GENE TECHNO SCIENCE

Gene Techno Science Co., Ltd.

Execution of Share Exchange Agreement and Conversion of Advanced Cell Technology and Engineering into Wholly-Owned Subsidiary of Gene Techno Science

January 17th, 2019

Challenge GTS3.0

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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.

This material includes information on pharmaceutical products and regenerative medicine (or related products) etc.., which is being developed or launched. However, this is not intended to promote our products or provide medical advices.

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

GTS and ACTE - Strategic Rationale

GTS will build a business platform that supports the development and stable supply of regenerative medicine products and therapies which contribute to the earlier realization of GTS 3.0

Direction of GTS3.0

Targeting orphan diseases, intractable diseases and pediatric diseases, aiming at comprehensive healthcare solutions for patients as well as their families and caregivers as "Biotech Engineering Company, striving for value creation", and developing and providing not only the new biologics but also new therapeutic solutions.

Strategy

In addition to the biosimilars and new biologics business, GTS positions the regenerative medicine business (cell therapy) as the pillar of the new biotech business, and set it as an important driver to support the growth at an earlier stage.

Scheme

With this deal, GTS will acquire an infrastructure to ensure the realization of GTS 3.0 by entering into the regenerative medicine market at an earlier stage, where great growth potential is expected in the future

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**

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Transaction Summary

■ Transaction Summary

- GTS will become a wholly-owning parent company and ACTE will become a wholly-owned subsidiary company by executing the share exchange
- GTS will deliver GTS common share to the shareholders of ACTE who own ACTE's common share and class-A preferred share(*) by applying the following share allotment ratio (*the dividends of 160 JPY per Class-A preferred share from the residual assets will be paid to the Class-A preferred shareholders)
  - ACTE's common share : 1.30
  - ACTE's class-A preferred share : 1.48
  - Number of shares to be delivered : 7,250,740 shares (planned)
    (37.3% of outstanding shares)
- Upon the Share Exchange, GTS and ACTE's shareholders will execute the written confirmation that shareholders will not transfer the shares of GTS for a certain period of time from the effective date of Share Exchange ("Effective Date") as bellow.
  1. shareholders will not transfer GTS shares from the Effective Date to the date of six months from the Effective Date
  2. shareholders will not transfer more than 50% of GTS shares from the date of six months from the Effective date to the date of 1 year from the Effective Date
  3. the above (2) will not be applied if the transfer price is more than 150% of closing price of GTS share at the Effective Date

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Transaction Summary

■ Schedule

Extraordinary general shareholders' meeting (GTS and ACTE)	March 12, 2019
Execution of Share Exchange (Conversion of ACTE into subsidiary company)	April 1, 2019

■ Impact on Financial Performance

Impact on the financial performance of GTS for this fiscal year is being reviewed and not fixed. If the necessary of revising and/or any matter to be disclosed, such information shall be promptly disclosed.

Corporate Overview - ACTE

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Corporate Profile

Company Name	Advanced Cell Technology and Engineering Ltd. (“ACTE”)
Capital Stock	372 million Japanese Yen
Date of Establishment	October 30, 2008
Name and Titles of Management	Koichi Otomo, President and CEO Shinya Kurebayashi, Board of Director and Executive Vice President Kenji Otani, Board Director and General Manager of R&D Division
Scientific Consultant	Takayoshi Yamaza, Associate Professor of Department of Dental Science Graduate School of Dental Science, Kyushu University Masaki Honda, Professor of Department of Oral Anatomy, Aichi Gakuin University School of Dentistry
Number of Employees	17 (Board of Directors : 6 (non-resident: 1), auditor 3 (non-resident : 2)
Main Office	Headquarter (Tokyo), ACTE Tokyo Regenerative Medicine Center (Tokyo), ACTE Yamanashi Regenerative Medicine Center (Yamanashi)
Main Business	Regenerative medicine business ・Autogenous dental pulp stem cell bank business ・Allogenic dental pulp stem cell bank business

ACTE's Business Area

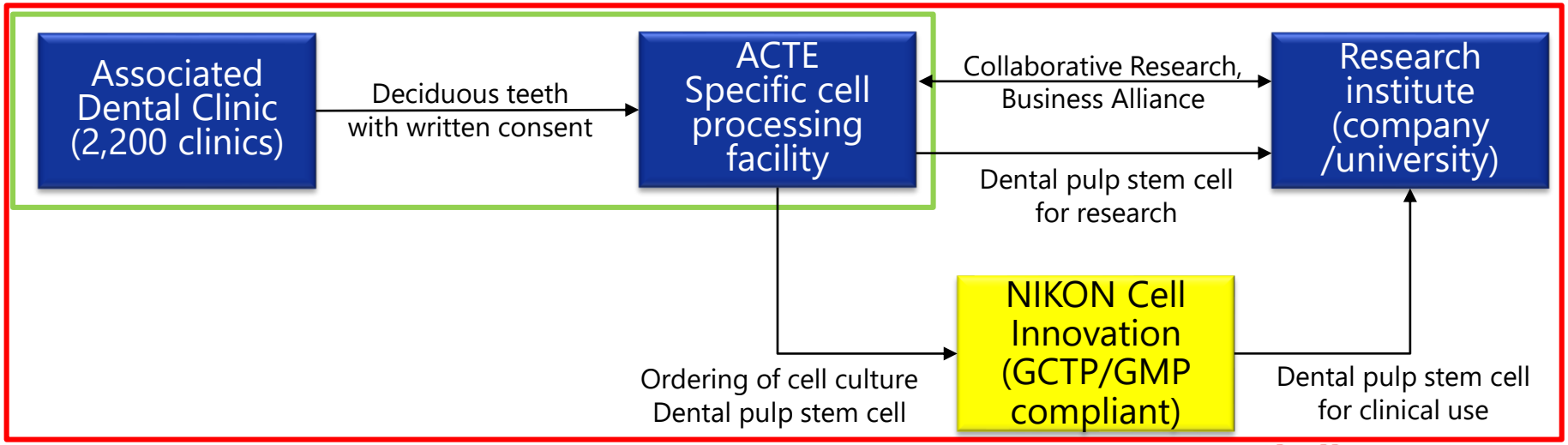
Two Main Business Area

Dental Pulp Stem Cell Bank (Autogenous)

- Autogenous dental pulp stem cell bank business
- Increase the business from medical institutions providing regenerative medicine, and expand into cell processing business (specific cell processing facility)

Dental Pulp Stem Cell Bank (Allogenic)

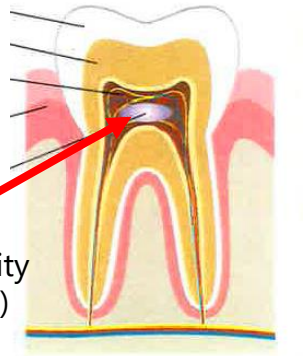
- Allogenic dental pulp stem cell bank business
- Provide company and university with dental pulp stem cells for researches (Daiichi-Sankyo, Eisai, Sekisui Kagaku)
- Business alliance with Nikon, and under development of dental pulp stem cells for clinical use with Nikon Cell Innovation



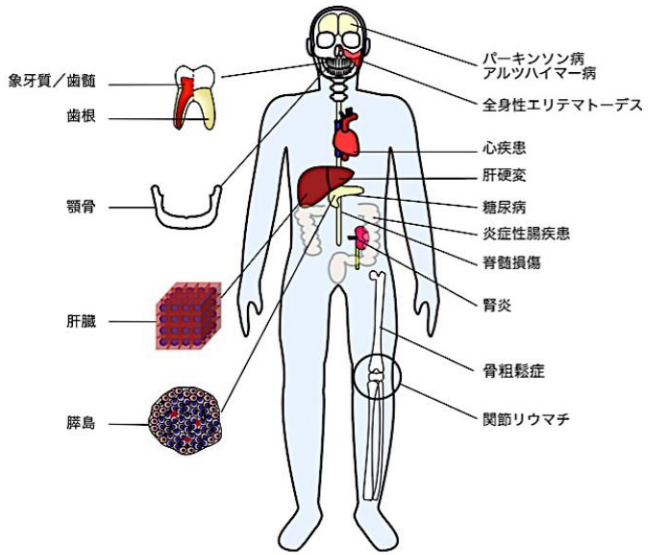
Dental Pulp Stem Cell Business of ACTE

ACTE's Core Technology : "Dental Pulp Stem Cell"

- Dental pulp stem cells exist inside teeth (dental pulp cavity)
- Derived from neural crest cell, and differentiated into head and face skeleton, ganglion, and odontoblast etc..
- Especially the stem cell from exfoliated deciduous teeth is active and has more capability to repair and self-renew



	Stem cells from exfoliated deciduous teeth	Other Mesenchymal stem cells
Age of Donor	5~12 years old	Not only child but also adult
Timing of extraction	Maximum 20 times /donor	Relatively limited time of extraction
Burden on Donor	Easy to extract before exfoliation	Including invasive methodology
Ethical Issues	Usually treated as medical waste	depends

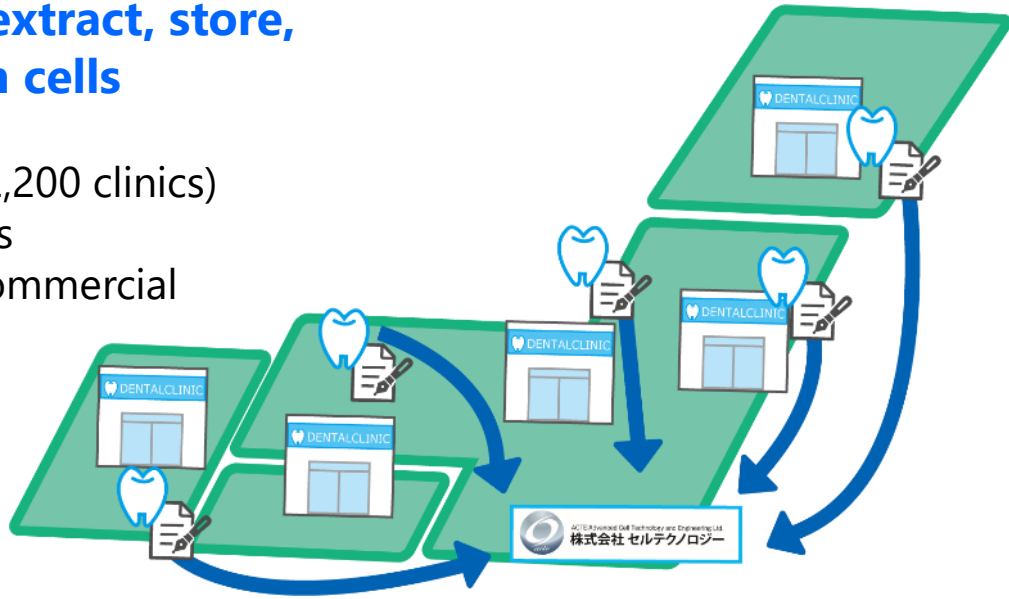


Sonoda et al. Arch Stem Cell. 2015より改変

Dental Pulp Stem Cell Business of ACTE

ACTE established a platform to stably extract, store, and provide allogenic dental pulp stem cells

- Collaborate with the dental clinic (approx. 2,200 clinics) nationwide, and store dental pulp stem cells
- Obtain consent from donors to apply for commercial use such as researches and treatments



Business alliance with Nikon Corporation for establishing a master cell bank of dental pulp stem cells for clinical use

- Tie-up with Nikon Corporation. Its subsidiary- Nikon Cell Innovation provides contracted developments and production services in Japan (runs GCTP1 / GMP compliant cell manufacturing facility)
- Provide stem cells to companies / research institutions with a flexible contract scheme
- Widely to be used for clinical trials and commercial use
- Ability to deal with contracted manufacturing of end products as required (by Nikon Cell Innovation)

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Full-scale Entry into Regenerative Medicine Business (Cell Therapy / Regenerative Medicine Products)

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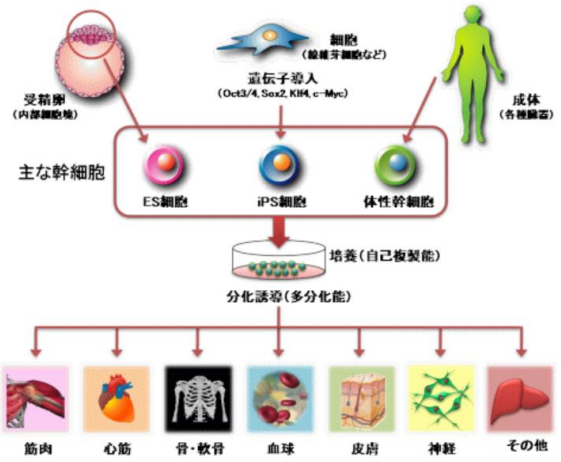
Significance of Integrating ACTE Business into GTS

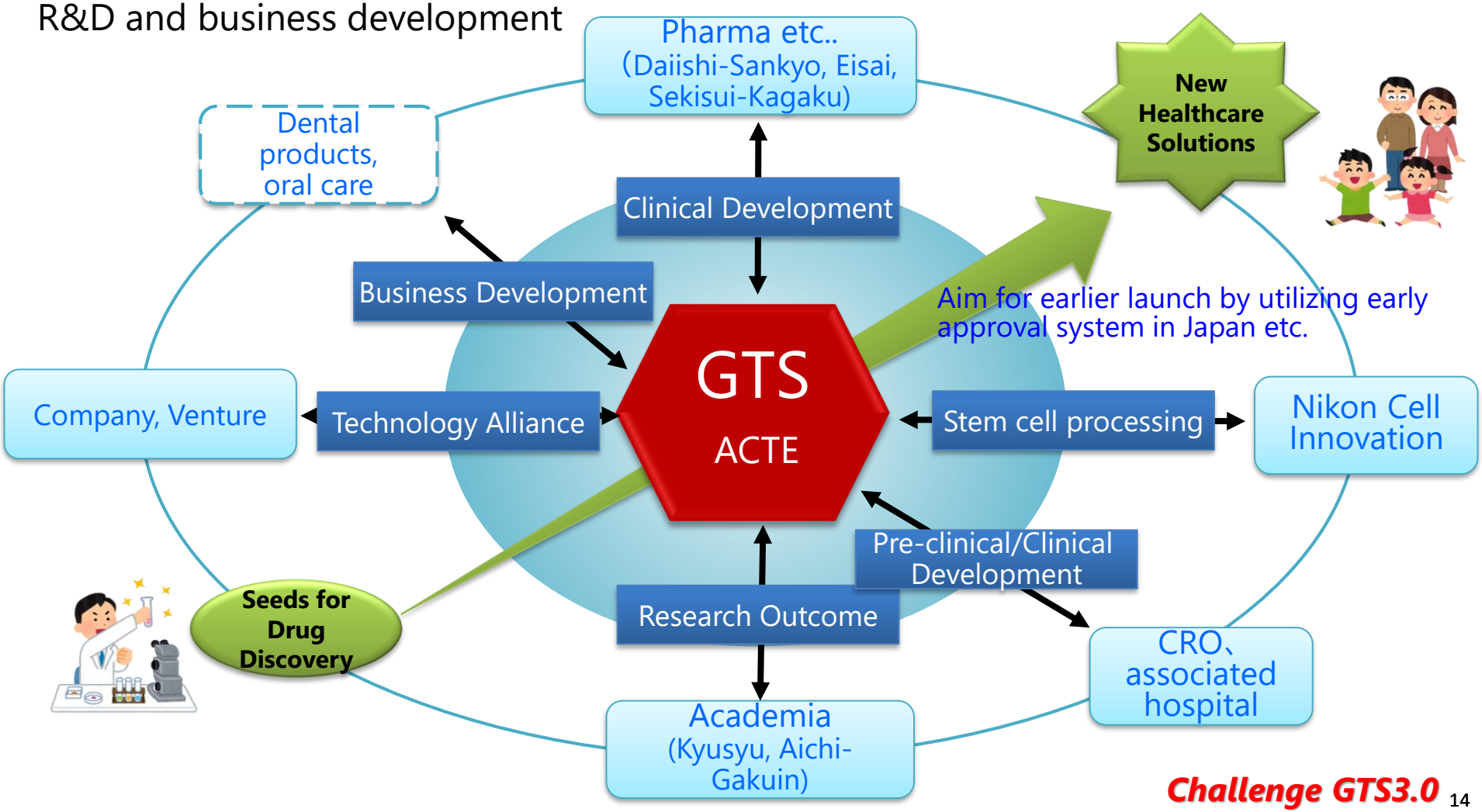
- Cell therapy can be built upon a combination of **"cell culture/processing technology"** and **“advanced application for diseases."** However, it is applied for limited diseases at present since "cell culture and processing technology" has not yet been established
- In recent years, culturing and processing technologies for iPS cells have been established and many research institutes and companies have entered into the development of iPS-derived cell therapy. However, it still remains challenges, and therefore a stable processing technology of the mesenchymal stem cells is required.
- Although dental pulp stem cells have been attracting attention due to their availability and stability, their manufacturing technology has not been established, and there are only a few cases of validation of efficacy. However, ACTE established its own manufacturing technology by the collaborative research with an Associates Prof. Yamaza of Kyushu University and evaluated the efficacy for many cases.
- Moreover, in cooperation with the Nikon Cell Innovation, the manufacturing technology is being enhanced and the feasibility of deploying to others is also increasing.
- By obtaining the cell therapy platform using dental pulp stem cells, GTS will be able not only to develop its own cell therapy technology, but also to provide many research institutes and companies with the opportunity of co-development through the provision of dental pulp stem cells themselves and cell processing technology as well.



CAR-T etc.

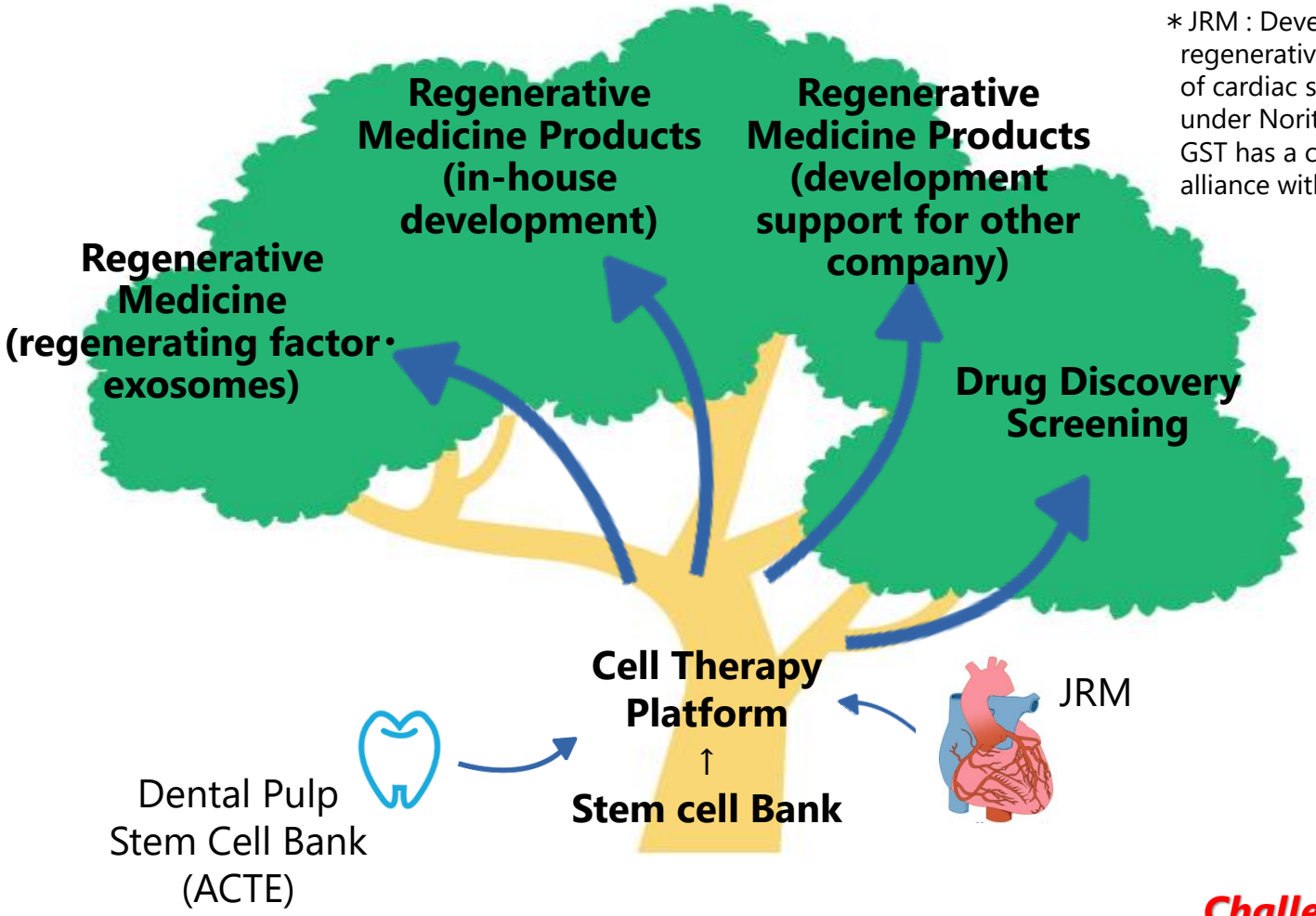
Synergy and Acceleration of Commercialization

Having ACTE's dental pulp stem cell platform and established network, GTS will accelerate commercialization of new products and therapeutic solutions by leveraging its experience and know-how on project management accumulated through the past R&D and business development



Future Business Development in Regenerative Medicine

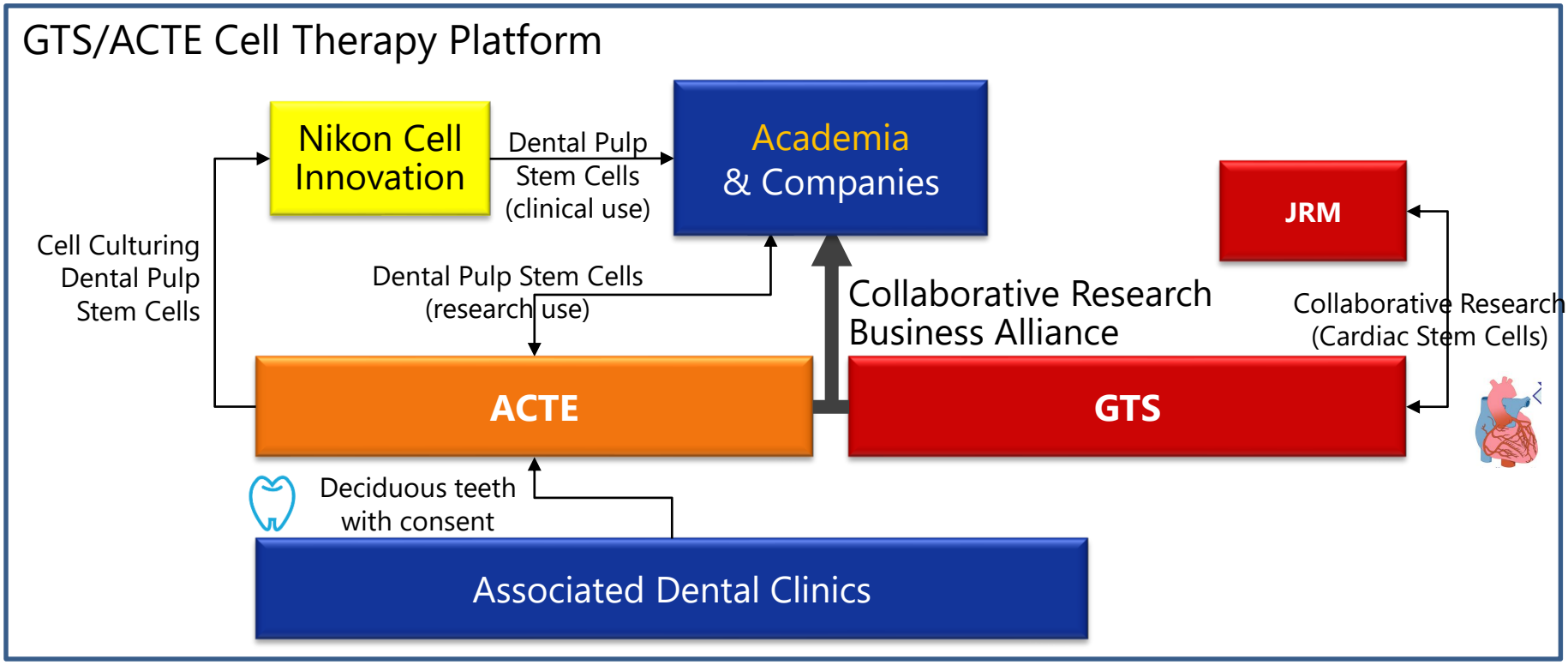
Explore the developments in regenerative medicine business
with our cell therapy platform of
ACTE's "dental pulp stem cells" and "cardiac stem cells" of GTS/JRM*



＊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.

Future Business Development in Regenerative Medicine

Leveraging the established dental pulp stem cell bank of ACTE, GTS will deploy our businesses widely and quickly. And the know-how and scientific insight gained from ACTE business will be utilized for the developments of GTS/JRM's cardiac stem cell business as well, such as the areas like expanding from autogenous to allogenic, or establishing cell bank.



Regenerative Medicine Products (in-house development)

Regenerative Medicine Products (development support for other companies)

Regenerative Medicine (regenerating factor・exosomes)

Drug Discovery Screening

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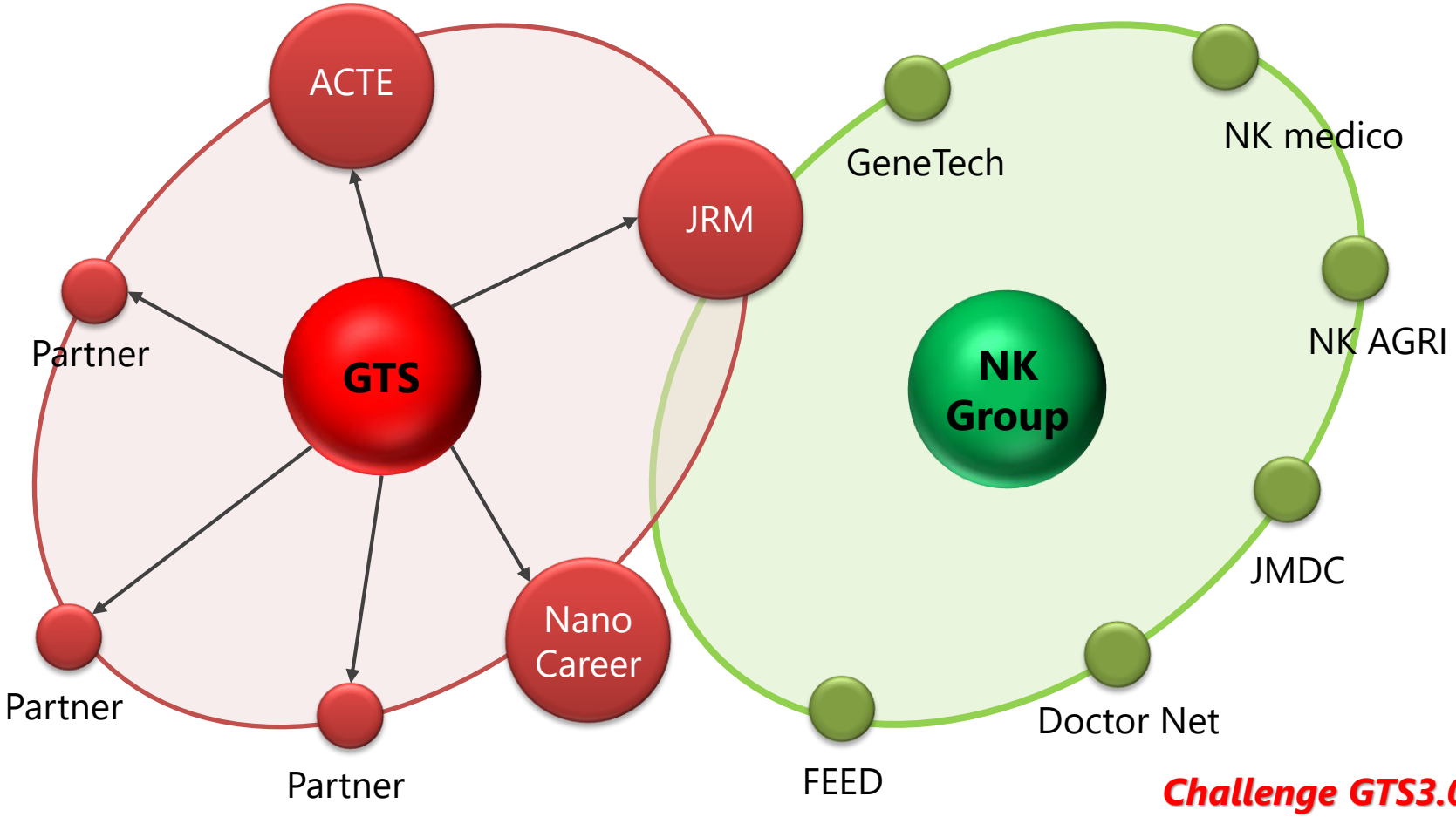
For Comprehensive Healthcare Solutions

Create an environment which allows us to collaborate with best partners

- Provide a new healthcare solutions by integrating each technology
- Leverage capabilities within NK Group, especially with JRM and NanoCareer
- Promote business in various area with ACTE



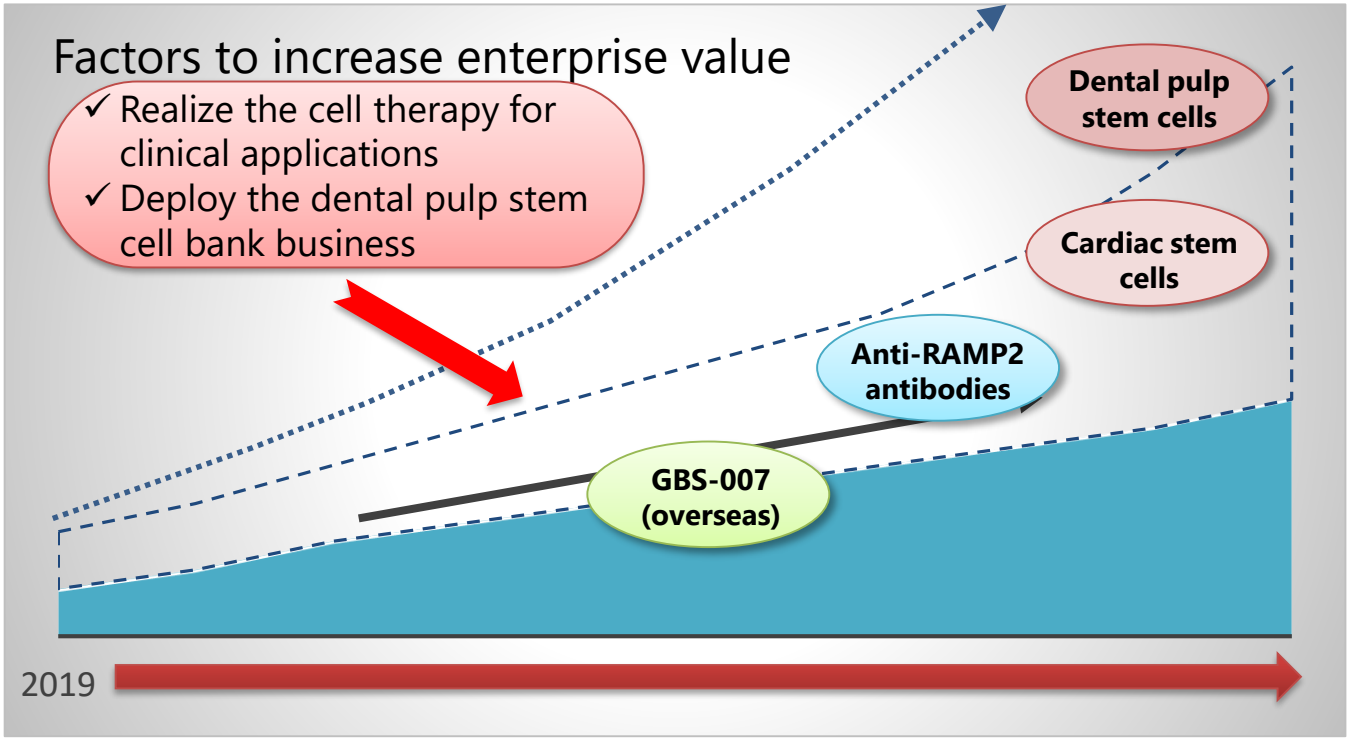
Realization of Maximum Impact on Enterprise Value

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 dental pulp stem cells, collaborative research)
- Early recognition of profit from dental pulp stem cell bank business
- Accelerate development of new biologics

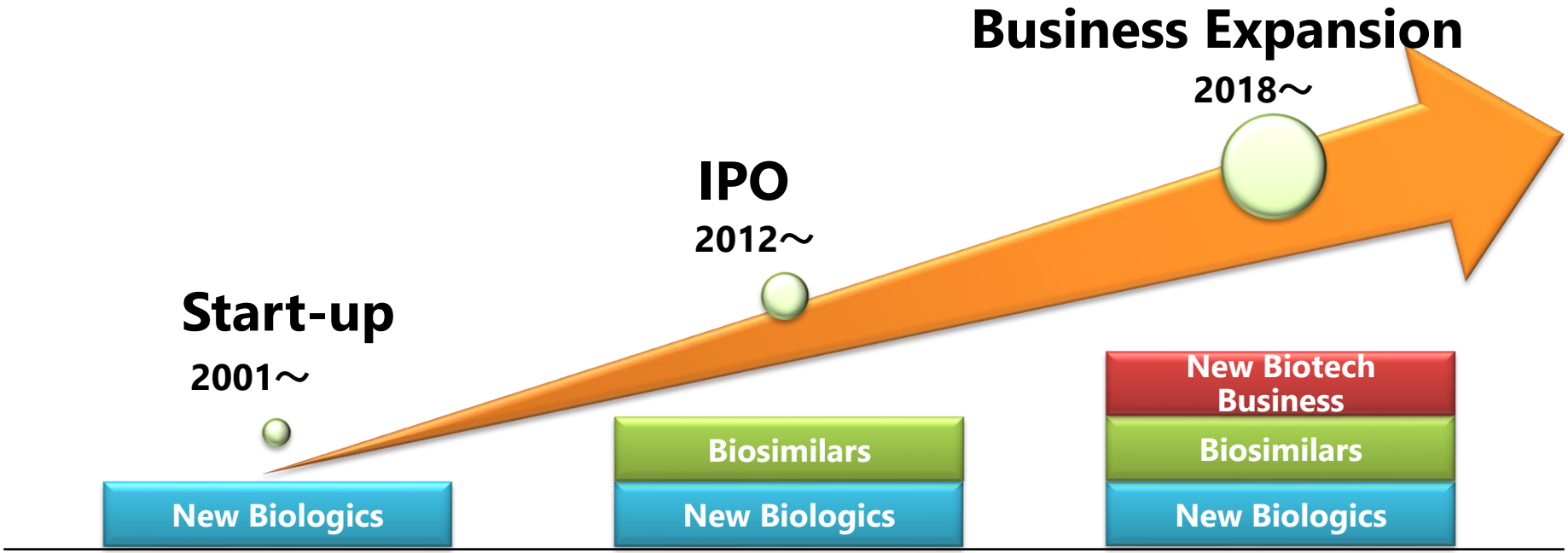


-Growth-
2.New Biologics & New Biotech Business (Cell Therapy)

-Stability-
1.Biosimilars

Towards Gene Techno Science 3.0

Our History from GTS1.0 to 3.0



GTS1.0

- ✓ Founded as a spin-out venture from Hokkaido Univ.
- ✓ Acquired basic biotech technology

GTS2.0

- ✓ Launched one biosimilar product
- ✓ Listed at Mothers of TSE

GTS3.0

- ✓ Strive for creating healthcare solutions based on the technology and accumulated experience/know-how

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

Our Strategic Direction in GTS 3.0

- **Change the current situation in pediatric care in Japan**
  - Most of pharmaceutical company seems to avoid stepping in this area due to the difficulty of clinical development, smaller market size, etc..
  - The number of drugs which have pediatric indication is limited
    - → **Social significance is high to provide more drugs to pediatric and juvenile patients who will contribute to economic growth in the future**

- **Develop wider and more comprehensive healthcare solution for pediatric patients, patients with orphan and intractable disease and their family and stakeholders**
  - Not only save the life of pediatric and juvenile patients with innovative drugs, by supporting their life after the cure, contribute to the total healthcare for all stakeholders surrounding patients
    - → **Contribute to a healthier and more fulfilling life while closely staying with patients as well as many people surrounding them**

- **Leverage our project management style which has a high affinity to GTS 3.0 direction**
  - Our virtual management style enables us to collaborate with various external stakeholders in R&D and manufacturing stage in a flexible way
  - Our project management style can facilitate more creation of new technology by leveraging the strength of each partner through collaboration
    - → **Contribute to provide credible products and services to society flexibly responding to the biotechnology field which is constantly advancing**

GTS3.0：Our Mission

We believe our commitment to society will contribute to the brighter future

1. Deliver Japanese sophisticated biotechnology all over the world

In Japanese university or research institutes, various and sophisticated biotechnologies are under research and development. By applying those technologies, developing credible products and services are essential for GTS to contribute to society not only in Japan but also across the world. In addition, we believe it is also truly important for us to take this role as one of the Japanese bioengineering company in the world.

2. Brighter future for children

Declining birthrate and the aging population becomes a social issue not only in Japan but also many countries in the world. It is no doubt that children and young people will be the generation to create next society. While population in this generation is declining, we think the most important thing is for those young people to be able to live healthier and higher quality of life. In order to realize such society, we believe biotechnology could provide them with the solutions from various point of view.

Gene Techno Science

Biotech Engineering Company,
striving for value creation