



TSE Code: 4585

# Supplementary Documents of Business Results for Fiscal Year 2017 ending Dec.31, 2017

February 14, 2018



*Addressing Unmet Medical Needs*  
UMN Pharma Inc.

- Business Results for FY 2017
- Capital and Business Alliance with Shionogi & Co., Ltd.
- Business Directions from FY 2018
  - Growth scenario
  - R & D policy
- Business Plan: FY2018

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## ■ Business Results for FY 2017

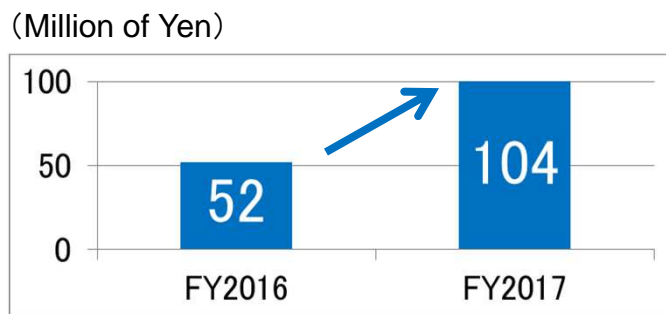
- Capital and Business Alliance with Shionogi & Co., Ltd.
- Business Directions from FY 2018
  - Growth scenario
  - R & D policy
- Business Plan: FY2018

## Summary of Financial Results of FY2017 (Non-consolidated)

- Sales and net loss : Secure sales of 100 million yen, net loss will be in line with the current forecast value on March 24, 2017
- Net asset value: Plus 357 million yen = avoiding excessive second consecutive debt at the end of December 2017, cash on hand deposits: 1.734 billion yen

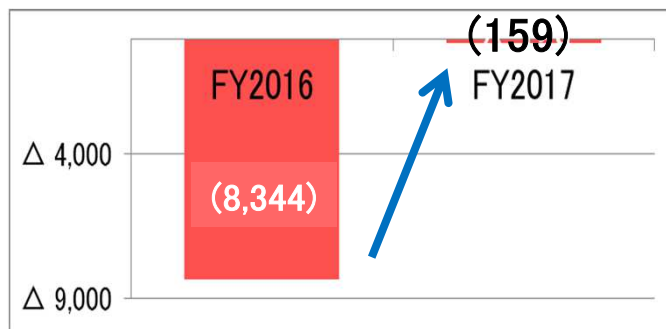


### Net Sales



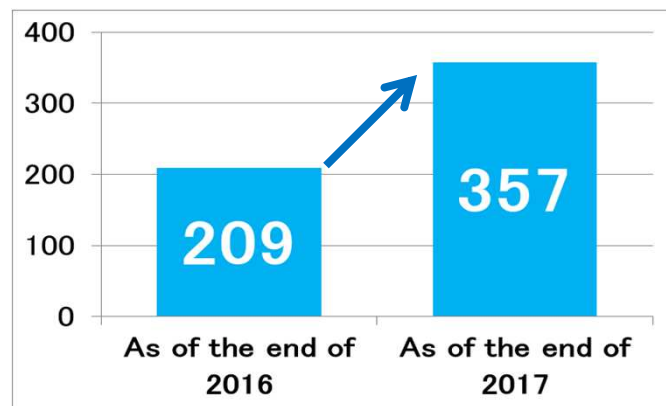
- Net sales from alliance: Provision of original proprietary information to Shionogi
- Net sales from BCMO: Not reached the plan, although accepted orders for future development candidates from academia

### Net Income (Loss)



- Net Loss: Significant improvement due to orphan drug grant for UMN-0501
- Expenses was within budget thanks to rationalization of G&A expenses, although R&D expenses increase from alliance with Shionogi

### Net Assets (Comparison on a non-consolidated basis)



- Net assets of 357 million yen at the end of FY 2017, avoiding excessive second consecutive debt
  - Reduce capital and capital reserve on May 2, 2017
  - Issuing new shares 178.8 million yen, according to capital alliance with Shionogi & Co., Ltd. (In addition, the 20th SO partial exercise is included)
- \*The judgement time of cancellation of delisting grace period by TSE will be after securities reports at the end of March, 2018 submitted.

Non-consolidated Financial Results for FY2017 ended Dec.31, 2017 vs Financial Forecast

- Secured net sales of 100 Mil. yen from Shionogi & Co., Ltd.

- Each profit and loss stage was within a range of financial forecast on Mar 24 and Dec 20, 2017



(Million of yen)	Financial Forecast for FY2017※ (Upper=Disclosed on March 24, 2017) (*Lower=Disclosed on December 20, 2017)	Financial Results for FY2017	Difference from Financial Forecast on March 24, 2017	Remarks
Net Sales	153 *104	104	(32.4)%	<ul style="list-style-type: none"> <li>Net sales from alliance : achieved</li> <li>Contract manufacturing biopharmaceuticals business : not achieved</li> </ul>
Operating Income(Loss)	(512) *(509)	(498)	+2.1%	<ul style="list-style-type: none"> <li>R&amp;D expenses : ¥380Mil.</li> <li>G&amp;A expenses: ¥219Mil.</li> <li>Increased costs for collaboration related with Shionogi</li> <li>Decreased taxation due to capital reduction and substantial decrease of G&amp;A expenses due to cost reduction</li> </ul>
Ordinary Income(Loss)	(167) *(167)	(158)	+5.6%	Compensated for stock issuance-related expenses by ¥336 Mil. of UMN-0501 Orpahn Grants of non-operating income
Net Income (Loss)	(170) *(168)	(159)	+6.6%	Same as above
Basic Earnings per share	(13.96) *(13.68)	(12.96)		

Note : Revised financial forecasts disclosed on March 24, 2017 and on December 20, 2017

## Disclosed on February 14, 2017 New Business Directions after FY2017

- Concluded a capital and business alliance with Shionogi & Co., Ltd. on October 31, as a result of accomplishing partnership activities in accordance with redefined directions and mission



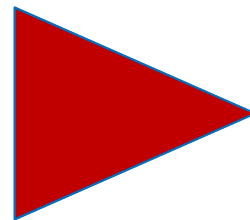
Restart to change from full-scale manufacturing model to focus on CMC development and preparation to commercial production

### Our Redefined Mission

Create and supply high value added bio-pharmaceuticals to contribute to the society  
By developing bio-pharmaceuticals to satisfy unmet medical needs, supporting and bridging development process from research level to development level and  
Furthermore supplying existing good seeds over the world

#### Past

A Model as Mass Production  
for One Item in Big Plant  
to Supply UMN-0502



#### From now on

A Business Solution Model  
Focusing on a part of  
Development Process  
with Risk Averse and Flexibility

Disclosed on February 14, 2017 Major Action Plan for New Business Direction 

- Ensuring Profits prioritized by Equity Efficiency, Investment Efficiency
  - Accomplishing plans to improve Added Value and Sustainable Growth with ensuing Profits
- 

Value added by  
In-house  
Development  
Business

Early license-out of existing in-house pipelines with efficient R&D

Alliance scheme without excessive cost burdens

New pipelines and co-development from contracted manufacturing

Ensuring Profits and  
Stable Growth by  
Contracted  
Manufacturing  
Business

Continued order to existing contracts and expand volume by progress

New orders on CMC development and support for industrialization

New orders of DS production satisfying demands of middle volume

Realizing  
Sustainable Growth  
By Integration of  
Peripheral Technology

Introducing peripheral technology as adjuvants, formulations & devices

Efficient manufacturing by reducing required volume by new formulations

## Results of Major Action Plan in FY2017

Improved additional value by in-house development promotion

= Restructuring management base for business promotion by alliance with Shionogi

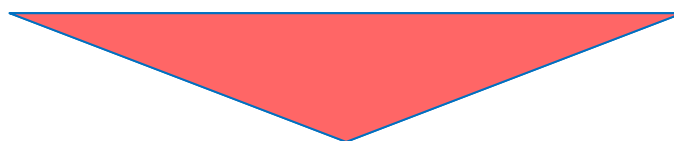
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Value added by  
In-house  
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Early license-out of existing in-house pipelines with efficient R&D

Alliance scheme without excessive cost burdens

New pipelines and co-development from contracted manufacturing



Signed a capital and business alliance agreement  
with Shionogi & Co., Ltd. on October 31, 2017  
(Details are described later)



## Results of Major Action Plan in FY2017

2/3



Ensuring Profits and stable growth by contracted manufacturing business

= Developed consignment work centering on academia, however not achieved the plan

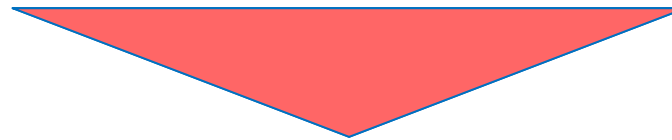
= Change in direction of resource allocation of contracted business according to alliance with Shionogi

Ensuring Profits and  
Stable Growth by  
Contracted  
Manufacturing  
Business

Continued order to existing contracts and expand volume by progress

New orders on CMC development and support for industrialization

New orders of DS production satisfying demands of middle volume



Accumulation of consignment work from academia

Order target 7 orders(Existing 4, New 3) → Actual 4 orders(Existing 4, New 0)

Not achieved the plan in FY2017, due to concentrating management resources on development of core technologies related alliance with Shionogi, and basic research on development candidates

Assume to narrow down the number of contracted business from FY2018

# Results of Major Action Plan in FY2017

Realizing sustainable growth by integration of peripheral technology

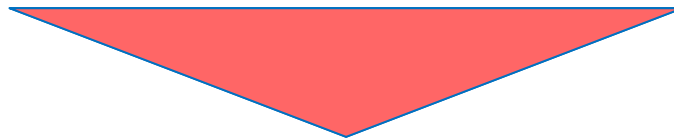
= Promoted collaborative research on novel adjuvants with NIBIOHN and a joint research system with other organizations

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Realizing  
Sustainable Growth  
By Integration of  
Peripheral Technology

Introducing peripheral technology as adjuvants, formulations & devices

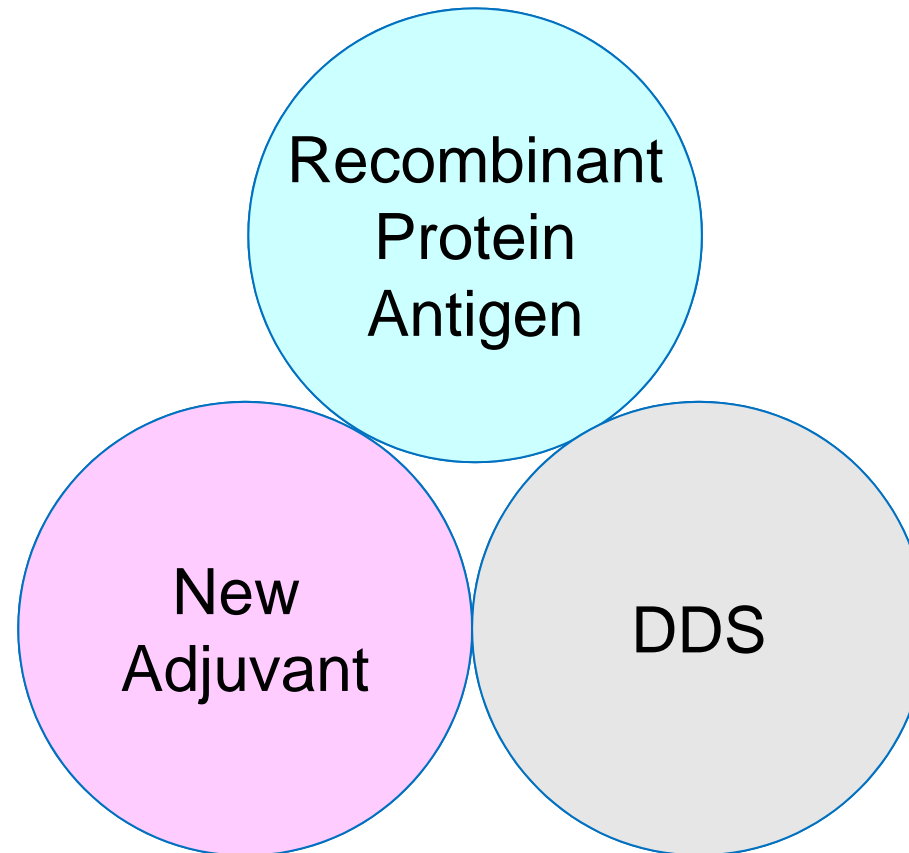
Efficient manufacturing by reducing required volume by new formulations



Collaborative research  
with National Institutes of Biomedical Innovation, Health and Nutrition (NIBIOHN)  
On June 26, 2017 (Expanded coverage of joint research on December 1, 2017)

Promote state-of –the-art biopharmaceutical research and development  
of new vaccines with high additional value and high productivity  
by fusion of new adjuvants seeds by NIBIOHN and our manufacturing technology

## Concept of Logical Vaccine



**New vaccine with high efficacy and high productivity created  
due to integration of above technologies**

## Disclosed on July 31, 2017 Start Joint Research with NIBIOHN

- Cutting edge pharmaceuticals, ex. novel vaccine, with high value added and high productivity using synergy both new adjuvant of NIBIOHN and manufacturing technology of UMN

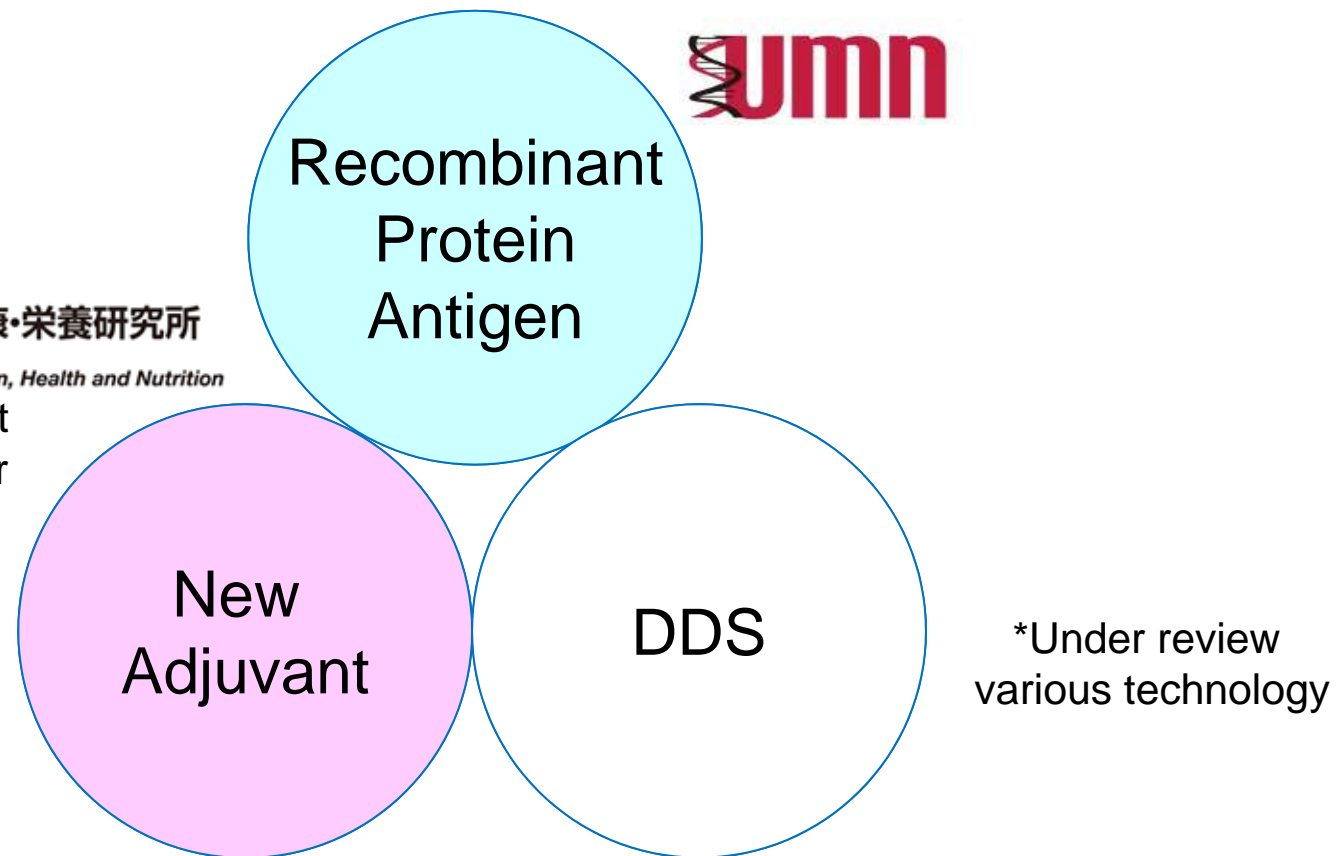


### 【NIBIOHN】

- Provide new adjuvant seeds
- Evaluate the results of assay by UMN

### 【UMN Pharma】

- Make recombinant vaccine with new adjuvants
- Verify adjuvant effects for tests by animal
- Hold exclusivity toward commercialization



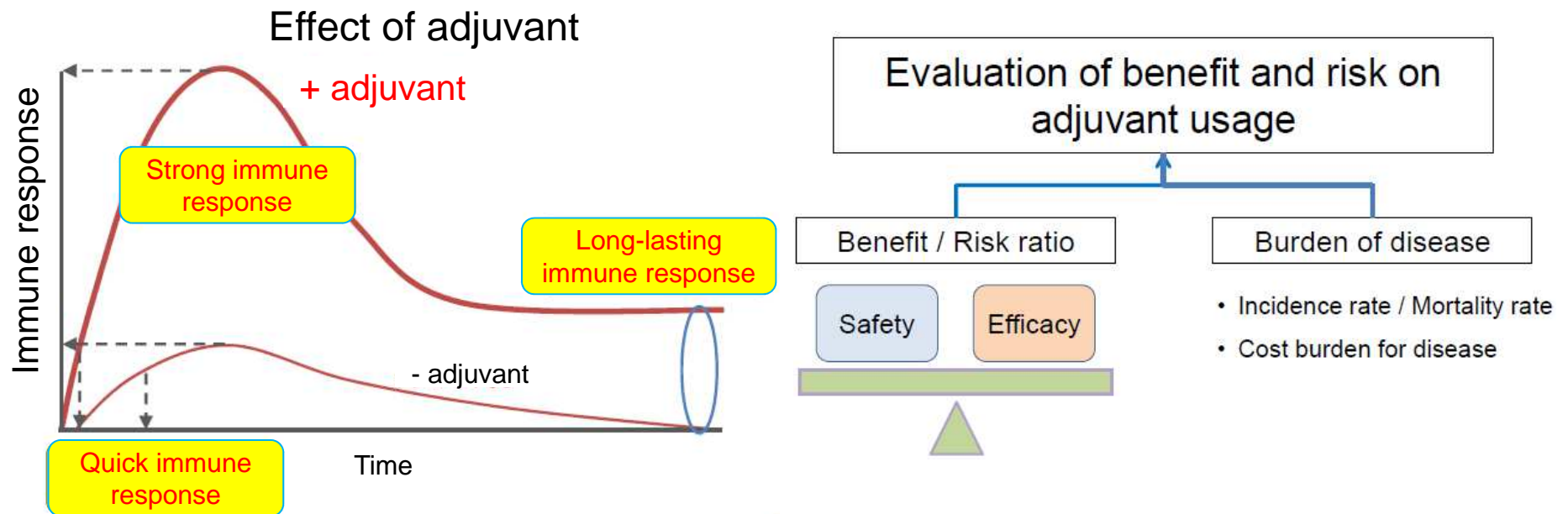
(For reference) **Disclosed on July 31, 2017** What is Adjuvant?



- Chemicals enhancing the effectiveness of vaccine
- As an origin, “adjuvare” in Latin meaning “help”

- How to choice optimal adjuvant is along a good path by more deeply understanding immune response
- Adding adjuvant is an important option to vaccines against emerging infectious diseases as well as vaccines against RNA virus with easy mutation
- Adjuvant is a key to research and development of vaccine beyond infectious diseases

**Adjuvant as a key to create vaccine holding both high efficacy and high productivity**



Changes to Business Direction in In-House Development disclosed on Feb 14, 2017

- Reexamined existing in-house R&D pipelines

(New setting development codes of existing in-house developed pipelines are described later)



		2Q, FY2017	From FY2018
Existing Projects	UMN-0502 /0501	2 requirements for re-trial • Feasibility of basic technology for domestic licensure • Peripheral technology able to efficient production	<ul style="list-style-type: none"> <li>➤ Judged unnecessary to depend on PSC technology, and agreed to cancel license agreement with PSC (Sanofi)</li> <li>➤ Cancel contract with two companies in Korea and Taiwan due to return rights in Japan and East Asia</li> <li>➤ Decide whether to do in-house development, considering progress of development of core technologies with Shionogi</li> </ul>
	UMN-2001 /2002	<ul style="list-style-type: none"> <li>• Reconsideration with development in overseas</li> <li>• UMN-2001 as Rotavirus vaccine</li> </ul>	<ul style="list-style-type: none"> <li>➤ Cancelled collaborative research contract of Norovirus vaccine with Daiichi Sankyo Co., Ltd.</li> <li>➤ Continue development using new technologies based on development of core technologies</li> <li>➤ New setting development codes</li> </ul>
	Zika Virus PJ Consortium	Acquiring development rights overseas as pioneer case of global development	<ul style="list-style-type: none"> <li>➤ Under discussion not to participate in consortium due to making a judgment in reduction of significance because of alliance with Shionogi</li> </ul>
New Projects	BEVS	<ul style="list-style-type: none"> <li>➤ Introducing later stage projects than existing projects</li> <li>➤ Introducing peripheral technology as adjuvants, formulations and devices for efficient production with high added value by packaged peripheral technology</li> </ul>	<ul style="list-style-type: none"> <li>➤ Discuss and select new development candidates that will contribute to alliance with Shionogi</li> </ul>
	Non-BEVS	<ul style="list-style-type: none"> <li>➤ Avoiding risks too much dependency on BEVS to introduce new projects based on non-BEVS technology with synergy</li> </ul>	

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- Business Results for FY 2017

- **Capital and Business Alliance  
with Shionogi & Co., Ltd.**

- Business Directions from FY 2018
  - Growth scenario
  - R & D policy

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## Significance of the Collaboration with UMN Pharma



### Significance and expected outputs from the collaboration

#### • UMN Pharma: Strengths and features

- Platform to manufacture recombinant protein antigens which will be the core of next-generation vaccines
- Development of anti-infective vaccines
- R&D facilities covering early to mid stage of development

#### • Shionogi: Strengths and features

- R&D for infectious diseases
- R&D of small to mid sized molecules
- Focused on development of novel drug discovery platforms
- Development of in-house adjuvants

### Synergy: UMN's vaccine platform meets Shionogi's strategy for infectious diseases

- Acquiring new strengths for influenza, RSV\*, herpes viruses, norovirus etc.
- Synergistic benefit by applying our in-house adjuvants
- Addressing emerging and re-emerging infectious diseases

#### • Funding scheme\*\*

- 3<sup>rd</sup> party allocation: c.a. 170 million yen
- Convertible bonds: c.a. 1.43 billion yen
- Certain milestone payments

#### • Short term goals

- Establishment of basic technology platform supporting future global business
- Securing manufacturing facilities for commercial protein drugs

#### • Mid-Long term goals

- Expanding our product lineup from prevention to treatment
- Strengthening infectious disease pipeline



\* Respiratory syncytial virus (RSV): one of RNA viruses

\*\* Estimated price from closing stock price of 288 yen (as of Sep. 22, 2017)

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Origin: FY2017 1<sup>st</sup> half Financial results of presentation materials by Shionogi Co. Ltd



# R&D Targets in Alliance with Shionogi & Co., Ltd.



- Development of core technologies: Construction of new worldwide basic technologies
- Fundamental research on development candidates: Create optimal logical next generation vaccine for each infectious disease

development of core technologies	<ul style="list-style-type: none"> <li>➤ Establish new technology platform for biopharmaceuticals including vaccine for preventing human infections                         <ul style="list-style-type: none"> <li>– Create collaborative platform of new basic technologies that can be deployed worldwide</li> </ul> </li> </ul>
Fundamental research on development candidates	<ul style="list-style-type: none"> <li>➤ Promote research, development, application, launch (product supply) of next generation logical vaccine, combined by adjuvant and drug/drug delivery technology based on established new fundamental technology                         <ul style="list-style-type: none"> <li>– Development of next generation vaccines with higher efficacy and safety</li> <li>– UMN is mainly in charge of production, and Shionogi is in charge of development, application and sales.</li> </ul> </li> <li>※ Development candidates consists of part of existing in-house development pipelines and new development candidates targets</li> </ul>

## Partnership 1<sup>st</sup> Phase (This time)

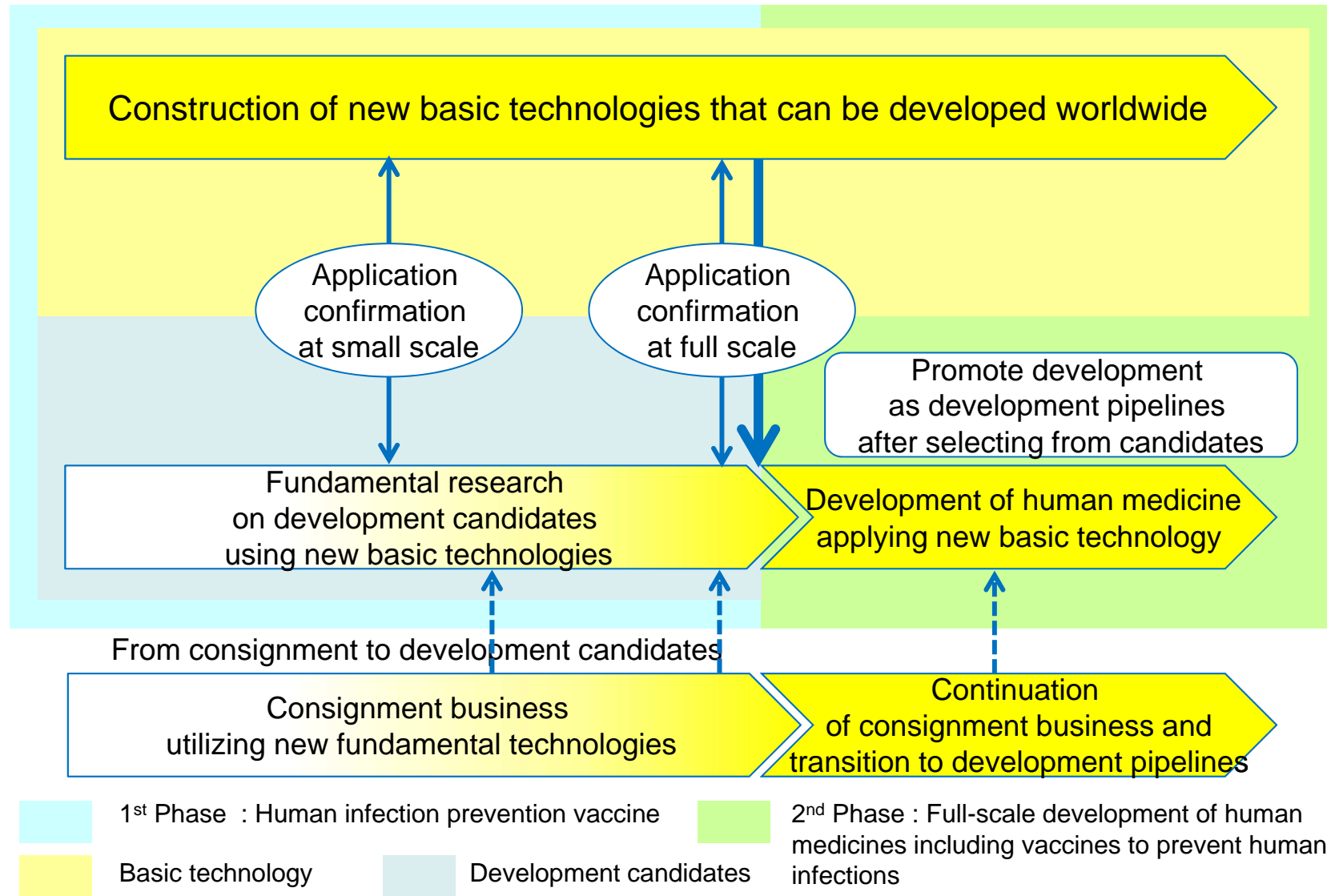
- Improvement of fundamental technologies related to vaccine drug production, and comprehensive construction including adjuvants and formulations
- In parallel promoting fundamental R&D candidates
- UMN has an obligation for establishment of basic technology
- Until 2019, accept certain milestones every six month according to the development progress
- Capital alliance (1.63 billion yen) aimed at supporting RD, capital investment, and working capital required during 1<sup>st</sup> Phase
- ※ Secure business funds until December 2019

## Partnership 2<sup>nd</sup> Phase (Schedule in FY2019)

- Select official development candidates and promote joint development, application and marketing after GLP exam
- Conclude an exclusive license agreement of official development of pipelines and marketing, and agreement of cooperation by other forms, when shifting to the 2<sup>nd</sup> phase
- Required development financing contribution scheme after the 2<sup>nd</sup> phase will be discussed later

# R&D Targets in Alliance with Shionogi & Co., Ltd.

- Development of core technologies : Construction of new worldwide basic technologies
- Fundamental research on development candidates : Create optimal logical next generation vaccine for each infectious disease



- Formation for CMC & Process Development : Up to Commercial Production at Akita Plant
- Providing Seamless & Speedy Service: from Animal Studies through to Production



## Yokohama Lab.(R&D Function)



- Up to 250 liter biological reactors X 1
- Total 12 biological reactors
- Production of samples for basic research

## Akita Plant(CMC Function)



- Up to 600 liter biological reactors X 3
- Production of investigational drugs (quasi-GMP)
- Production of drug substances (transferrable to GMP)
- Biological assays & analyses

## Akita Lab. (Laboratory Animal Study Function)

- Various kinds of animal studies of sample products produced at Yokohama Lab. & Akita Plant
- Validation of sample swiftly, contributing to speed up development period

# New Setting Development Codes of Existing In-House Developed Pipelines

- Change development codes along with arrangement of partnership

\*Classified development stages such as basic stage and as after nonclinical study



	Old development code		New development code(Basic stage)
Seasonal Influenza Vaccine	UMN-0502	▶	UMN-101
Recombinant Pandemic Influenza Vaccine	UMN-0501/0901	▶	UMN-102
Recombinant Rotavirus VLP Single Vaccine	UMN-2001	▶	UMN-103
Recombinant Norovirus VLP Single Vaccine	UMN-2002	▶	UMN-104
<hr style="border-top: 1px dashed #0070C0;"/>			
Development of core technology in collaboration with Shionogi & Co., Ltd.	-	▶	UMN-001 (New setting)
Search for new seeds	-	▶	UMN-002 (New setting)

## Capital Alliance with Shionogi & Co., Ltd.

- Raised 1.639 billion yen by new shares and 1<sup>st</sup> convertible bond-type bonds with subscription rights to shares (CB)  
(Total 5,500K shares, Dilution ratio 31.08%)
- Appropriation for R&D, capital investment and operating capital until the end of 2019



### New shares

Common stock : 600K shares  
Issue price : 298 yen  
Volume of issuance : 179 million yen

### 1st convertible bond-type bonds with subscription rights to shares (CB)

Volume of issuance : 1.46 billion yen (Subscription rights to shares : 4,900K shares)  
Conversion price : 298 yen  
Interest rate : 0.22%  
Maturity redemption date : November 15, 2021  
(No advance redemption clause excluding grounds for delisting)

### 【Other major matters】

- Shionogi cannot transfer acquired shares without prior consent by alliance agreement.
- UMN cannot raise capital financing without prior consent of Shionogi.
- UMN will issue and allocate new CB to Shionogi under the most recent stock price condition when converting CB cannot be executed due to stock price on assumed timing.

### Points on future CB conversion :

- Shionogi decides conversion policy based on the state of development progress in 1<sup>st</sup> Phase and the expected our net asset status at the end of the FY.
- Important points in order to prevent the debt-excess situation again in FY:  
1) Achievements from steady progress in development, 2) Stock price status  
(The necessary CB conversion amount for FY2018 and FY2019 are described later)

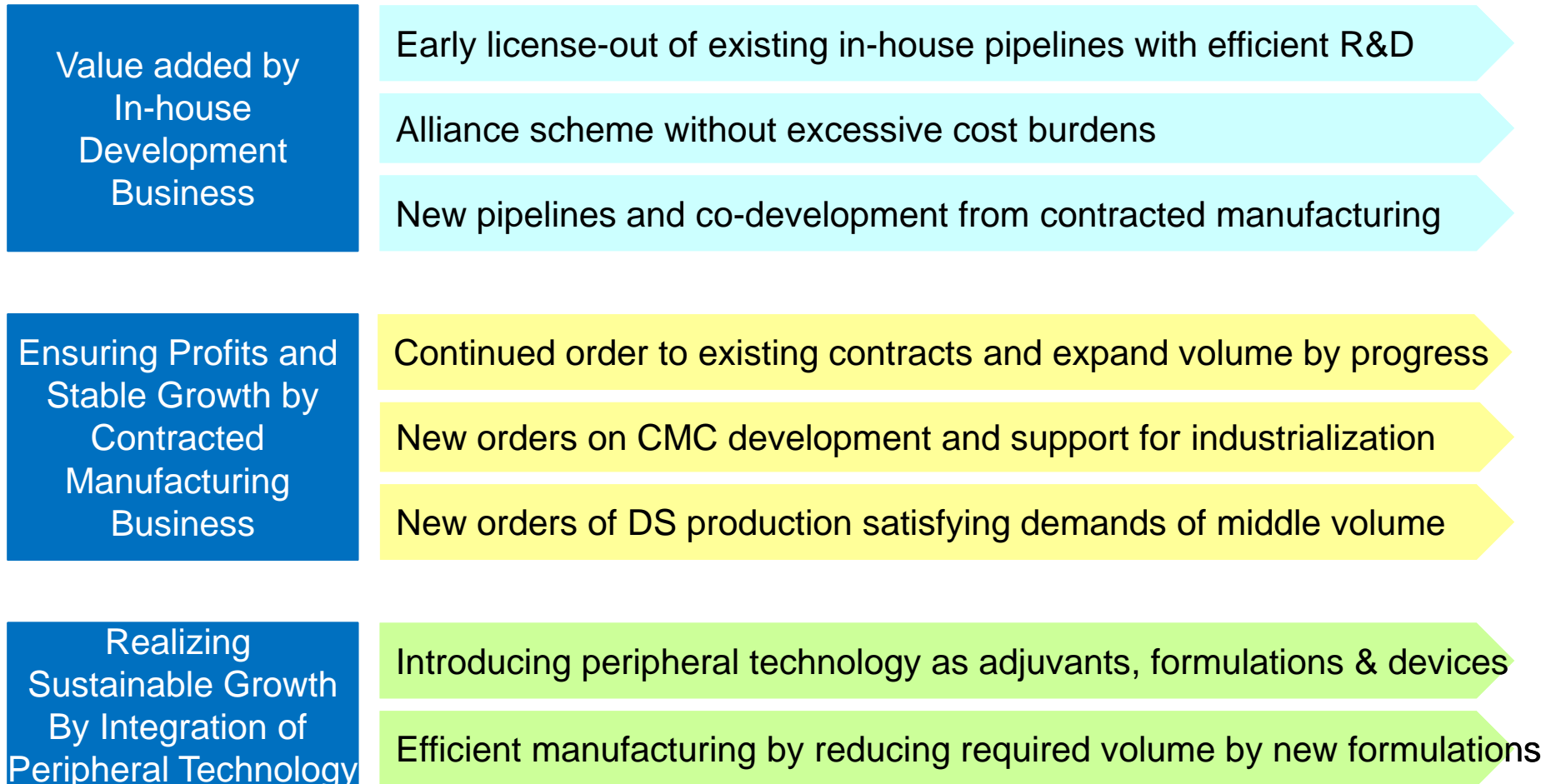
- 
- Business Results for FY 2017
  - Capital and Business Alliance with Shionogi & Co., Ltd.

- **Business Directions from FY 2018**
  - Growth scenario
  - R & D policy

- Business Plan: FY2018

(Re-posting) Disclosed on February 14, 2017 Major Action Plan for New Business Direction

- Concentrated on collaboration with Shionogi, adjusting resource allocation to consigned manufacturing business, although no change of action plan



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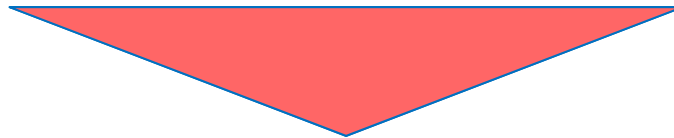


Value added by  
In-house  
Development  
Business

Early license-out of existing in-house pipelines with efficient R&D

Alliance scheme without excessive cost burdens

New pipelines and co-development from contracted manufacturing



Value added by  
In-house  
Development  
Business

Consider a possibility of development candidates in basic research by alliance with Shionogi, and re-select development pipelines

Realize a cooperation scheme with Shionogi to avoid excessive cost burden, and maintain a policy on the 2<sup>nd</sup> phase

Consider a possibility of a new development candidates, from contracted projects, for business alliance with Shionogi



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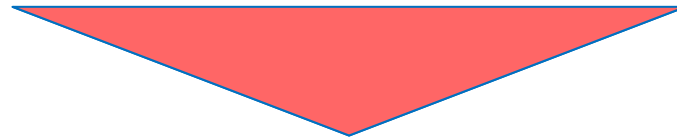
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Ensuring Profits  
By Contracted  
Manufacturing  
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Continued order to existing contracts and expand volume by progress

New orders on CMC development and support for industrialization

New orders of DS production satisfying demands of middle volume



Ensuring Profits  
By Contracted  
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Contract manufacturing business focus on consignment work from Academia, which will be candidates for future development pipelines, in order to concentrate management resources on the capital and business with Shionogi & Co., Ltd.

(Re-posting) Disclosed on February 14, 2017 Major Action Plan for New Business Direction



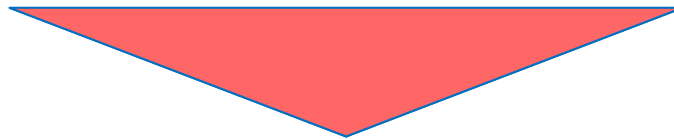
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Realizing Sustainable Growth By Integration of Peripheral Technology

Introducing peripheral technology as adjuvants, formulations & devices

Efficient manufacturing by reducing required volume by new formulations



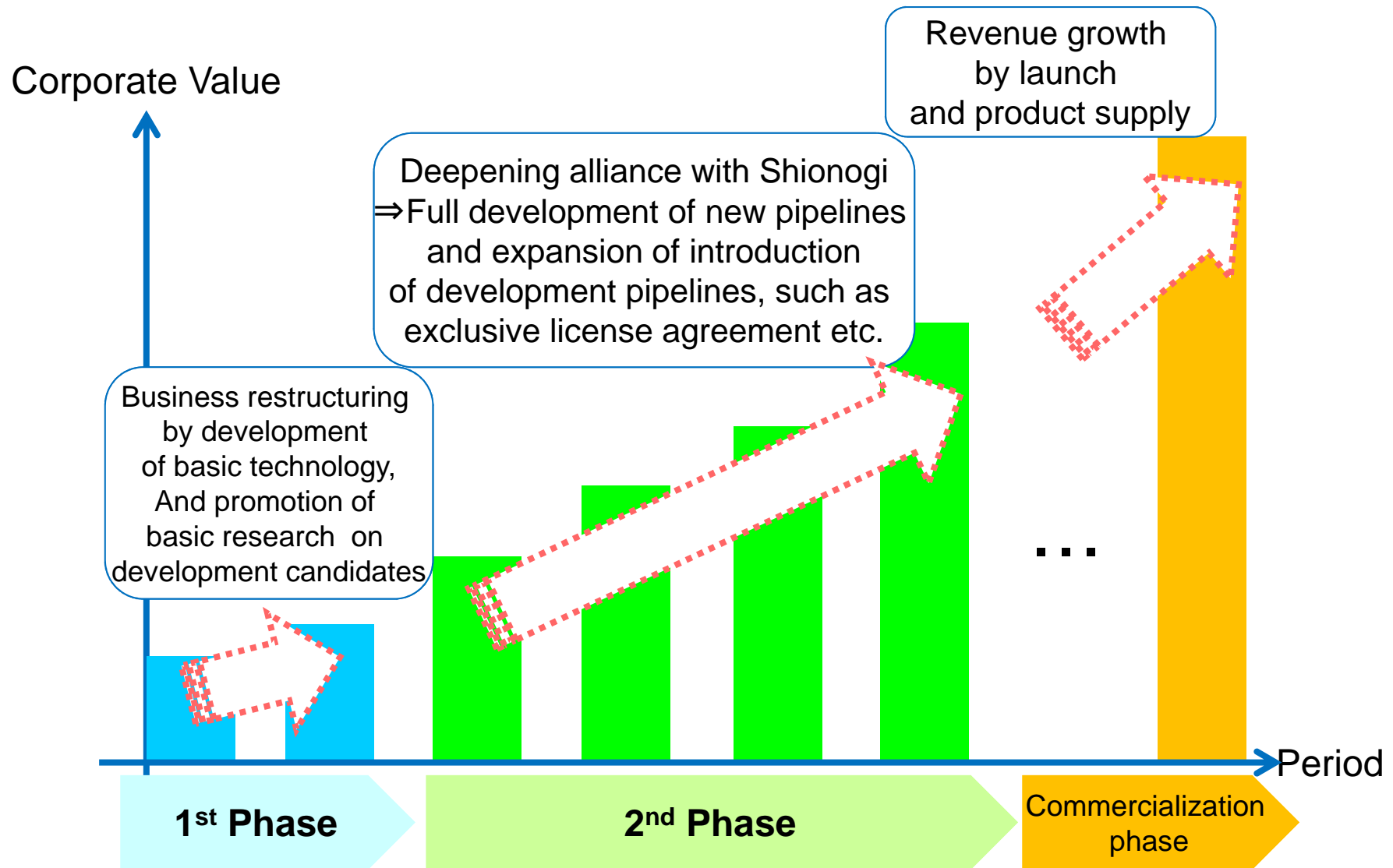
Realizing Sustainable Growth By Integration of Peripheral Technology

Regarding adjuvants (immunostimulants), collaborative research with "NIBIOHN" and other institutions, and steadily implement of the above data collection and peripheral technologies acquisition by receiving material from pharmaceutical companies about formulation and drug delivery technology

Reduce clinical dose by new formulation, and realize a system of capable efficient production

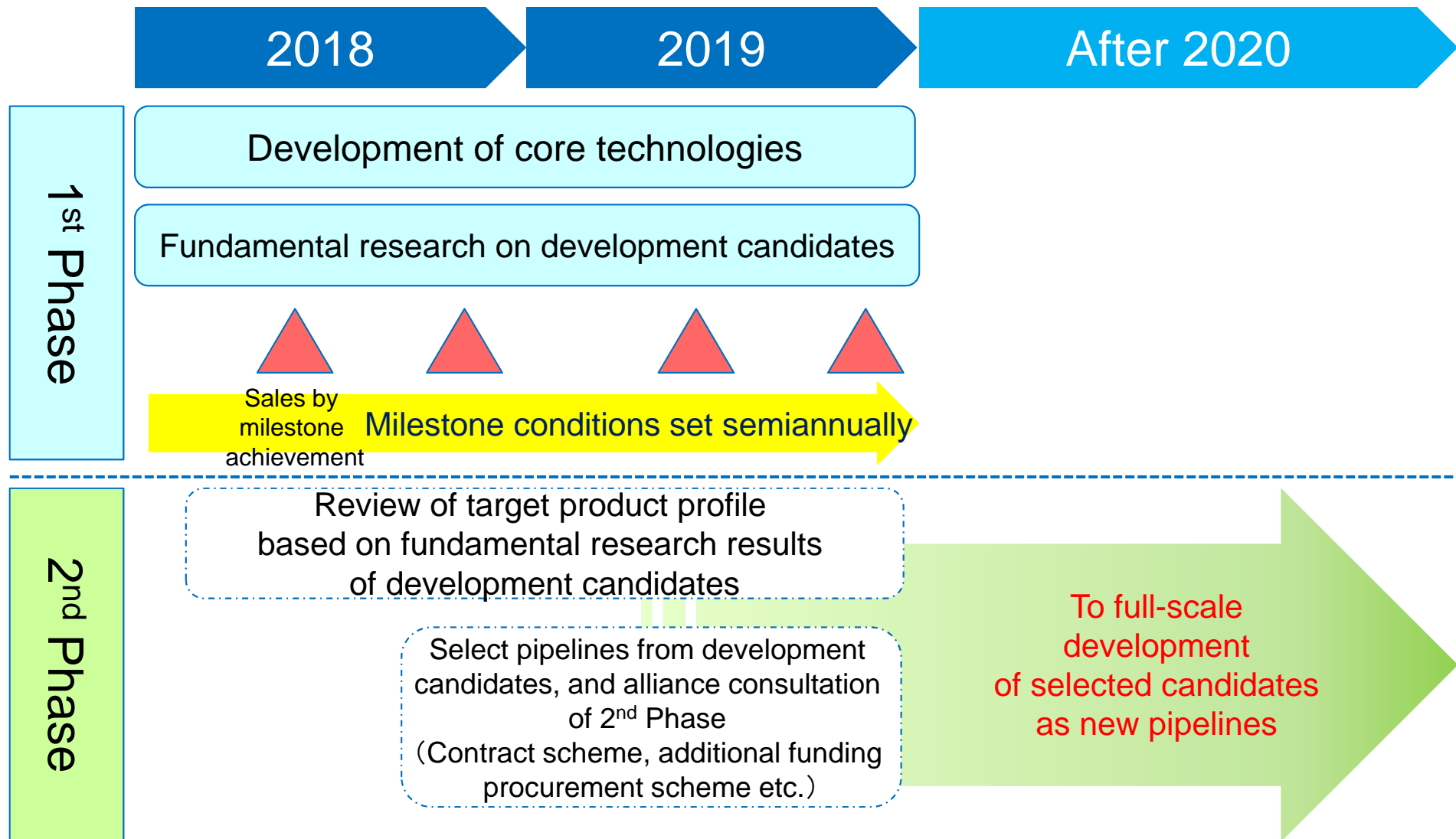
# Medium- to Long-term Growth Scenario

- Aim for transition to 2<sup>nd</sup> Phase by focusing on alliance with Shionogi until FY2019
- Aim for improvement of corporate value through full-scale new development pipelines after FY2020



# Deepening Alliance with Shionogi & Co., Ltd.

- Transition to 2<sup>nd</sup> Phase through steady promotion of 1<sup>st</sup> Phase
- Aim for growth by 2<sup>nd</sup> Phase affiliation scheme such as exclusive license agreement



# Upcoming Research and Development Direction

- Development of core technologies : Construction of new worldwide basic technologies
  - Fundamental research on development candidates : Create optimal logical next generation vaccine for each infectious disease
- 



## Development of Core Technologies

- Development of a set of core technologies required for development and supply of biopharmaceuticals including vaccines worldwide
  - Respond to regulations in each country for approval
  - Competitive with productivity and cost
- Development of our own core technology reflecting latest knowledge and technology
- Apply established fundamental technology to development candidates sequentially

## Fundamental Research on Development Candidates

- Creation of logical vaccines
  - Create vaccines that induce optimal immune responses for each target infection by combining of adjuvant and drug delivery technology
- Create more effective next-generation vaccines
  - Universal Vaccine
  - Vaccines to prevent infection, that are not prevention of severity
- Includes novel vaccines for infectious diseases in which vaccine market has not been introduced

- 
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**■ Business Plan: FY2018**

## Business Directions for FY2018

- Concentrate resources on development of core technologies and fundamental research on development candidates with Shionogi & Co., Ltd.
- Secure sales by steady achievement of milestones



<b>Partnership 1<sup>st</sup> Phase with Shionogi &amp; Co., Ltd.</b>	<ul style="list-style-type: none"><li>➤ Steady achievement of development of core technologies along with milestone conditions (= realization of sales strategy)</li><li>➤ Improvement reliability of transition to 2<sup>nd</sup> Phase by promoting basic research on development candidates products</li><li>➤ Steady promotion of CB conversion policy</li></ul>
<b>Development of In-House Pipeline of Next-Generation Bio-Pharmaceuticals</b>	<ul style="list-style-type: none"><li>➤ Steady promotion of basic research on development candidates from existing in-house pipeline</li><li>➤ Expand the possibility of selecting development candidates through fundamental research on new candidates</li><li>➤ Active review and introduction of novel adjuvants and formation technology</li></ul>
<b>Contract Manufacturing Business of Biopharmaceuticals etc.</b>	<ul style="list-style-type: none"><li>➤ Avoid dispersal of management resources</li><li>➤ Accept contract business from only academia that can be candidates for future development pipeline</li></ul>
<b>Enhancement of R&amp;D Bases</b>	<ul style="list-style-type: none"><li>➤ Maintenance of Yokohama laboratory and re-launch of Akita plant</li><li>➤ Enhancement of each site</li><li>➤ Strengthen R&amp;D organization by active adoption of personnel for R&amp;D and manufacturing</li></ul>

## Non-consolidated Financial Forecasts for FY2018 ending Dec.31, 2018

- Sales plan : Conservatively recorded mainly on milestone revenues related to business alliance with Shionogi & Co., Ltd.
- Operating loss : Increase against YOY because of R&D expenses related development of core technologies and assessment of candidates



(Millions of yen)	FY2017 Actual (Non-consolidated)	Forecasts for FY2018 (Non-consolidated)	Assumptions & conditions for Financial Forecasts of FY2018
Net sales	104	<b>102</b>	Sales due to achievement of milestone related to 1 <sup>st</sup> Phase and contracted business from academia
Cost of sales	3	-	Record cost of sales related to contracted business as R&D expenses
R&D expenses	380	<b>657</b>	Estimate expenses for R&D for core technologies and basic research of development candidates, for test manufacturing at Akita plant from the second half of FY, and for personnel
Other SG&A expenses	219	<b>249</b>	Estimate increase mainly for IP and recruitment expenses
Operating Income(Loss)	(498)	<b>(803)</b>	Estimate loss expansion due to strengthening of R&D activities with Shionogi
Ordinary Income(Loss)	(158)	<b>(809)</b>	Record bond interest and CB conversion related expenses on non-operating expenses ※FY2017=Recorded 336 Mil. yen of UMN-0501 Orphan Grant on Non-operating income
Net Income(Loss)	(159)	<b>(810)</b>	CB conversion policy becomes an important point in order to maintain the net asset value positive at the end of Dec, 2018. (CB conversion scenario is described later)
Net Income(Loss) per share	(12.96)	<b>(63.31)</b>	

- The above forecasted figures that are based on information currently acquired, that can be determined to be reasonable and based on certain assumptions, however that are not intended to promise realization.
- There is a possibility that forecasts may differ due to various uncertain factors.



Forecasts for FY2018 : Cost of sales, R&D expenses, Other SG&A expenses

- R&D expenses : Assume increase related to collaboration with Shionogi

- Other SG&A expenses : Assume increase related mainly to human resource recruitment



Account items (Millions of yen)	FY 2015 Actual (consolidated)	FY 2016 Actual (consolidated)	FY 2016 Actual (non-consolidated)	FY 2017 Actual (non-consolidated)	FY 2018 Forecasts (non-consolidated)
Cost of sales	52	39	51	3	-
R&D expenses	2,933	3,151	279	380	657
Other SG&A expenses	424	444	273	219	249
SG&A expenses	3,357	3,596	553	599	906
Depreciation expenses, within the above,	*1,524	*1,578	25	-*	-*

\*including 107 of lease fee

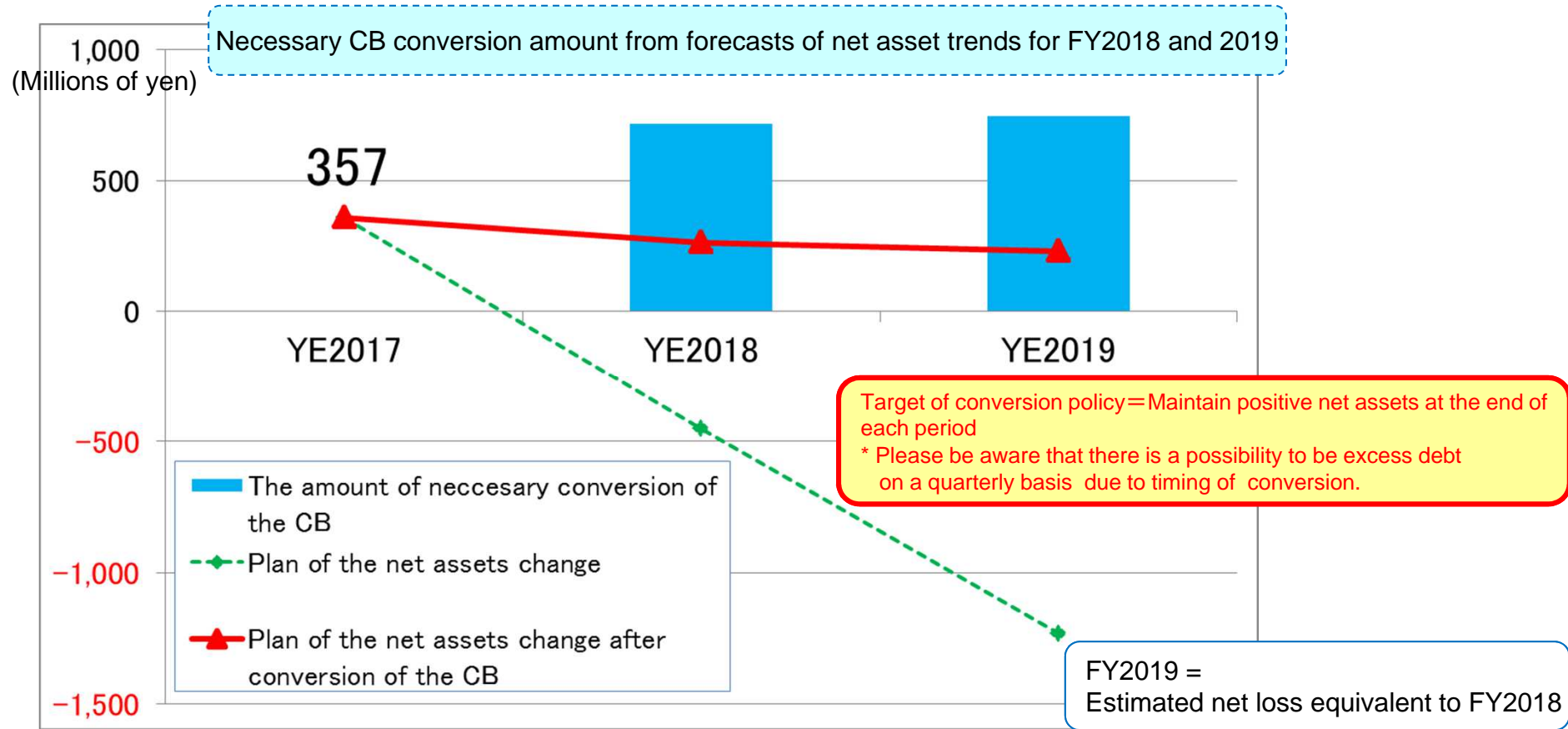
\*including 107 of lease fee

\* Fixed asset acquisition exp. are expensed by lump-sum depreciation.

	Point	Details
R&D expenses	Re-launch of Akita plant Related to R&D, manufacturing Active recruitment	<ul style="list-style-type: none"> <li>➤ Estimate increase including improvement of experimental environment at Yokohama lab. and maintenance and depreciation, utility exp. related to re-launch at Akita plant</li> <li>➤ Active adoption for R&amp;D and manufacturing related personnel to strengthen R&amp;D organization</li> <li>➤ Estimate to increase expenses related to cooperation with Shionogi</li> </ul>
Other SG&A expenses	Increase expenses of IP related and recruitment	<ul style="list-style-type: none"> <li>➤ Implemented all necessary cost reduction by the end of Dec 2017</li> <li>➤ Plan to introduce expenses of intellectual property and recruitment</li> </ul>



- Shionogi decides conversion policy in consideration of 1<sup>st</sup> Phase progress, stock price trend, and forecasts of net asset value of FY2018 and 2019
- Consult with Shionogi on conversion policy and aim for steady CB conversion after FY2018, in order to prevent excessive debt situation



# Finally - Toward Re-Challenge -



We want to contribute to health of people around the world by bringing innovative biopharmaceuticals to the world

We want to compensate to stakeholders by achievement of commercialization, utilizing technologies and know-how that has been cultivating, and past failures



**Re-challenge for commercialization of biopharmaceuticals**

Resources  
Required  
for Re-Challenge

**People : We have already core talent, plus promote of human resources necessary for acceleration of R&D**

**Goods : Determined direction on R&D and promote steadily**

**Money : Secure by a capital and business alliance with Shionogi**

# Appendix

## Financial Results for FY2017

## Non-consolidated Financial Results for FY2017 ended Dec.31, 2017 vs FY2016



- Revenue: Increase due to receipt of remuneration for information provision comparing to FY2016
- Profit and loss stage: Operating loss stage improved and net loss stage widely improved comparing to FY2016 each

(Millions of yen) Except per share data fractions dropped	FY2016 Actual(Non- consolidated)	FY2017 Actual(Non- consolidated)	Comparing to FY2016 (Round down to one million yen)		Main factors of difference comparing to FY2016
Net sales	52	<b>104</b>	+51	98.0%	Increased due to receipt of remuneration for information provision
Cost of sales	51	<b>3</b>	(48)	-	Improved cost sales ratio due to reduction of cost of sales
R&D expenses	279	<b>380</b>	+100	35.7%	Increased UMN-0502 maintenance expenses and R&D expenses related to alliance with Shionogi
Other SG&A expenses	273	<b>219</b>	(53)	(19.7)%	Decreased due to tax burden reduction
Operating Income(Loss)	(552)	<b>(498)</b>	+53	-	Increased substantially due to increase of sales, even though R&D expense increased
Ordinary Income(Loss)	(480)	<b>(158)</b>	+322	-	Increased substantially due to transfer of 336 Mil. yen of UMN-0501 orphan grants to non-operating income
Net Profits(Loss)	(8,344)	<b>(159)</b>	+8,185	-	Increased substantially due to the lack of influence of loss of business arrangement recorded in FY2016
Net income(Loss) per share	(804.39)	<b>(12.96)</b>			
Net Assets per share	16.82	<b>27.93</b>			

## Non-consolidated Balance Sheets for FY2017 as of Dec.31, 2017 vs FY2016



- Total assets: Increased significantly due to increase of cash and deposits comparing FY2016
- Total liabilities: Increased due to capital enhancement comparing to FY2016

Account (Millions of Yen, fractions dropped)	FY2016 (as of Dec 31, 2016)	FY2017 (as of Dec 31, 2017)	Change	Remarks
Cash and deposits	566	1,734	+1,168	
Other current assets	84	102	+18	
Total current assets	650	1,836	+1,186	
Tangible fixed assets	0	0	-	Continued to operate at Yokohama Lab. and Akita plant
Intangible fixed assets	0	0	-	
Other fixed assets	44	54	+10	
Total noncurrent assets	44	54	+10	
Total Assets	694	1,891	+1,196	
Current liabilities	122	46	(75)	
Noncurrent liabilities	363	1,487	+1,123	Transferred UMN-0501 orphan grant to PL Recorded 1,460 Mil. yen of 1 <sup>st</sup> convertible bond-type bonds with subscription rights to shares as fixed liabilities
Total liabilities	485	1,533	+1,048	
Capital Stock & Capital Surplus	19,903	613	(19,289)	Decreased due to capital reduction Exercised stock acquisition rights
Retained earnings	(19,700)	(256)	+19,443	Offset capital reductions with retained earnings
Others	5	0	(5)	
Total Net Assets	208	357	+148	
Total Liabilities & Net Assets	694	1,891	+1,196	

## Non-consolidated Cash Flows for FY2017 ended Dec.31, 2017

- Operating cash flow decreased by 561 million yen
- Cash and cash equivalents increased 1,168 million yen comparing to FY2016



(Millions of Yen, fractions dropped)	<b>FY2017 (Actual)</b>	Remarks
Cash flows from operating activities		
Quarterly net loss before income tax	<b>(158)</b>	
Adjustments for non-cash activities	<b>(324)</b>	(336) of UMN-0501 orphan grant adjustment etc.
Taxes, interests & others	<b>(75)</b>	
Net cash provided by (used in) operating activities	<b>(558)</b>	
Income tax payment etc.	<b>(3)</b>	
Cash flows from operating activities	<b>(561)</b>	
Cash flows from investing activities	<b>(0)</b>	
Cash flows from financing activities	<b>1,729</b>	(25) of repayment, 132 of the 20 <sup>th</sup> stock acquisition right use, 178 of new shares due to capital alliance with Shionogi, 1,460 of 1 <sup>st</sup> convertible bond-type bonds with subscription rights to shares etc.
Net increase (decrease) in cash and cash equivalents	<b>1,168</b>	
cash and cash equivalents at beginning of the period	<b>566</b>	
cash and cash equivalents at end of the period	<b>1,734</b>	Secure necessary business funds by the end of 2019



- This material includes forward-looking statements based on assumptions and beliefs in light of the information currently available to management and subject to significant risks and uncertainties.
- Actual financial results may differ materially depending on a number of factors including adverse economic conditions, currency exchange rate fluctuations, adverse legislative and regulatory developments, delays in new product launch, pricing and product initiatives of competitors, the inability of the company to market existing and new pipelines effectively, interruptions in production, infringements of the company's intellectual property rights and the adverse outcome of material litigation.
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