for Functional CNS and PNS Nerve Regeneration	We identified GFRα1 as a first-in-class lead for CNS and PNS axonal regeneration. In vivo studies demonstrate accelerated recovery of sensory and motor functions by bypassing the inhibitory environment. Leveraging our proprietary evaluation system and RNA-seq data, we seek partners to advance this novel regenerative therapy and explore broader drug discovery applications in the nerve repair space.
2	Biotech/Pharma	Neurological disorders	Peptide	p3-Alcβ9-19: A Primate-Validated, Brain-Penetrant Mitochondrial Activator for AD	We have developed an endogenous 11-amino acid peptide that restores neuronal viability by activating mitochondrial complex I. Validated in monkeys via PET imaging, it crosses the blood-brain barrier through needle-free transdermal delivery. We seek strategic partners for FIH trials to position this as a safe, disease-modifying intervention for early-stage Alzheimer's Disease.
3	Biotech/Pharma	Neurological disorders	RNA	Targeted RNA Chaperones: A Precise Mechanism to Protect Motor Neurons in ALS	We identified short RNA repeats that act as molecular chaperones to suppress pathological TDP-43 aggregation without affecting physiological transcription. This approach restores proteostasis and reduces cytotoxicity in neuronal models. We are seeking collaborators for in vivo studies to advance this high-specificity alternative to conventional antisense therapies for ALS and FTLT.
4	Biotech/Pharma	Neurological disorders	Small Molecule + Antibody etc.	NET Inhibitors: Accelerating Acute Nerve Repair via the MIF/CXCR4 Axis	Our technology promotes nerve regeneration by inhibiting Neutrophil Extracellular Traps (NETs) immediately post-injury. Data demonstrates that targeting the MIF/CXCR4 axis significantly accelerates macrophage-driven myelin clearance and axonal growth. We seek partners to develop this acute intervention strategy as a novel recovery approach for peripheral nerve trauma and Wallerian degeneration.
5	Biotech/Pharma	Drug Delivery System	LNP	HSC-Targeted LNPs: A Precision Delivery Platform for Reversing Hepatic Fibrosis	We have engineered a specialized LNP platform with high specificity for activated hepatic stellate cells (HSCs), the drivers of fibrosis. In vivo data demonstrates potent anti-fibrotic efficacy with minimal hepatocyte toxicity. This scalable system is ideal for partners looking to deliver RNA or small molecules for advanced MASH and cirrhosis therapies.
6	Biotech/Pharma	Drug Delivery System	LNP	Spleen-Specific LNPs: Optimized Dendritic Cell Delivery for Next-Gen Vaccines	This novel LNP formulation overcomes liver-centric distribution to achieve targeted mRNA delivery to splenic dendritic cells. Preclinical results show robust systemic immune activation and superior tumor protection compared to clinical-grade benchmarks. We seek partners to integrate this high-affinity platform into cancer vaccine or systemic immunotherapy portfolios.
7	Biotech/Pharma	Drug Delivery System	LNP	Helper Lipids: A Potency-Boosting Solution for Enhanced Endosomal Escape	Our proprietary helper lipids accelerate intracellular cargo release by promoting efficient membrane fusion. Integration into standard LNP formulations dramatically improves mRNA expression and therapeutic potency. This technology offers a strategic advantage for partners aiming to lower systemic dosing and improve the safety profiles of RNA-based drug candidates.
8	Biotech/Pharma	Drug Delivery System	LNP	Novel ζ-Lipids for Cas9 RNP Delivery: 98% Gene Knockout in vivo	We developed optimized ionizable lipids (ζ-lipids) that achieve over 98% reduction in target proteins after a single dose of CRISPR/Cas9 RNP. Validated for high hepatic efficiency and low toxicity, this non-viral platform offers a rapid, safe alternative to viral vectors. We seek partners for the clinical translation of genetic liver disease therapies.
9	Biotech/Pharma	Drug Delivery System	LNP	NK Cell-Specific LNPs: Scalable Genetic Modification for Cold Tumor Therapy	Our specialized LNP platform efficiently introduces RNA into human NK cells with minimal toxicity, offering a scalable alternative to ex vivo viral transduction. This enables transient genetic modification to boost cytotoxicity and persistence in the tumor microenvironment. We seek partners to co-develop this transient modification strategy for T-cell-evading cancers.
10	Biotech/Pharma	Drug Delivery System	LNP	Novel Cationic Lipids for Extrahepatic Delivery	Novel LNPs with our original lipids can encapsulate various nucleic acids, including siRNA and mRNA, and achieve superior delivery to the spleen, heart, lungs, and skeletal muscles compared to standard formulations. This platform offers high strategic value for developing next-generation gene therapies and "beyond-liver" RNA therapeutics, providing a versatile tool for tissue-specific targeting and enhanced endosomal escape.
11	Biotech/Pharma	Oncology	Antibody	PIECE Platform Technology targeting Intracellular IL-6 for Tumor Therapeutics	Using our proprietary PIECE platform, we achieved successful intracellular delivery of anti-IL-6 antibodies, targeting the source of pro-tumor signaling. This approach suppresses tumor proliferation and resistance that extracellular antibodies cannot reach. We seek partners to apply this intracellular delivery technology to a wide range of previously unreachable cytosolic targets in oncology.
12	Biotech/Pharma	Oncology	Antibody	Anti-IL-34 mAbs: Strategic Add-ons to Overcome Therapeutic Resistance	We developed monoclonal antibodies specific to IL-34 that inhibit binding to CSF-1R, reversing drug resistance in the tumor microenvironment. Preclinical data shows restored efficacy of standard-of-care therapies when combined with our mAb. We seek partners to evaluate this as a strategic combination therapy to prevent or overcome resistance in solid tumors.
13	Biotech/Pharma	Oncology	middle-molecule	DCA-Micelles: A Precision Metabolic Radiosensitizer for Local Tumor Control	These self-assembling micelles deliver dichloroacetic acid (DCA) specifically to tumors, increasing their sensitivity to radiotherapy while minimizing systemic toxicity. By modifying tumor metabolism at the site of irradiation, this technology enhances the therapeutic index of radiotherapy. We seek clinical partners to advance this as a promising adjunct therapy for localized resistant cancers.
14	Biotech/Pharma	Oncology	Small Molecule / Peptide	Drug Discovery Targeting the BATF3/IRF4 Axis Enabling Indication Expansion Beyond ATLL	This asset provides a novel drug target together with in vitro and in vivo evaluation systems. The BATF3/IRF4 complex has been identified as a novel regulator of oncogenic gene expression in adult T-cell leukemia/lymphoma (ATLL). The IRF4/BATF pathway is also implicated in other hematological malignancies, including diffuse large B-cell lymphoma (DLBCL) and anaplastic large cell lymphoma (ALCL), suggesting potential for indication expansion beyond ATLL. The platform is HTS-compatible, and the in vivo model has been validated for proof-of-concept (PoC) studies.
15	Biotech/Pharma	Oncology	Small Molecule	A Novel Therapeutic Strategy for HCC Targeting Tumor Metabolic Transporters	This technology provides a novel therapeutic strategy for hepatocellular carcinoma (HCC) by simultaneously inhibiting Monocarboxylate Transporter 1 (MCT1) and 4 (MCT4). HCC cells produce large amounts of L-lactate due to the Warburg effect, and MCTs play a critical role in exporting this lactate to maintain intracellular pH and energy metabolism
16	Biotech/Pharma	Oncology	Small Molecule / Drug Repositioning	Retinoid Pathway-Targeted Therapy for Synovial Sarcoma and Soft Tissue Sarcomas	This technology relates to a patent-pending therapeutic approach for PRAME-high soft tissue sarcomas, including synovial sarcoma, a rare cancer with significant unmet medical needs. A clinically validated RARγ agonist demonstrated anti-tumor activity in multiple synovial sarcoma cell lines and in vivo xenograft models. Mechanistic studies further suggest suppression of PRAME expression and activation of retinoid signaling pathways. Given the existing clinical experience with the compound, this asset offers a promising drug repositioning opportunity with the potential for accelerated clinical development.
17	Biotech/Pharma	Oncology	Small Molecule	Dual MCT1/MCT4 Inhibition Strategy for Hypoxia-Resistant Hepatocellular Carcinoma	Dual inhibition of MCT1 and MCT4 disrupts lactate transport and energy metabolism in hepatocellular carcinoma, inducing tumor cell death under hypoxia. The strategy significantly improves sorafenib sensitivity and overcomes compensatory mechanisms limiting single MCT inhibition, providing a differentiated metabolic approach for resistant liver cancer.
18	Biotech/Pharma	Oncology/Inflammatory diseases	Small Molecule	Epigenetic Modulator for Refractory GVHD and IBD	Our asset presents a novel drug target for refractory GVHD and IBD, designed to prevent inflammatory flares and disease aggravation. By modulating specific pathways identified from multiple candidates, it erases the "inflammatory memory" in tissue stem cells. This breakthrough approach suppresses chronic hyper-responsiveness and epithelial apoptosis, significantly improving survival and clinical stability in vivo.
19	Biotech/Pharma	Immunology	Small Molecule	Next-Gen STING Agonists: Converting Cold Tumors via Potent Systemic Activation	Our novel lipidated STING agonists demonstrate enhanced cytokine induction relative to benchmark compounds. Designed for high membrane permeability and systemic stability, these compounds induce strong anti-tumor responses in breast cancer models. We seek partners for clinical development, particularly for use with immune checkpoint inhibitors.
20	Biotech/Pharma	Immunology	Peptide	STAP-1 Peptides: Selective T-Cell Modulation for Precision Autoimmune Therapy	We developed inhibitory peptides targeting the STAP-1 scaffold to selectively block T-cell overactivation. Validated in multiple sclerosis and asthma models, these peptides avoid broad immunosuppression while achieving significant clinical improvement. We seek partners to co-develop this precision immunomodulator for T-cell-driven autoimmune and allergic inflammatory diseases.
21	Biotech/Pharma	Immunology / Inflammatory Diseases	Drug repurposing	Restoring NET Degradation in ANCA Vasculitis	A novel therapeutic approach for ANCA-associated vasculitis (AAV) that enhances clearance of pathogenic NETs using approved compounds. Unlike current immunosuppressive therapies, this technology targets a distinct inflammatory mechanism. Proof-of-concept has been demonstrated in preclinical models, supporting a first-in-class therapeutic approach leveraging approved drug platforms.
22	Biotech/Pharma	inflammatory diseases	nucleic acid	Meflin: A Novel Biomarker and Therapeutic Target for Systemic Inflammation	Our research identifies Meflin as a novel TNF receptor ligand and potent activator of the NF-κB pathway. siRNA or antibody-mediated depletion successfully suppresses chronic inflammation in systemic models. We seek partners to develop Meflin-targeted therapies and high-sensitivity biomarkers for rheumatoid arthritis and other chronic inflammatory disorders.

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23	Biotech/Pharma	Rare diseases	RNA · Gene Therapy	srRNA: A Stable, Vector-Based Alternative for Exon-Skipping Therapies	We developed "srRNA," a programmable scaffold expressed from viral vectors to induce targeted exon skipping. Unlike short-lived ASOs, srRNA provides sustained, low-toxicity therapeutic effects. With validation in muscular dystrophy models, we seek partners interested in developing long-term genetic treatments for Duchenne muscular dystrophy and other splicing disorders.
24	Biotech/Pharma	Mitochondrial diseases	Genome editing technology	MITO-Porter & CRISPR/Cas9: An Advanced Platform for Mitochondrial Gene Editing	The MITO-Porter system delivers CRISPR/Cas9 RNPs directly into mitochondria, overcoming the double-membrane barrier. Validated in MELAS patient cells, this system can precisely remove mutated genes. We seek partners to develop a novel mitochondrial gene-editing strategy for mitochondrial genetic diseases and organelle-specific pathologies.
25	Biotech/Pharma	cirrhosis	Cell	IL-34-Induced Macrophages: Autologous Cell Therapy for Advanced Liver Cirrhosis	This regenerative therapy uses autologous macrophages differentiated with IL-34, showing superior anti-fibrotic activity compared to standard CSF-1-induced cells. Successfully validated in human-derived cell models, it offers a transplantation-free alternative for cirrhosis. We seek clinical partners for the development of this personalized, non-immunosuppressive cell therapy.
26	Biotech/Pharma	diabetes	Small Molecule	Resolvin E3 Indoles: A Pro-Resolving Approach for Insulin Resistance	We synthesized stable indole derivatives of Resolvin E3 that effectively restore metabolic homeostasis and insulin sensitivity in diabetic models. Unlike current blockers, this pro-resolving approach enhances glucose uptake in adipocytes without detectable adverse effects in preclinical studies. We seek strategic partners to advance this novel metabolic regulator for Type 2 Diabetes.
27	Biotech/Pharma	Osteoporosis	Small Molecule	Syk Inhibitors: A Safety Bridge for Post-Denosumab Transition in Osteoporosis	This repurposing candidate addresses the clinical crisis of rebound bone resorption following anti-RANKL antibody discontinuation. By targeting the hyperactive DAP12/TREM2-Syk pathway, the therapy prevents rapid bone density loss and fracture risk. We seek partners to commercialize this vital transition therapy for long-term osteoporosis management.
28	Biotech/Pharma	Ophthalmology	Peptide	BDNF-Inducing Peptides: A Neuroprotective Approach for Glaucoma Treatment, Complementing IOP-lowering therapy	Our novel peptides restore deficient BDNF levels by promoting endogenous secretion, protecting retinal ganglion cells from apoptosis. This neuroprotective mechanism complements standard pressure-lowering treatments to halt vision loss. We seek partners to develop this as a comprehensive strategy for preserving neural function in glaucomatous eyes.
29	Biotech/Pharma	Dermatology	Small Molecule	Selective Senolytics: Removing Senescent Cells to Reverse UV-Induced Skin Aging	This topical agent selectively removes senescent melanocytes, suppressing chronic SASP-driven inflammation and preventing malignant transformation. Validated for its ability to attenuate age-related skin pathologies, it offers a potent therapy for both cosmetic photoaging and clinical skin diseases. We seek partners for the dermatological commercialization of this agent.
30	Biotech/Pharma	Infectious diseases	Antibody	Neutralizing mAbs for Marburg Virus: High-Potency Outbreak Control Tools	We have developed a suite of monoclonal antibodies with neutralizing activity against Marburg and Ravn viruses that meets or exceeds current benchmarks. These mAbs target conserved glycoprotein epitopes, ensuring robust efficacy during lethal outbreaks. We seek biodefense or infectious disease partners for rapid clinical development and outbreak response planning.
31	Biotech/Pharma	Infectious diseases	Antibody	Universal Pan-Species Ebola Antibodies: A Cross-Neutralizing Therapeutic Lead	This monoclonal antibody effectively inhibits cellular entry for all known Ebolavirus species by targeting a highly conserved internal fusion loop. Preclinical data confirms protective efficacy in vivo, making this a first-in-class candidate for universal Ebola intervention. We seek partners for global clinical positioning and stockpile development.
32	Biotech/Pharma	Infectious diseases	Peptide	Nemuri-Derived Peptides: A New Line of Defense Against MDR Bacterial Pathogens	Derived from the Drosophila "Nemuri" protein, these antibacterial fragments exert potent effects against multi-drug resistant (MDR) strains via a novel mechanism. They demonstrate low human cytotoxicity and high stability. We seek partners to develop these peptides for hospital-acquired infections and persistent bacterial pathogens.
33	Biotech/Pharma	Infectious diseases	Small Molecule	2-thiouridine (s2U): A Broad-Spectrum Antiviral for Positive-Strand RNA Viruses	This asset features a nucleoside analog that targets viral RNA-dependent RNA polymerase, inhibiting replication across various flaviviruses. Preclinical data shows a significant improvement in survival rates for dengue-infected models. We seek partners to develop this as a versatile antiviral for global infectious disease management.
34	Biotech/Pharma	Experimental model animals	Mice	Bioluminescent BLI Mice: Real-Time evaluation for Reproductive Toxicity	This genetically modified mouse model enables non-invasive, temporal evaluation of spermatogenesis and drug effects on fertility via bioluminescence. It offers a more ethical, efficient, and quantitative alternative to traditional toxicology endpoints. We seek CRO or pharma partners for safety assessment tool integration.
35	Technologies	Protein expression	Vector	Enhanced Mammalian Cell Vectors: High-Yield Production of Bio-Active Proteins	These novel expression vectors impart a high-level production capacity for foreign proteins requiring mammalian-specific folding and glycosylation. This platform optimizes the manufacturing of clinical biologics that are inadequate when produced in yeast or bacteria. We seek biomanufacturing partners to scale this production-boosting system.
36	Medtech	Diagnostics	Antibody	IgA N-Glycan Markers: A Non-Invasive Diagnostic Tool for MASH Fibrosis Stages	We identified serum IgA-bound glycans that correlate accurately with liver fibrosis progression in MASH patients. This blood-based test offers a reliable alternative to invasive biopsies for routine clinical monitoring. We seek diagnostic partners to develop this as a commercial liquid biopsy kit.
37	Medtech	Diagnostics	Antibody	HD5 Diagnostic Kits: Precision Monitoring for Intestinal Health and Microbiome	We established specialized mAbs for high-throughput quantification of Human α-Defensin 5 (HD5), a critical biomarker for intestinal immunity. This tool enables accurate, rapid diagnosis and monitoring of inflammatory bowel diseases (IBD). We seek diagnostic partners for the commercial rollout of these clinical-grade detection kits.
38	Technologies	Peptide Technology	Peptide	Micro-Scale SAR Platform: Rapid Structure-Optimization for Peptide Leads	This technology utilizes a novel amino acid to enable scanning and site-selective modification of peptide sequences on a minute scale. By slashing time and costs for library synthesis, it accelerates the discovery of high-affinity leads. We seek peptide-focused partners to integrate this platform into their early-stage drug discovery pipelines.
39	Technologies	Peptide Technology	Peptide	Nonribosomal Peptide Cyclases: A High-Throughput Engine for Cyclic Peptide Discovery	This platform utilizes nonribosomal enzymes to synthesize massive macrocyclic peptide libraries with high efficiency and purity. Capable of producing 10,000+ variants annually, it provides a vast chemical space for drug discovery. We seek partners looking to enhance their hit-to-lead pipelines for peptide therapeutics.
40	Medtech	Diagnostics	NGS	Portable Parasite NGS: A Field-Ready Comprehensive Detection System	This portable NGS method identifies known and unknown parasites by amplifying long sequences while suppressing host DNA background. It is an essential tool for rapid diagnostics in resource-limited or outbreak-prone regions. We seek partners for field-testing and global deployment of this infectious disease surveillance technology.
41	Medtech	Diagnostics / Research Tools	Assay / Detection Method	Ultra-Sensitive Immunoassay Platform Using Advanced Optical Sensing	We have developed a proprietary immunoassay platform enabling ultra-high sensitivity detection of protein biomarkers through advanced optical sensing. The technology significantly reduces background interference and achieves sensitivity well beyond conventional immunoassays, making it suitable for early disease detection and biomarker research. We seek partners in diagnostics and life science tools.
42	Medtech	Bio-imaging	Microscope Attachment	Attachment for Microscope Objective Lenses and Microscope	We have developed an innovative attachment for microscope objective lenses that enables precise microscopic spectroscopy during electromagnetic wave application. This technology ensures rapid, reproducible positioning of the application antenna, significantly boosting detection sensitivity and measurement accuracy. We seek medtech or diagnostic instrument partners to license this versatile hardware solution for advanced biological imaging and pharmaceutical analysis applications.
43	Medtech	Pneumonia	Medical device	Non-Invasive taVNS Device: A Neuromodulation Strategy for Interstitial Pneumonia	This medical device provides taVNS therapy to modulate systemic inflammatory pathways, improving symptoms of interstitial pneumonia. As a side-effect-free adjunct to drug therapy, it offers a safe management tool for chronic lung diseases. We seek medtech partners for clinical trials and device commercialization.
44	Medtech	Orthopedic Implant	Polymeric Material	Biomimetic Artificial Cartilage Implant for Durable Joint Repair	Our artificial cartilage implant mimics the mechanical properties of native cartilage while providing high durability and load-bearing capacity and lubricity. This off-the-shelf implant offers immediate structural support and is designed for the treatment of focal cartilage defects and early-stage osteoarthritis.
45	Medtech	Liquid Embolic	Polymeric Material	Cation-π Polymer Embolic Agent: Safe, Injectable, and Stable Vessel Occlusion	Our proprietary liquid embolic agent uses a water soluble cation-π copolymer that rapidly forms a thrombus-like gel via electrostatic interactions with blood components, enabling reliable vessel occlusion. Designed for smooth syringe/catheter delivery with minimal catheter tip adhesion, it supports safer, more controlled embolization.
46	Biotech/Pharma	Ophthalmology / Neurological disorders	Small Molecule / Drug Repurposing	Topical Tramadol Eye Drops for Blepharospasm and Ocular Hypersensitivity	This drug-repurposing approach uses topical tramadol to treat blepharospasm, a focal dystonia causing involuntary eyelid closure and ocular hypersensitivity. In a nine-patient exploratory study, one month of treatment improved motor symptoms in six patients and sensory symptoms in seven, supporting development as a less burdensome alternative or complement to botulinum toxin injections.