



GENE TECHNO SCIENCE

Mothers
Security Code: 4584

Gene Techno Science Co., Ltd.

Financial Results for 3Q/FY2018 **(Fiscal Year Ending March 2019)**

February 5, 2019



Cautionary Statement

This information material is provided for understanding Gene Techno Science (“GTS”), not for soliciting investment in GTS shares.

Information provided in this material may contain so-called “forward looking statements”. These statements are based on current expectations, forecasts and assumptions that are subject to risks and uncertainties, which could cause actual outcomes and results to differ materially from these statements. Risks and uncertainties include success ratio of R&D projects, new regulations, and rules, relations with partners in the future, etc.

Financial Highlight

- 3Q financial results was in line with the forecast
 - ◆ Filgrastim biosimilars achieved the sales target as planned
 - Lower sales compared with the previous year was due to the timing difference of the shipment of Filgrastim. No impact on FY18 forecasts

Business Highlight

- Acquisition of 100% of Advanced Cell Technology and Engineering (ACTE) by the Share Exchange
- Execution of exclusive licensing agreement with Ocumension Therapeutics on biosimilar in ophthalmologic field



Overview of 3Q/FY2018 Financial Results

Financial Results for 3Q/FY2018

| | Sales (in millions of yen) | Selling, general and administrative expenses (in millions of yen) | | Operating profit (in millions of yen) | Ordinary profit (in millions of yen) | Net income for the year (in millions of yen) | Net income per share (in yen) |
|-------------------------------------|----------------------------------|---|--------------------------|--|---|--|-------------------------------------|
| | | Total | R&D expenses included | | | | |
| Results for 3Q/FY2018 (A) | 618 | 860 | (524) | -466 | -477 | -524 | -27.10 |
| Results for 3Q/FY2017 (B) | 777 | 991 | (656) | -515 | -512 | -513 | -26.85 |
| Change (A-B) | -159 | -131 | (-132) | 49 | 35 | -11 | |
| (Reference) Forecasts for FY2018 | 1,060 | | 1,300 | -1,180 | -1,180 | -1,182 | |

Key points

1. Steady earnings

Due to timing of shipment, Filgrastim biosimilar sales decreased vs. PY, but, no changes on FY18 forecasts.
Milestone revenue in biosimilars portfolio was recorded.

2. Steady progress of development

R&D spending was mainly on the biosimilar operations.
(Development is going smoothly)

3. SG&A expenses on schedule

Special payment in relation to the retirement of GTS chairman (45 million yen: extraordinary loss)

- The company split each share into two shares on July 1, 2018. Net income per share for the quarter is calculated based on the assumption that the split was conducted at the beginning of FY2018.



Acquisition of 100% ownership of Advanced Cell Technology and Engineering(ACTE) by the Share Exchange

GTS and ACTE - Strategic Rationale

GTS will realize the following objectives by integrating **our R&D experiences and know-how** into **dental pulp stem cell treatment platform of ACTE**

- 1. Expand alliances with various partners**
- 2. Accelerate developments of new products and treatments**
- 3. Provide patients with higher-level solutions early and stably**

Research and Development with SHEDs

What are SHEDs ?

One type of dental pulp stem cells that extracts from a **human exfoliated deciduous teeth**



Especially, ACTE runs a **stock business of the stem cells from human exfoliated deciduous teeth (SHED)**

| Features of SHED | Benefits in Research and Development |
|---|---|
| <ul style="list-style-type: none"> ➤ More opportunities to extract as it is exfoliated deciduous teeth and less burden on a donor ➤ Easy to differentiate into bone, cartilage and nerve cells ➤ More active as the stem cell is extracted from exfoliated deciduous teeth | <ul style="list-style-type: none"> ➤ Due to more opportunities for extraction, possible to secure a wealth of resources for R&D, and it enables to provide pharmaceutical companies with the stem cells ➤ Applicable for nervous system diseases such as spinal cord injury from its differentiation characteristics ➤ As it is young stem cells, it has higher capability of differentiation, proliferation. Higher tissue regeneration ability is expected. |



Enable to realize solid research and development - low-risk and high certainty by securing the stable stem cells platform and qualifying the targeted disease area.

For Successful Research & Development in Cell Therapy

The key success factor is

“Wealth of Resources” × **“Adaptability to target diseases”** × **“Clarification of Mechanism”**

| | |
|---------------------------------|--|
| Wealth of Resources | Utilize ACTE’s SHED bank and provide pharmaceutical companies with stem cells |
| Adaptability to target diseases | Evaluate and qualify the disease area from the characteristics of SHEDs |
| Clarification of mechanism | Since cell therapy, which is the next generation medical treatment, is still at the research stage, it is difficult to ascertain the full effectiveness. However pursuing its mechanism (why it worked) in accordance with demonstration of the effect is a key to success |

Based on the above the KSF, GTS secures following resources and prepares a plan which are critical for realization of cell therapy

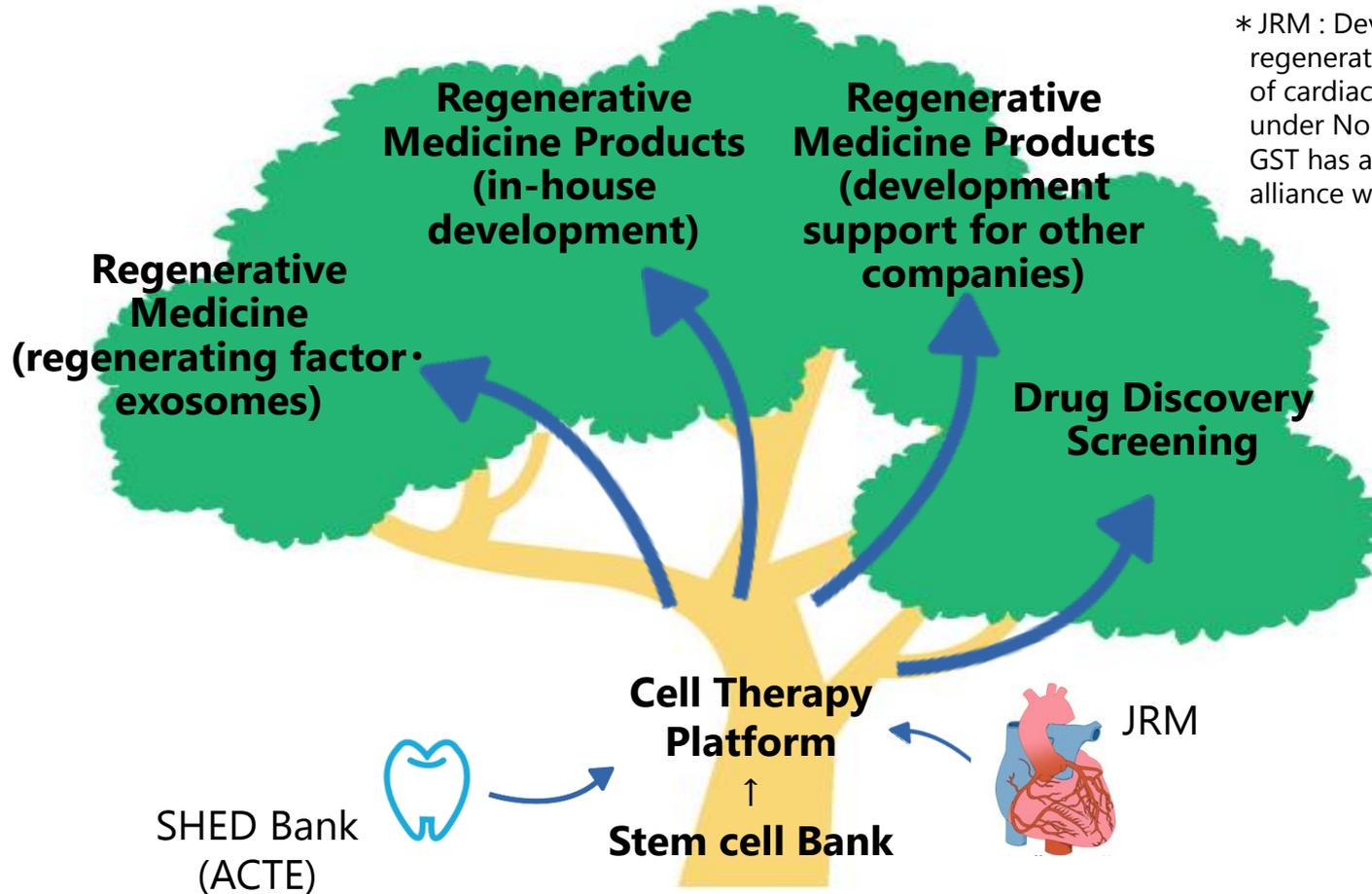


-  Stable supply of stem cells which is mandatory for R&D (SHED bank platform)
-  R&D resources, network and have qualified target disease area (GTS, academia, partners)
-  Alliance with clinical institute to evaluate an effectiveness at earlier phase and concrete plan (Class II clinical research under the Act on the Safety of Regenerative Medicine)

Future Business Development in Regenerative Medicine

Explore the developments in regenerative medicine business with our cell therapy platform

ACTE's **"SHEDs"** and **"cardiac stem cells"** of GTS/JRM*



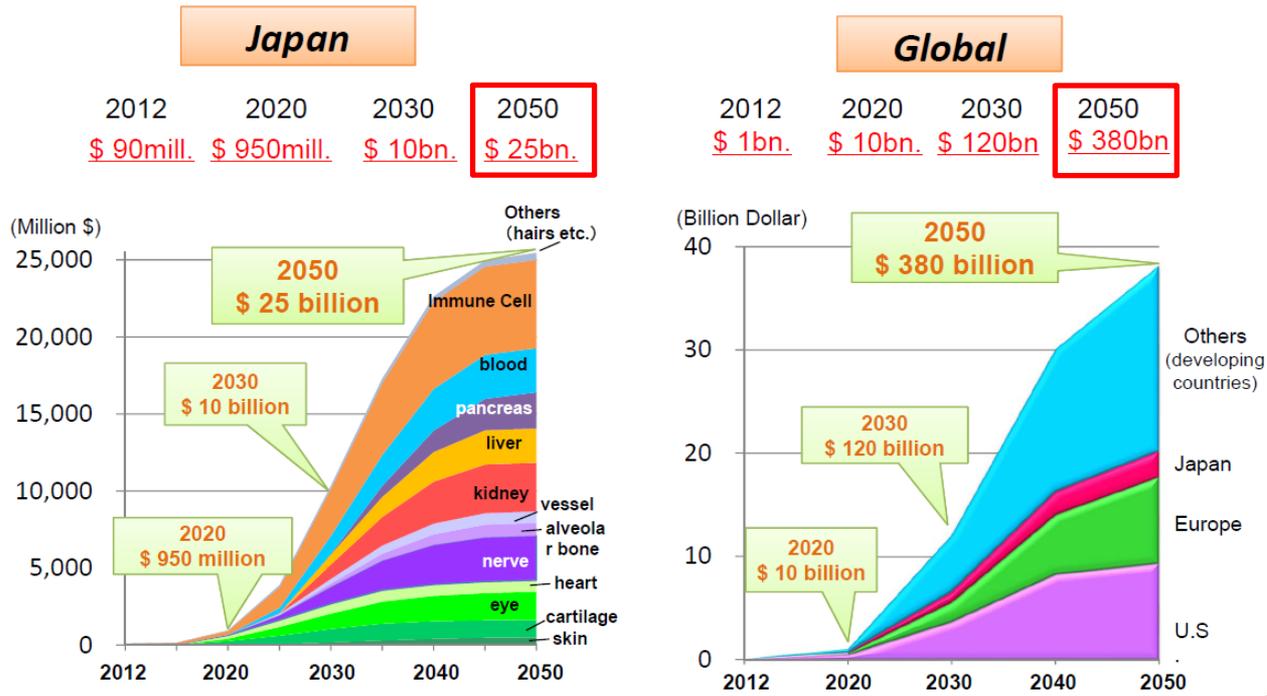
*JRM : Developing the regenerative medicine business of cardiac stem cells. Currently under Noritsu Koki Group and GST has a capital and business alliance with JRM.

Market Size of Growing Regenerative Medicine Business

Estimated market size of regenerative medicine



Regenerative medicine market expands rapidly both in Japan and in the world.



Full-scale entry into growing regenerative medicine market by leveraging the GTS's original cell therapy platform



GBS-007 Overseas Activities

Execution of exclusive licensing agreement with Ocumension

Execution of exclusive licensing agreement with Ocumension in ophthalmologic field (China and Taiwan)

<Key Points>

- Obtaining marketing authorization in China and Taiwan
- Receiving milestone payment per development stage and royalty per sales

<Ocumension Therapeutics>

- Established in May, 2018, 100% funded by 6 Dimensions Capital (investment fund specialized in Chinese and US healthcare)
- Aiming at business expansion in ophthalmologic drugs in Chinese market by recruiting professionals who have track record and experience in ophthalmologic field at global pharma

< Overview of Chinese market >

| | | | |
|--|-----------------------|---|-----------------------|
| Sales size of drugs in ophthalmology ※1 | 2018 3,000 oku-yen | ➔ | 2023 5,400 oku-yen |
| Ref) Number of AMD patients worldwide ※2 | 2020 196 million | ➔ | 2040 288 million |

* Population is aging in China and the number of people over 65 years old will be 170 million^(※3) (5 times as large as those in Japan) in 2020 . So, the market is growing

(※1) "Market Scope: China's Ophthalmic Market to grow 11.3% to \$4.5 Billion in 2023" Market Scope

(※2) "Global prevalence of age-related macular degeneration" Jost B Jonas

[https://www.thelancet.com/journals/langlo/article/PIIS2214-109X\(13\)70163-3/fulltext](https://www.thelancet.com/journals/langlo/article/PIIS2214-109X(13)70163-3/fulltext)

(※3) "Databook of International Labour Statistics 2017", The Japan Institute for Labour Policy and Trading **Challenge GTS3.0**



Product Pipeline Update

Progress in each pipeline

(1) Biosimilars Business

| Project | Therapeutic Area | Development Research | Clinical Trial | | Application/Marketing/Approval/Launch | Partner |
|------------------------------------|-----------------------|----------------------|----------------|---------|---------------------------------------|---|
| | | | Phase 1 | Phase 3 | | |
| GBS-001 Filgrastim | Oncology | [Progress bar: 100%] | | | | Fuji Pharma Co., Ltd. Mochida Pharmaceutical Co., Ltd. |
| GBS-004 Bevacizumab | Oncology | [Progress bar: ~10%] | | | | |
| GBS-005 Adalimumab | Immunological disease | [Progress bar: ~40%] | | | | Terminating an agreement with Changchun Changsheng Life Sciences Limited (China) and searching new partners |
| GBS-007 | Ophthalmic disease | [Progress bar: ~60%] | | | | Senju Pharmaceutical Co., Ltd. License out to Ocumension Therapeutics (China and Taiwan) |
| GBS-008 Palivizumab | Infectious disease | [Progress bar: ~20%] | | | | |
| GBS-010 PEG-filgrastim | Oncology | [Progress bar: ~30%] | | | | |
| GBS-011 Darbepoetin alfa | Renal disease | [Progress bar: ~80%] | | | UPDATE!! | Sanwa Kagaku Kenkyusho Co., Ltd. |

***New Drug Application in Japan of Darbepoetin alfa Biosimilar was submitted on September 28th, 2018**

Progress in each pipeline

(2) New biologics business

| Project | Therapeutic Area | Basic Research | Development Research | Clinical Trial | | | Application/Marketing/Approval/Launch | Partner |
|---|---------------------------------|---|----------------------|----------------|---------|---------|---------------------------------------|--------------------------------|
| | | | | Phase 1 | Phase 2 | Phase 3 | | |
| GND-001 <i>Anti alpha-9 integrin antibody</i> | Immunological disease, Oncology |  | | | | | | Kaken Pharmaceutical Co., Ltd. |
| GND-004 <i>Anti RAMP2 antibody</i> | Ophthalmic disease, Oncology |  | | | | | | Looking for partners |
| GND-007 | Immunological disease |  | | | | | | |

(3) New biotech business (regenerative medicine)

| Project | Basic Research | Clinical Trial | Conditional and Time-limited Authorization※ | Marketing (Further confirmation on safety and efficacy) | Marketing Authorization | Marketing Continues | Partner |
|--|---|----------------|---|---|-------------------------|---------------------|--|
| Cell therapy using cardiac stem cell for hypoplastic left heart syndrome |  | | | | | | Japan Regenerative Medicine Co., Ltd. |
| Induction of immune tolerance for organ transplant |  | | | | | | Juntendo University Juntan Bio Co., Ltd. |
| Cell therapy using mesenchymal stem cell derived from bone marrow for diabetic nephropathy |  | | | | | | Sapporo Medical University Minerva Medica Co., Ltd. |

※Expedited approval system for regenerative medicine

Post-marketing safety measures must be taken, including prior informed consent of risk to patients.



Towards Gene Techno Science 3.0

Our Strategic Direction in GTS 3.0



**GTS
3.0**

**Biotech Engineering Company,
striving for value creation**

**– Aiming at providing comprehensive
healthcare solutions for patients as well
as families and caregivers -**



**Explore new business opportunities
by providing a healthcare solution
for the therapeutic areas where a
current solutions is insufficient**

Our Focus

- ❖ Pediatric disease (including juvenile one)
- ❖ Orphan disease
- ❖ Intractable disease
- ❖ Asia-endemic disease

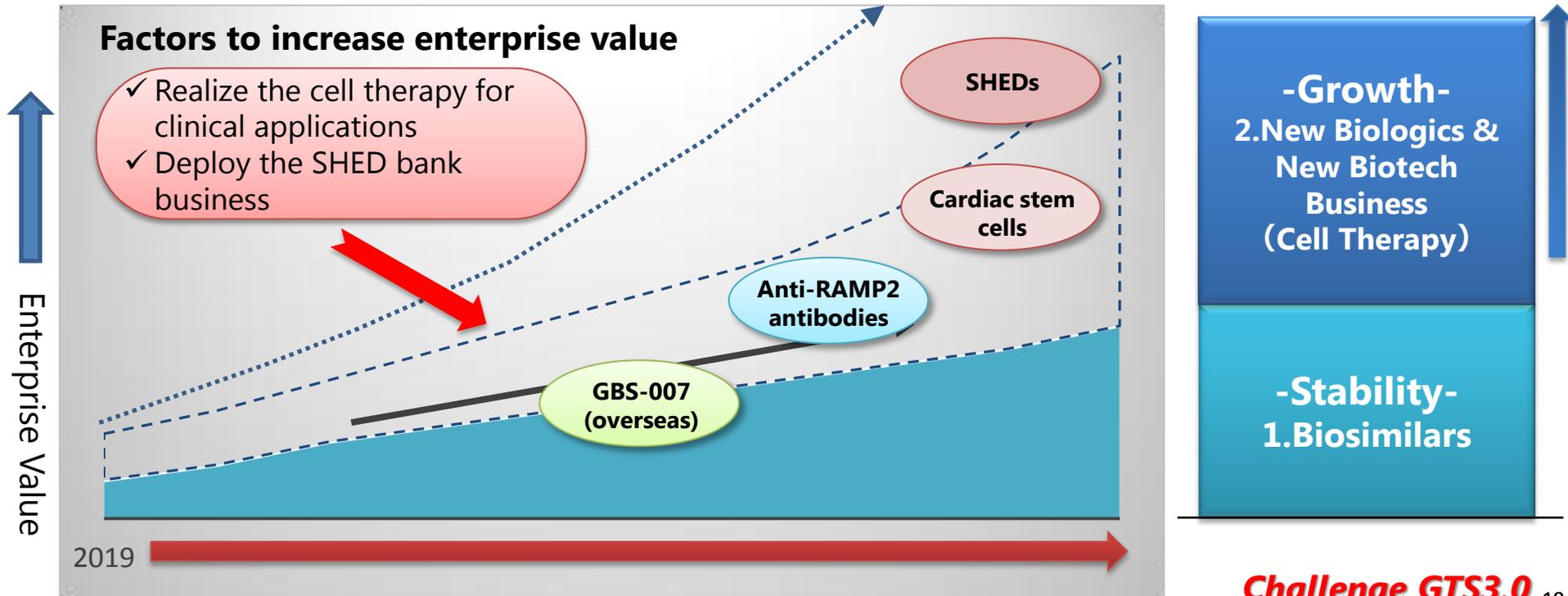
Realization of Maximum Impact on Enterprise Value

1. Biosimilars

- Achieve sales plan by progressing current pipeline on schedule
- Develop new pipeline and find partners in a timely manner
- Pursue licensing out outside Japan
→ Create revenue base with BSs to promote new biologics and new biotech business

2. New Biologics & New Biotech (cell therapy)

- Develop new pipeline and partners
- Upfront, license out, and milestone payments
- Develop partners with cell therapy platform (sales of SHEDs, collaborative research)
- Early recognition of profit from SHED bank business
- Accelerate development of new biologics



Gene Techno Science



***Biotech Engineering Company,
striving for value creation***