Biobytes

AI-Powered Sarcopenia Prediction Solution and Biobank Cohort-Based Discovery of Diagnostic and Therapeutic Biomarkers

Introducing Our AI-Powered Sarcopenia Solutions and Biomarker Discovery

AI-Powered Sarcopenia Prediction Solution and Biobank Cohort-Based Discovery of Diagnostic and Therapeutic Biomarkers

AI based Sarcopenia Prediction 'MyoTest'	Biobytes Sarcopenia Biobank 'M-Bank'	Novel Biomarker Discovery / Nutrients	Supplements
Sarcopenia Prediction AI Solution Using Questionnaire, Medical Records, and Grip Strength	Establishment of a Sarcopenia Patient Biobank Integrating Blood, Tissue, Diagnostic, and Clinical Data	Discovery of Diagnostic and Therapeutic Biomarkers Using Biobank Cohort Data	 Muscle Synthesis and Strength Enhancement 'Biact Tablet'
Additional Testing and Healthcare Services Enabled by Solution Use in Hospitals, Clinics, and Insurers	Discovery of Biomarkers for Sarcopenia Diagnosis and New Drug Development Using Biobank Data	Launch and Distribution of Biact Tablet, a Health Supplement Optimized for Muscle Synthesis and Strength Improvement	 Natural Jelly Sleep Aid 'Good Rest'

Business-Optimized Organizational Structure

Jungwoo Lee
CEO

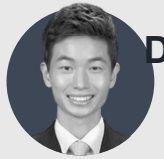
- Orthopedic Surgeon, MD, PhD
- Associate Professor of Medicine
- Board Member, KSS and KOSMI
- Certified Specialist, Korean Society of Sports Medicine

Jaewon Kim
VP/CTO

- MPH | Co-Founder
- Former Executive Roles at Digital Nutrition, Basgenbio, LifeSemantics, Pfizer Korea, and the Korean Cochrane Center

Sol Lee
CDO

- PhD | Public Health Data Expert
- Led Data Strategy & Analysis at Basgenbio, Pfizer Korea, NECA, Nanoori/Wooridul Hospital



Dukyung Kwon
Pharma & Bio R&D Team

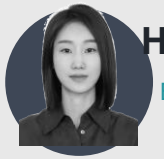
- Pharmacist
- Former Researcher, KAIST & Yonsei University

Seonwook Kim
Pharma & Bio R&D Team

- 15+ Years in Pharma & Biotech Sales

Hye Ji Kim
R&D Manager

- Senior Researcher | HealthCloud, InfraCube, Severance Hospital



Hyosun Hong
Bioinformatician

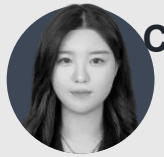
- M.S. in Bioinformatics
- BI Team, Korea University and HectoHealthcare
- 7 years of experience in bioinformatics analysis

Chan Jung Lee
AI Development Team

- Head of AI | Medical Statistics (MS), Evid Net, LifeSemantics

Ji Woo Kim
Software Development Team

- Full-Stack Developer
- Medical Deep Learning & System Architecture

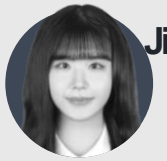


Chaemin Lee
Business Operations

- Certified Health Information Manager

Hyeyeon Shin
Biobank

- RN | Clinical Research & Biobank Operations Lead



Ji Young Kim
Biobank

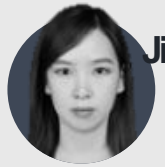
- RN | Biospecimen Collection & Handling

Minsu Kim
Biobank

- U.S. Registered Nurse
- Research Nurse, Kangbuk Samsung Hospital

Yura Kim
Regulatory Affairs

- 10+ Years in Regulatory Affairs
- GMP/ISO13485



Ji Young Lee
Design & Marketing

- 20+ Years in Design and Marketing

The Growing Burden of Sarcopenia and the Blue Ocean Opportunity

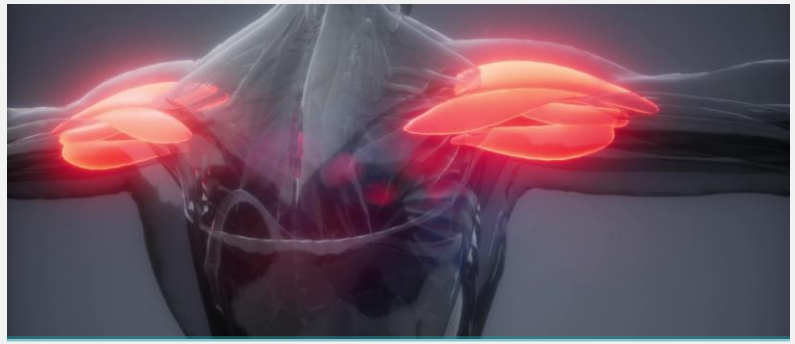
Muscle mass decreases by approximately 1% each year, and the resulting condition of impaired ability to perform daily activities is called sarcopenia.

Sarcopenia was first diagnosed in the U.S. in 2016, and only began to be diagnosed in Korea in 2021. Awareness of the condition remains low

Challenges in diagnosis and drug development have kept the market a blue ocean

01 What is **Sarcopenia**?

- Sarcopenia is a progressive loss of skeletal muscle mass, strength, and function associated with aging.



02 Why **Early Detection and Management** of Sarcopenia Matters?

- With a prevalence reaching 37% and a 4x higher mortality risk, sarcopenia poses a greater clinical burden than many chronic diseases.

03 Why the Sarcopenia Market Remains a **Blue Ocean**?

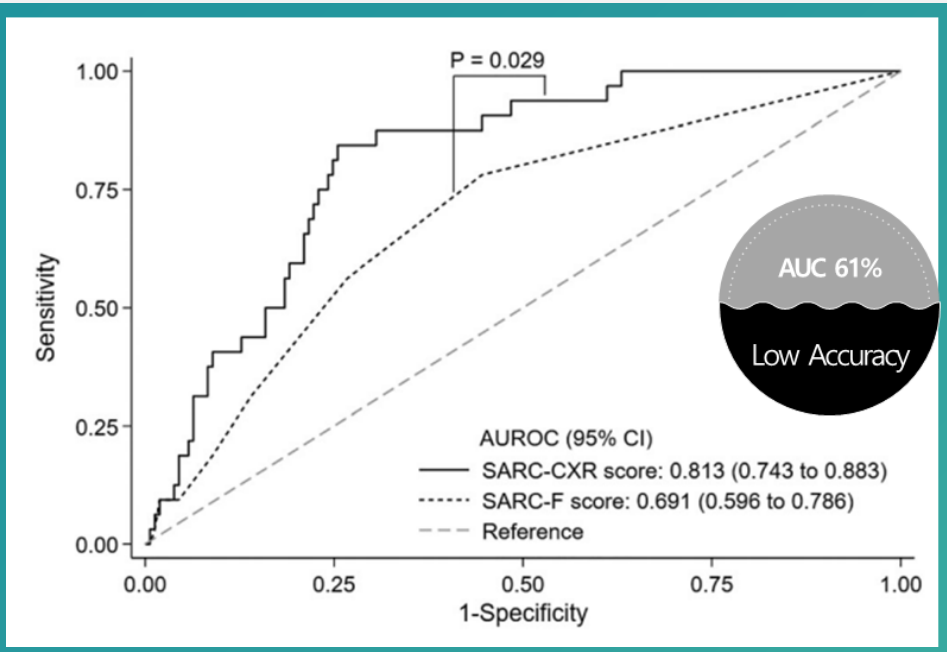
- Global recognition of sarcopenia: slow adoption, high barriers
  - 2016 (USA), 2017 (WHO), 2018 (Japan), 2021 (Korea)
- **Complex diagnostic criteria, expensive diagnostic equipment, new drug development failure**

Solution

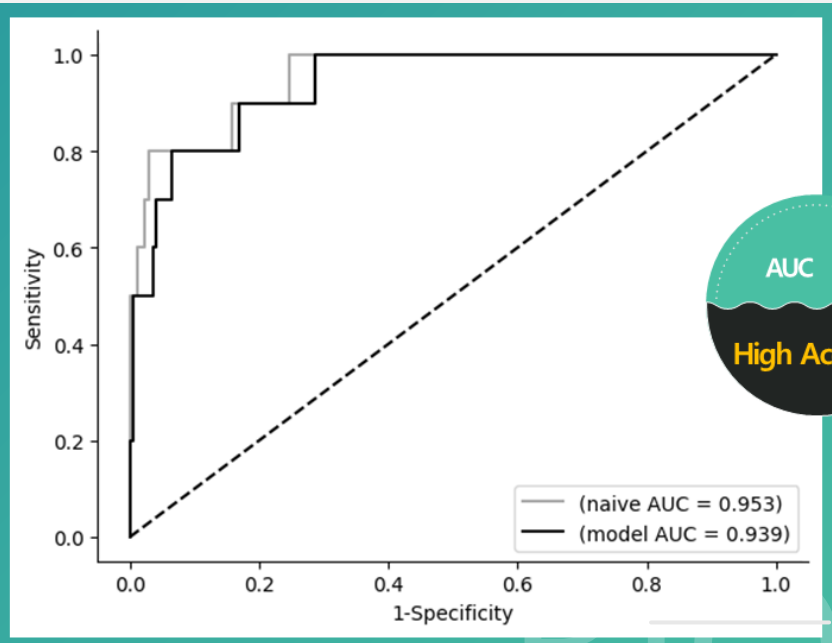
MyoTest: AI-Powered Sarcopenia Risk Prediction Solution

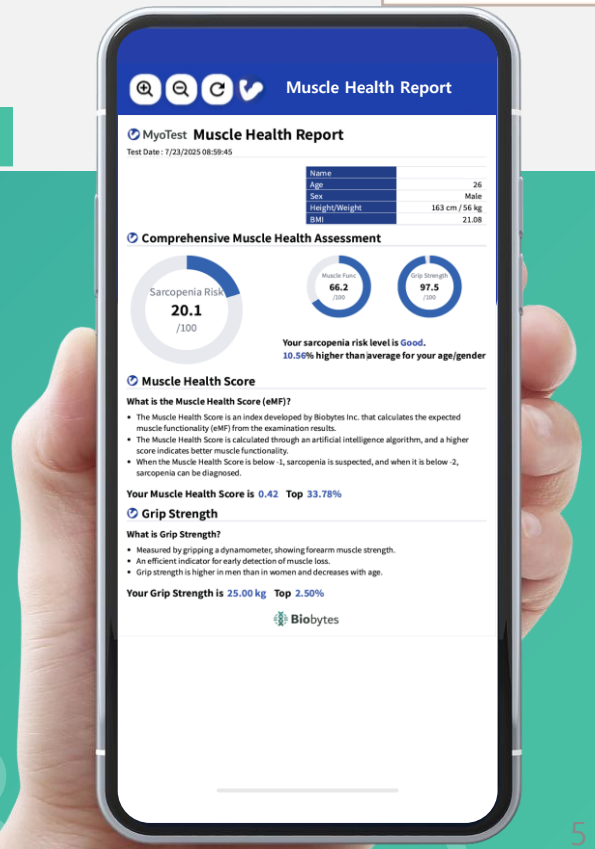
- MyoTest delivers a muscle health report in under **10 seconds by loading health check-up data**
- Results are accessible on both Web and App, with real-world validation completed and regulatory approval in progress
- MyoTest delivers **95% accuracy in sarcopenia risk prediction** — outperforming legacy models and enabling accessible, early scree
- **GMP and ISO 13485** certifications **completed**, SaMD (Software as a Medical Device) regulatory approval in progress

Legacy Models: Limited Accuracy in Predicting Muscle Mass



MyoTest by BioBytes: High-Accuracy AI for Sarcopenia Prediction





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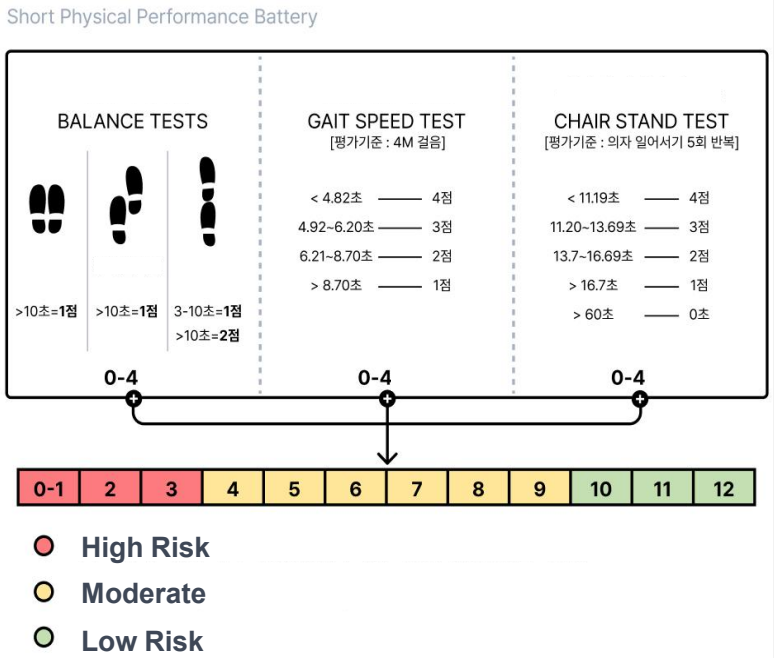
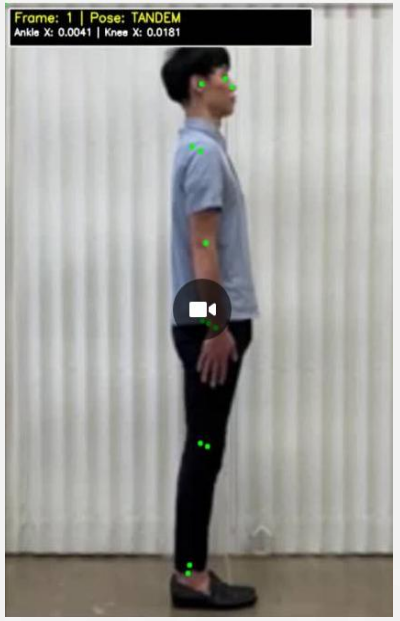
MyoTest: Development of a motion recognition-based SPPB score prediction model

SPPB (Short Physical Performance Battery): A test that assesses physical function in older adults, including balance, gait speed, and chair stand performance.

1) Automatic detection of body landmarks based on **pose estimation**
2) Automated **video-based measurement of key SPPB** assessments such as balance, gait speed, and chair stand
3) Significantly improved sarcopenia prediction accuracy and applicability in clinical and daily settings





Solution

M-Bank: Biobytes Sarcopenia Biobank Cohort

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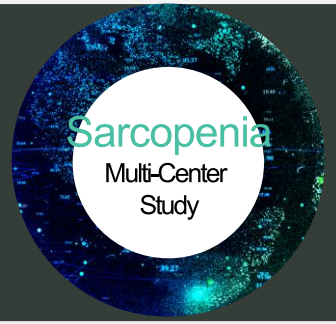
BSB is the **world's first multi-center sarcopenia biobank, targeting 3,000 patients by 2027** with longitudinal clinical and biomarker data

It enables early diagnosis and drug discovery, with future plans for tech transfer and advanced imaging integration

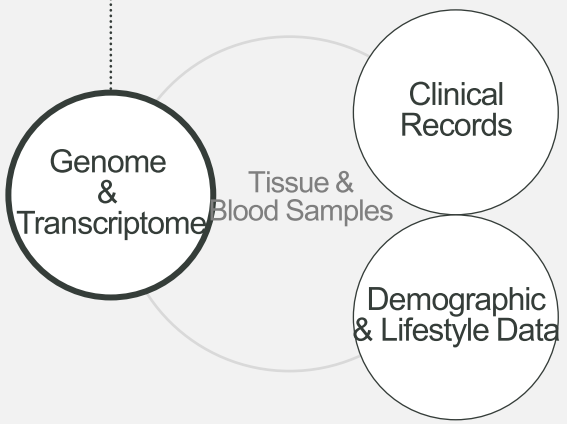


Global First: Sarcopenia Patient Biobank Database

Tracking Every Visits via Governmental & Multi-Center Data System Since 2025

Targeting 3,000+ by 2027

- Includes comorbidity data, blood and muscle samples for biomarker discovery in diagnosis and drug development.



- Medical Records: Diagnosis, Drug Prescription, etc.
- Health Checkup Data: BMI, SBP/DBP, FBS, TC, ALT, etc.

- Health Behavior: Exercise, Smoking, Drinking, etc.
- Family History

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Sarco-Finding: Biomarker Discovery for Sarcopenia Diagnosis and Therapy

- Leveraging biobank data to identify validated biomarkers through GWAS, druggability, and AI network analysis
- Targeting **early-stage licensing and revenue-sharing partnerships** to reduce risk and enable collaboration with pharma and healthcare companies

DATA

Sarcopenia Biobank

Multi Center Data
3,000+

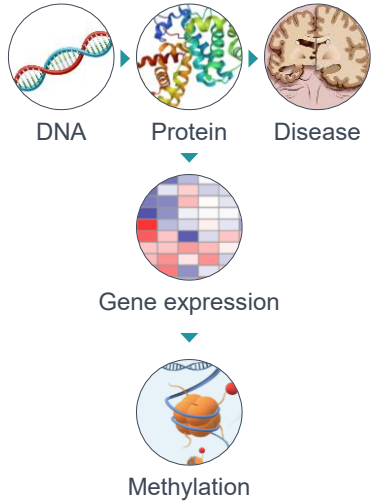
Health Check Up Data
1,000,000+

UK-Biobank & Etc Data
500,000+

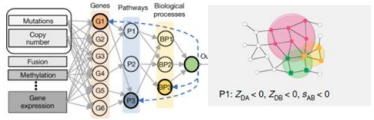
1 GWAS & GRS

- Multi Center Data
- SNPs in Gene Region
- Drug Mimicking SNPs
- Setting Weight for the SNPs
- Calculating Genetic Score

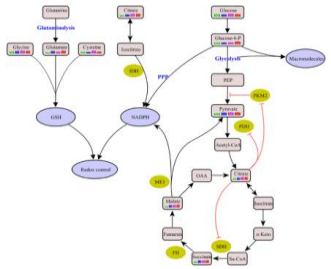
2 Druggability



3 AI & Network Analysis



4 Pathway Validation

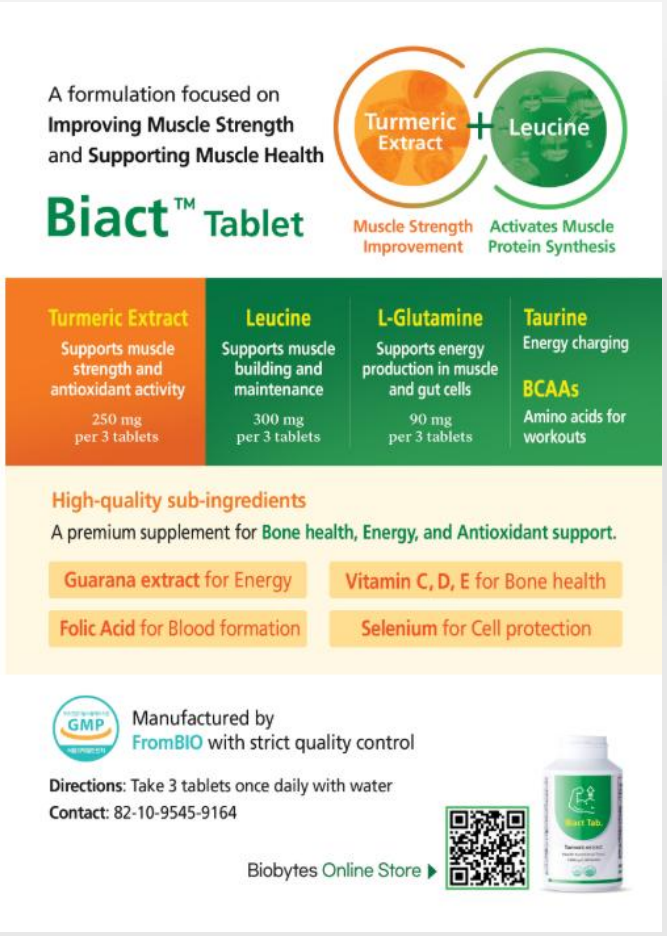


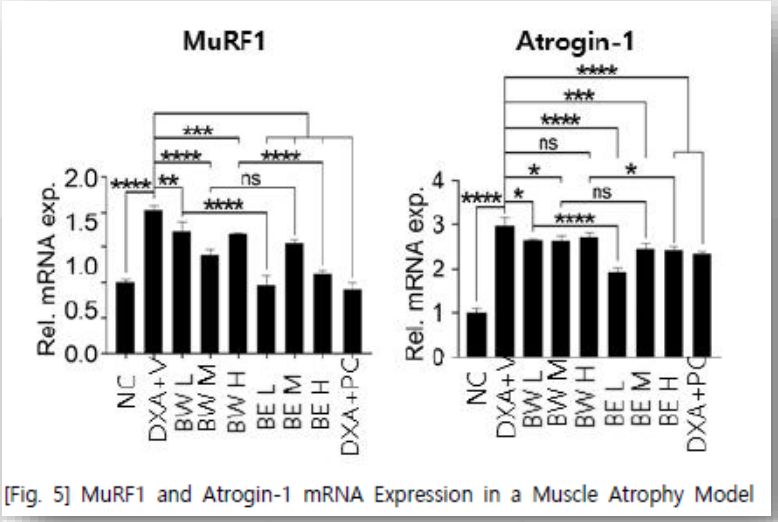
5 Results

- Novel Target
- Repurposing
- Combination

Biact: BioBytes' First Prescription-Based Nutraceutical

- Biact is the **world's first functional supplement targeting both muscle synthesis and strength**
- Now prescribed in over **50 clinics**, with nationwide offline/online expansion through hospitals, pharmacies, and retail channels
- *In vitro* test results confirmed dual mechanism of action: **inhibition of muscle degradation and activation of mitochondria**





[Fig. 5] MuRF1 and Atrogin-1 mRNA Expression in a Muscle Atrophy Model

Biact Tablet

Biact Water Extract

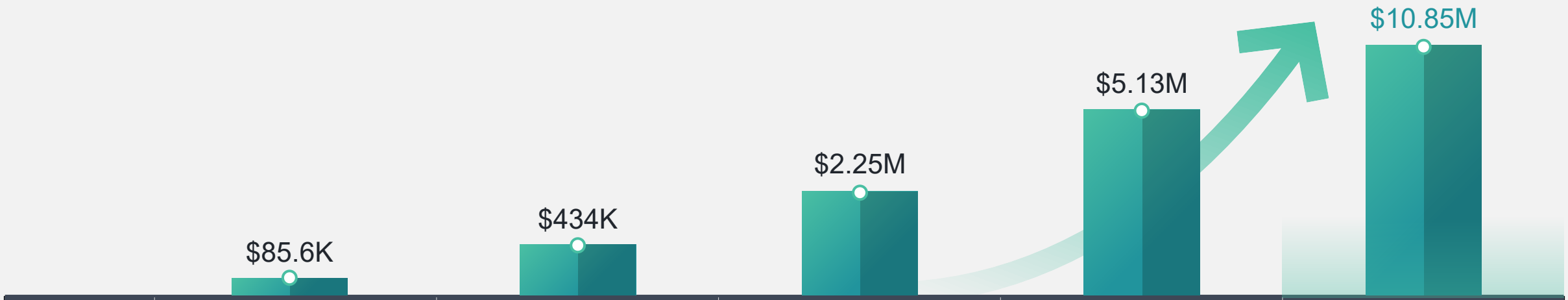
Biact Ethanol Extract

Full-Stack Business Model for Short-, Mid-, and Long-Term Revenue Generation

Business Area	Key Customer	Expected Outcome
Sarcopenia Prediction & Management AI Solution	Health check-up centers, hospitals, insurance companies	Solution Subscription Fees, Supplement-Linked Revenue
Functional Supplements	Hospitals, distribution partners, online/offline channels	Increased hospital revenue, proprietary distribution and retail sales
Out-Licensing of Biobank-Derived Sarcopenia Biomarkers	Domestic and global pharmaceutical companies	Milestone-based licensing revenue

Projecting Growth Through AI Solutions, Biobank Expansion, and Biomarker Deals

- Basic sales driven by AI sarcopenia prediction solutions and health supplements (approx. USD 92K in 2024 / approx. USD 277K by H1 2025).
- Major revenue from early biomarker licensing, aiming for IPO or M&A through diversified biobank data-driven revenue streams.



Items	2024	2025	2026	2027	2028
AI Solution & Biobank	MyoTest developed/supplied $77.4K	B2B/B2H Contract $77.4K	B2B/B2H Contract $102.7K	B2B/B2H Contract $128.4K	B2B/B2H Contract $153.7K
	M-Bank Completion	1,000 samples collected	2,000 samples collected	5,000 samples collected	10,000 samples collected
Novel Target/ Biomarker	Pipeline Setting	Discovery	Deal 1 $1.43M	Deal 1 $3.57M	Deal 2 $7.13M
Nutritional Supplements	Development of 1 product (Biact)	Biact / Nirex / Dreampop $356.6K	Additional launch of 2 product $713.3K	Additional launch of 2 product $1.43M	Additional launch of 2 product $3.57M
Total	$85.6K	$434K	$2.25M	$5.13M+IP	$10.85M+IP

Highlighting Our Key Achievements and Future Growth

Funding	Completed USD 430K Seed Funding in 2024 (Currently Raising Pre-A Round)
Revenue Growth	Achieved USD 260K in revenue within 18 months of founding (as of H1 2025), with plans to reach break-even in 2026 and secure long-term R&D funding.
Publications & Patents	Filed 4 patents and 1 PCT applications for sarcopenia and core technologies 10 SCI-level papers submitted or under publication
Exclusive Biobank	Exclusive Multi-Center Sarcopenia Biobank and Proprietary Technology
Rapid Growth Potential	Selected for Around 20 R&D and Government-Funded Projects, Including TIPS

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Pioneering the Future Standard of Muscle Health