



January 17, 2019
Gene Techno Science Co., Ltd.
Code: 4584 (TSE Mothers)
Masaharu Tani, President & CEO

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

Tokyo, January 17, 2019 – Gene Techno Science Co., Ltd. (TSE Mothers: 4584 “GTS”) resolved at the meeting of the Board of Directors held on January 17, 2019 to conduct the share exchange (hereinafter “Share Exchange”) in order to make Advanced Cell Technology and Engineering Ltd (“ACTE”) a wholly-owned subsidiary of GTS, and both companies have executed a share exchange agreement (hereinafter “Share Exchange Agreement”).

The Share Exchange will be conducted after the Share Exchange Agreement is approved by the resolution at the extraordinary general shareholders’ meeting of both respective companies. Pursuant to the Share Exchange, ACTE will be subject to the specific subsidiary of GTS.

1. Purpose of the Share Exchange

GTS started up new biologics business in 2001 and called this period as GTS1.0. In 2012 GTS was listed on Mothers of TSE set a new vision “GTS2.0”. The main focus has been put on biosimilars business which established a good business platform. Based on the achievement of GTS1.0 and 2.0, GTS has now announced its next vision “GTS 3.0 – Biotech Engineering Company, striving for value creation” in 2018, which targeted the pediatric disease as a core business in addition to the areas which GTS has been engaging till today such as the orphan disease and intractable disease. The aim is to provide patients as well as families and caregivers with the comprehensive healthcare solutions by the development of new drugs and therapeutic solutions.

Generally, there is no effective solution for intractable diseases under current medical technologies and medicines, therefore it is required to develop a completely new solution

different from existing treatments. For this situation, a regenerative medicine which repairs or self-renews the important tissues and organs such as myocardium, nerve, bone, skin, etc. with stem cells is expected as a potential medical treatment for intractable diseases as stem cells has a multipotency to differentiate, self-renew, and adjust immune system. Thus, GTS has positioned a regenerative medicine as our important key driver for future business, and been keenly promoting research and development for these years. However, as described below, there are obstacles to stably secure and preserve stem cells, therefore establishing a scheme and technology for obtaining and processing stem cells is considered as big challenge in order to apply them for a clinical medical treatment. ACTE has been focusing attention on the stem cells derived from a dental pulp existing inside teeth, and founded in 2008 to develop tissue-engineered medical products utilizing the dental pulp stem cells. ACTE owns a cell bank to stock dental pulp stem cells for the first time in Japan, and currently in cooperation with approx. 2,200 dental clinics and collaborates with pharmaceutical companies and research institutes to realize the regenerative medicines with the stocked dental pulp stem cells.

Under these circumstances, in order to realize GTS 3.0, GTS put a high priority on the regenerative business (cell therapy) as the important key driver for the future, and has been considering the several strategic options while at the same time ACTE has been searching new business area with the dental pulp stem cells. In such situations, GTS and ACTE developed mutual understanding, started discussing about the future possible collaborations in the same direction, and finally came to the conclusion that this collaboration would lead to create big synergy in regenerative medicine business for both.

How to secure stem cell resources stably for practical application of regenerative medicine is an important requirement for successful business development. Currently it is generally extract stem cells from bone marrow, adipose tissue, and umbilical cord, however the methodologies to collect cells from those tissues are invasive and have limited opportunity, thus this situation creates big hurdle in the business. In contrast, stem cells derived from dental pulp is non-invasive and has more opportunities since the collection is available during the routine dental acts of deciduous teeth. In addition, dental pulp stem cells have characteristics easily to be divided into bone, cartilage, nerve cells compared with the other stem cells, thus it is expected to be applied for the diseases which could not be cured at present. Through our experiences in regenerative medicine business to date, GTS recognizes the dental pulp stem cells from exfoliated deciduous teeth have more capability to repair and self-renew with its immaturity, and considers

this is the best solution for our business.

ACTE has already established a platform to extract, store, and provide dental pulp stem cells by collecting the deciduous teeth from associated dental clinics, and generated sales from this business. The ability to provide high-quality stem cells for a research and development by other companies indicates that it is applicable not only for autogenous cell therapy using their own cells for the treatment of patients themselves but for the allogenic cell therapy applicable to others, which is highly versatile coupled with many uses of dental pulp stem cells. Such a cell therapy platform is the first time in Japan and expected to create more reputations by accumulating the proven developments. Pharmaceutical companies are shifting the focus area to intractable diseases and stem cells will be more required for their developments since the regenerative medicine is important key factor for those diseases as previously described. Thus, this trend will lead to further business expansion in line with the increasing reputation and values of dental pulp stem cells. In fact, ACTE has already initiated collaboration with several companies which recognize the potential of dental pulp stem cells to realize regenerative medicine products through ACTE's cell therapy platform, and started growing business.

Based on the above background, GTS has highly evaluated the stem cell business of ACTE as well as the potential of dental pulp stem cells themselves, and expects the further business expansion in regenerative medicine business by integrating our technologies and knowhow on biosimilars' R&D and CMC, and the technology and know-how acquired in the cell therapy through JRM, which we have been working over the years. For R&D of regenerative medicine products for intractable diseases, the technology to process stem cells for each targeted disease is essential. Our expertise would expand the application area and it will lead to the acceleration of collaborative research with pharmaceutical companies and research centers. Recently, Japanese Ministry of Health, Labour, and Welfare implements measures to expedite the realization of regenerative medicine such as Regenerative Medicine Promotion Act for promoting smooth and rapid clinical research and also the accelerated drug approval program under Pharmaceutical and Medical Device Act. Those governmental initiatives prepare the better R&D environment and provide a critical boost to the future. Considering all those backgrounds, acquisition of dental pulp stem cells stock business makes our revenue base sound, and GTS will be able to create more opportunities in collaborative researches with pharmaceutical companies and research institutes, which leads to deliver new products and new therapies for wider variety of disease through the cell

therapy platform. In addition, this cell therapy platform has a potential to promote business in various area, thus it is the best to form comprehensive business strategies including the future intellectual property rights rather than just to tie up for the limited and special purpose. For these backgrounds, GTS decided to make ACTE as a wholly owned subsidiary company.

To achieve our vision “provide the comprehensive care for the patients with orphan or intractable diseases and also their families and caregivers”, developing regenerative medicine business is essential in GTS, therefore the Share Exchange will be the big step forward. Obtaining cell therapy platform will provide new medical treatments for more diseases as it will expand the research and development area. Since our shares had been listed on Mothers of Tokyo Stock Exchange, we have been developing biosimilars and now could have good prospect for launching several biosimilar projects in 2020s. We believe the Share Exchange will strengthen our strategy in GTS 3.0 - Biotech Engineering Company, striving for value creation, by increasing the synergy between GTS and ACTE.

2. Outline of the Share Exchange

(1) Schedule of the Share Exchange

Resolution at the meeting of the Board of Directors (both)	January 17, 2019
Execution of the Share Exchange Agreement (both)	January 17, 2019
Announcement of Record Date for the extraordinary general shareholders’ meeting (GTS)	January 17, 2019
Record Date for the extraordinary general shareholders’ meeting (GTS)	February 1, 2019 (planned)
Extraordinary general shareholders’ meeting for Share Exchange Agreement (both)	March 12, 2019 (planned)
Scheduled Share Exchange Date	April 1, 2019 (planned)

(Note 1) The above schedule may be revised through consultations between the both companies.

(Note 2) The Share Exchange will be effective on the condition which the Share Exchange is approved by the resolution at the extraordinary general shareholders’ meeting of both respective companies. Though ACTE has issued both common share and Class-A preferred share, the class meeting is not planned to be organized since Share Exchange

can be executed without the class meeting in accordance with the articles of incorporation of ACTE.

(2) Method of the Share Exchange

GTS shall become the wholly-owning parent company, and ACTE shall become wholly-owned subsidiary company.

(3) Allotment related to the Share Exchange

	GTS (wholly-owning parent company)	ACTE (wholly-owned subsidiary company)
Allotment Share	1	Common Share 1.30 Class-A Preferred Share 1.48
Number of shares to be delivered upon the Share Exchange	Common Share of GTS : 7,250,740 shares (planned)	

(Note 1) Share allotment ratio in the Share Exchange (hereinafter “Share Allotment Ratio”)

Upon the Share Exchange, GTS will deliver 1.30 shares of GTS common share (hereinafter “GTS Share”) per common share of ACTE and 1.48 of GTS Share per Class-A preferred share of ACTE to each shareholder of ACTE who is recorded in the shareholder registry at the point of time immediately prior to the Share Exchange (hereinafter “Record Time”). Upon the articles of incorporation of ACTE, dividends of a hundred and sixty (160) Japanese Yen per Class-A preferred share from the residual assets will be paid to the Class-A preferred shareholders or Class-A registered share pledgees in prior to the common shareholders or registered common share pledgees. Thus, the Share Allotment Ratio was determined in light of such right in the Share Exchange. However, the Share Allotment Ratio may be revised through consultations between the both companies in the event of a significant change in conditions on which the calculation is based.

(Note 2) Number of shares to be delivered upon the Share Exchange

The number of shares to be delivered upon the Share Exchange is schedule to be 7,250,740 shares and GTS will plan to issue new common shares after the Share Exchange.

(Note 3) Treatment of fractional share

The ACTE shareholders who will have the fractional share (less than a hundred (100)

shares) of GTS upon the Share Exchange will be entitled to use the repurchase request system (sales of fractional shares) of GTS.

(Note 4) Treatment of shares constituting less than one (1) unit

With respect to the shareholders of ACTE who will receive the allotment of share less than one (1) unit of GTS upon the Share Exchange, GTS will sell the equivalent number of shares of total such fractions (fraction less than one (1) unit shall be rounded down), and pay the cash owing from the sale to each of shareholders in proportion to the value of such fractions, pursuant to provisions of Article 234 of the Companies Act and other relevant laws.

(4) Treatment of Share Acquisition Right and Bonds with Share Acquisition Right upon the Share Exchange

ACTE will redeem all of the share acquisition right without compensation and cancel them prior to the Record Time. ACTE has not issued any bonds with share acquisition right.

(5) Contents of Contract between GTS and shareholders of ACTE

Upon the Share Exchange, GTS will agree and execute a written confirmation with each shareholders of ACTE regarding the treatment of GTS's shares to be allotted to the respective shareholders by the Share Exchange as follows: (1) from the effective date of Share Exchange to the date of six months from the effective date, shareholders will not transfer the shares allotted by GTS, (2) from the date of six months from the effective date of the Share Exchange to the date of 1 year from the effective date, shareholders will not transfer more than 50% of the shares allotted by GTS, (3) the above (2) will not be applied if the transfer price is more than 150% of closing price of GTS's share at the effective date.

3. Basis of Calculation for the Allotment

(1) Basis and Reason for the Allotment

In order to ensure the fairness and the appropriateness in calculating the Share Allotment Ratio that will be applied in the Share Exchange, GTS have requested the third-party valuation which is independent from both companies. As described in 3-(4) "Measures to ensure fairness", GTS appointed YAMADA Consulting Group Co., Ltd. (hereinafter "YAMADA Consulting") as a third-party valuation institute for calculating the Share Allotment Ratio.

As described in (4) “Measures to Ensure Fairness”, GTS has carefully discussed and reviewed the conditions based on the valuation report received from YAMADA Consulting acting as a third-party valuation institution, and a legal advice from the Abe. Ikubo & Katayama, the legal advisor which has no interest in GTS and ACTE, and also with the result of due diligence. As a result, GTS came to a conclusion that the share exchange ratio is adequate as it is within the ranges of ratio received from YAMADA Consulting and will not harm the interests of shareholders. Therefore, GTS and ACTE executed the Share Exchange Agreement based on the resolutions of the respective meetings of Board of Directors.

(2) Matters Concerning the Calculation

i. Name of the Valuation Institution and Relationship with both Companies

YAMADA Consulting, which is the third-party valuation institution appointed by GTS is independent from and not related party of both companies, and does not have any special interest to be noted in regard to the Share Exchange.

ii. Outline of Calculation

As described in (1) Basis and Reason for the Allotment, GTS appointed YAMADA Consulting as a third-party valuation institution to ensure the fairness through the calculation of Share Allotment Ratio, requested the calculation of Share Allotment Ratio for the Share Exchange, and received the share valuation report. In the valuation of GTS, as shares of GTS are listed on Mothers of TSE and market values are available, Yamada Consulting has adopted the market price analysis for the calculation. In addition, Discounted Cash Flow Analysis (hereinafter “DCF Analysis”) was also adopted to reflect the status of future business activities in the calculation. ACTE is not listed company and the share price does not exist, therefore DCF was adopted to reflect the status of future business activities in the calculation.

The ranges of Share Allotment Ratio per GTS share calculated by each methodology is as follows.

Methodology adopted		Ranges of Share Allotment Ratio	
GTS	ACTE		
Market Price Analysis	DCF Analysis	Common Share	0.931~1.560
		Class-A Preferred Share	1.109~1.765
DCF Analysis	DCF Analysis	Common Share	0.784~1.612
		Class-A Preferred Share	0.933~1.823

In the valuation of market price analysis for GTS, YAMADA Consulting set January 16, 2019 as the base date, and used the simple average closing share prices of GTS on the Mothers of TSE and calculated for the base date, the most recent one (1) month from December 17, 2018, the most recent three (3) months from October 17 2018, and for the most recent six (6) months from July 17, 2018.

In the valuation of DCF analysis for GTS, YAMADA Consulting has evaluated the enterprise value and share value by discounting the future cash flow generated after the third quarter of fiscal year 2019 with the certain discount ratio based on the financial forecast for the period from the fiscal year ending March 31, 2019 through the March 31, 2028, the operating performance of recent years, and publicly available information. In the valuation of ACTE, YAMADA Consulting has evaluated the enterprise value and share value by discounting the future cash flow generated after the second quarter of fiscal year ending May 2019 with certain discount ratio based on the financial forecast for the period from the fiscal year ending May 2019 through the May 2028, the operating performance of recent years, and publicly available information.

Based on the evaluation, the share exchange ratio were calculated for GTS share with market price analysis and ACTE share with DCF analysis, and the range is 0.931~1.560 for the common share and 1.109~1.765 for class-A preferred share. In case the range is calculated for both with DCF analysis, the range is 0.784~1.612 for the common share and 0.933~1.823 for class-A preferred share.

In calculating the Share Allotment Ratio, YAMADA Consulting used information received from GTS and ACTE and publicly available information as is, assuming that all of such materials and information etc., were accurate and complete, and not independently verified the accuracy and completeness thereof. YAMADA Consulting has not independently valued, appraised or assessed assets and liabilities (including off-balance asset and liabilities, and contingent liabilities) of GTS, ACTE, and their respective subsidiaries and affiliates, and has not independently requested any third-party institution to make such appraisal or assessment. The calculation of the Share Allotment Ratio by YAMADA Consulting reflects the information and economic conditions up to the Record Date, and YAMADA Consulting assumed that the financial plans of GTS and

ACTE were prepared based on the best forecast and judgement that could be obtained at this point and in accordance with reasonable and appropriate method.

The financial plans YAMADA Consulting received from GTS and ACTE and used for the calculation includes the fiscal year which expects the significant increase or decrease in profit. In GTS, as previously reported, the increase in the profit generating from the drug substances sales of biosimilar products listed in our pipeline to be launched after year 2020. Currently, ACTE is in the process of establishing a clinical master cell bank of dental pulp stem cells through an alliance with Nikon Corporation. In the period after May 2022, increase in profit is expected as a result of the acceleration of development efforts

(3) Prospects and Reasons for Delisting

Delisting for GTS upon the Share Exchange is not expected.

(4) Measures to Ensure Fairness

i. Valuation Report from Independent Third-Party Valuation Institution

GTS selected Yamada Consulting which is independent from both GTS and ACTE and received the valuation report dated January 16, 2019 concerning the Share Allotment Ratio in order to ensure the fairness of share exchange ratio upon the Share Exchange. Taking into account the valuation result, both two companies have conducted considerations, negotiations, and consultations and thus decided to conduct the Share Exchange using the agreed Share Allotment Ratio described in 2-(3) "Allotment in the Share Exchange". Neither GTS nor ACTE has received a fairness opinion from each third-party valuation institution, to the effect that the share exchange ratio is proper or fair from a financial viewpoint.

ii. Receipt of Advice from an Independent Law Firms

GTS appointed Abe. Ikubo & Katayama and received legal advice concerning the procedures related to the Share Exchange including the decision-making method and process of Board of Directors.

Abe. Ikubo & Katayama is independent from and have no material interest in GTS and ACTE.

(5) Measures to Avoid Conflicts of Interest

No conflicts of interest arise between GTS and ACTE, both companies have not taken any measures.

4. Outlines of Companies in the Share Exchange

	Wholly-owning Parent Company in the Share Exchange		Wholly-owned Subsidiary Company in the Share Exchange	
1. Company name	Gene Techno Science Co., Ltd.		Advanced Cell Technology and Engineering Ltd.	
2. Head office	Kita 2-Nishi 9-1, Chuo-ku, Sapporo, Japan		1-24-3 4 th floor, Ginza, Chuo-ku, Tokyo, Japan	
3. Name and title of representative	Masaharu Tani President and CEO		Koichi Otomo President and CEO	
4. Description of business	Development of biologics and biosimilar		Regenerative medicine business	
5. Capital stock (as of Sep 30, 2018)	231 million yen		372 million yen	
6. Date of establishment	March 1, 2001		October 30, 2008	
7. Number of outstanding shares (as of Sep 30, 2018)	19,437,046 shares		5,482,300 shares	
8. Fiscal year end	March 31		May 31	
9. Number of employees	21 (as of Sep 30, 2018)		8 (as of May 31, 2018)	
10. Major business partners	Fuji Pharma Co., Ltd.		Daiichi Sankyo Co., Ltd	
11. Main financing bank	Mizuho Bank Ltd. MUFG Bank Ltd. The Hokkaido Bank, Ltd. North Pacific Bank, LTD		MUFG Bank Ltd. Sumitomo Mitsui Banking Corporation MUFG Bank Ltd.	
12. Major shareholders and shareholding ratio (as of Sep 30, 2018)	Noritsu Koki	48.73%	Koichi Otomo	30.96%
	BioHoldings		Yoshihiko Kitajima	13.81%
	NanoCarrier	5.14%	Akira Katayama	11.40%
	Co.,Ltd.	4.95%	Taro Koike	7.30%
	Japan Trustee		Namiko Shinohara	6.86%
	Services Bank, Ltd.	3.53%		
	JSR Corporation	2.86%		
	Senju			
	Pharmaceutical			
	Co., Ltd.			

13. Relations between the companies						
Capital relationship	There is no reporting item applicable to this matter					
Personnel relationship	There is no reporting item applicable to this matter					
Transaction relationship	There is no reporting item applicable to this matter					
Status as a related party	There is no reporting item applicable to this matter					
14. Operational results and financial conditions for the recent three (3) years (unit: million Japanese Yen)						
	GTS			ACTE		
Fiscal year ended	March 2016	March 2017	March 2018	May 2016	May 2017	May 2018
Net assets	403	3,500	2,604	73	91	169
Total assets	1,694	3,706	3,025	88	168	438
Net assets per share (yen)	33.11	181.69	134.37	△8.69	△4.18	12.36
Net sales	1,160	1,089	1,059	31	138	178
Operating profit	△820	△1,184	△913	△89	△43	△46
Ordinary profit	△785	△1,176	△903	△89	△42	△46
Net profit	△787	△1,224	△904	△90	△61	△111
Net profit per share (yen)	△75.73	△68.50	△47.27	△18.78	△12.47	△21.61
Dividend per share (yen)	—	—	—	—	—	—

(Note 1) In accordance with the articles of incorporation of ACTE, the Class-A preferred share owns one voting right per share for the general shareholders' meeting as same as its common share. Thus, the shareholding ratio was calculated by the total of both common share and Class-A preferred share for major shareholders.

(Note 2) 2-for-1 common share split was conducted on July 1, 2018 and net asset per share and net profit per share were calculated assuming that the split occurred at the beginning of fiscal year 2016.

5. Status after the Share Exchange

1. Corporate name	Gene Techno Science Co., Ltd.
2. Head office	Kita 2-Nishi 9-1, Chuo-ku, Sapporo, Japan
3. Name and title of representative	Masaharu Tani, President and CEO
4. Description of business	Development of biologics and biosimilar
5. Paid-in capital	Not fixed at present
6. Fiscal year end	March 31

7. Net assets	Not fixed at present
8. Total assets	Not fixed at present

6. Outline of Accounting Treatment

In the Share Exchange, the purchase method under the accounting standards for corporate acquisition, will be applied. It is also assumed that the Share Exchange will result in goodwill, but the amount thereof has not yet been fixed.

7. Future Outlook

The impact of the Share Exchange Agreement on the consolidated operating results has not yet been confirmed and will be announced immediately after the matter to be disclosed has been confirmed.

(Reference) Financial forecast in FY2018 (May 11, 2018) and results in FY2017

(unit: million Japanese Yen)

	Net sales	Operating profit	Ordinary profit	Net profit
Financial forecast (fiscal year ended Mar 31, 2019)	1,060	△1,180	△1,180	△1,182
Results of operations (fiscal year ended Mar 31, 2018)	1,059	△913	△903	△904