



# SK bioscience

JP Morgan Healthcare Conference  
Jan. 2024





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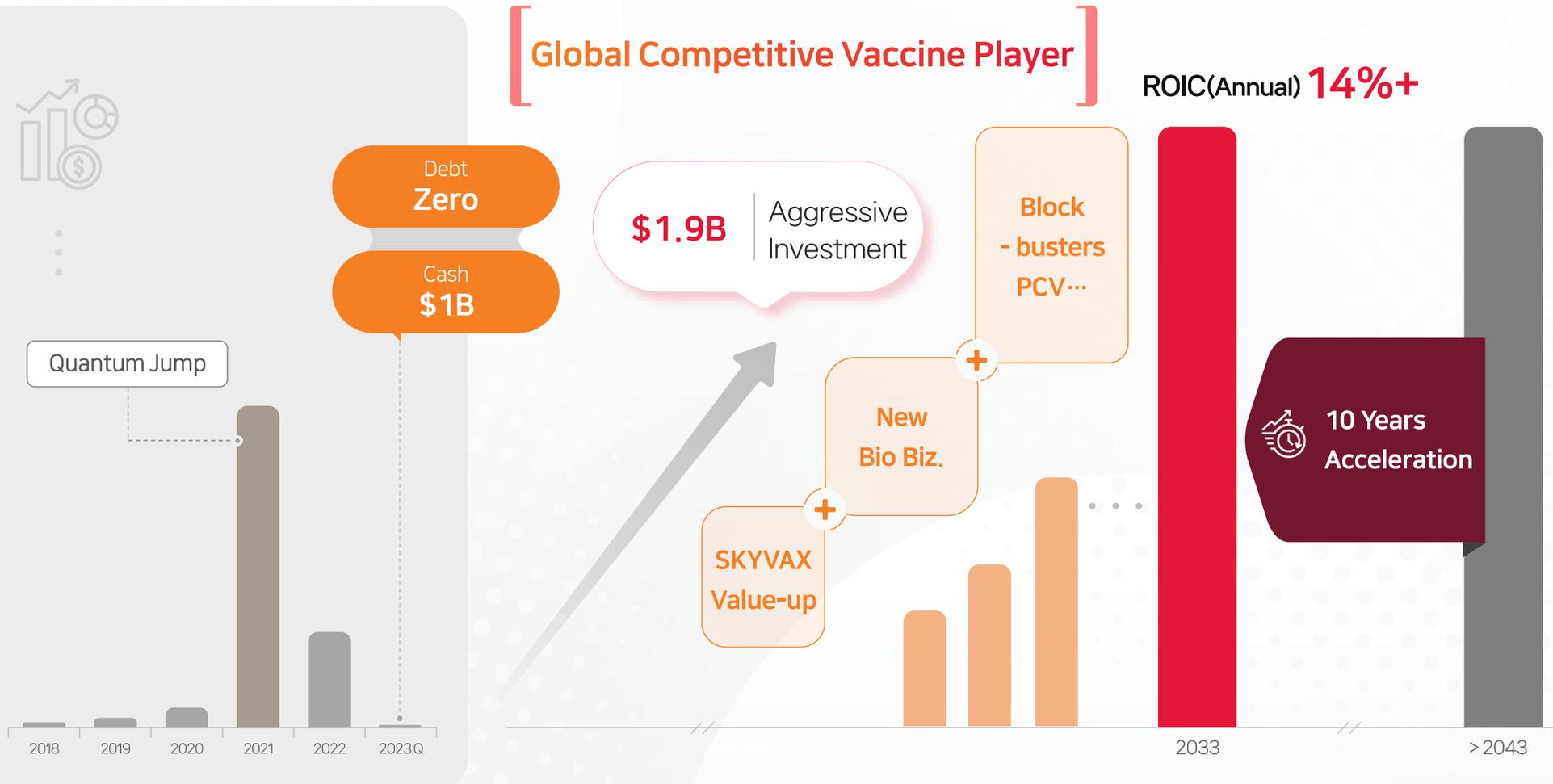
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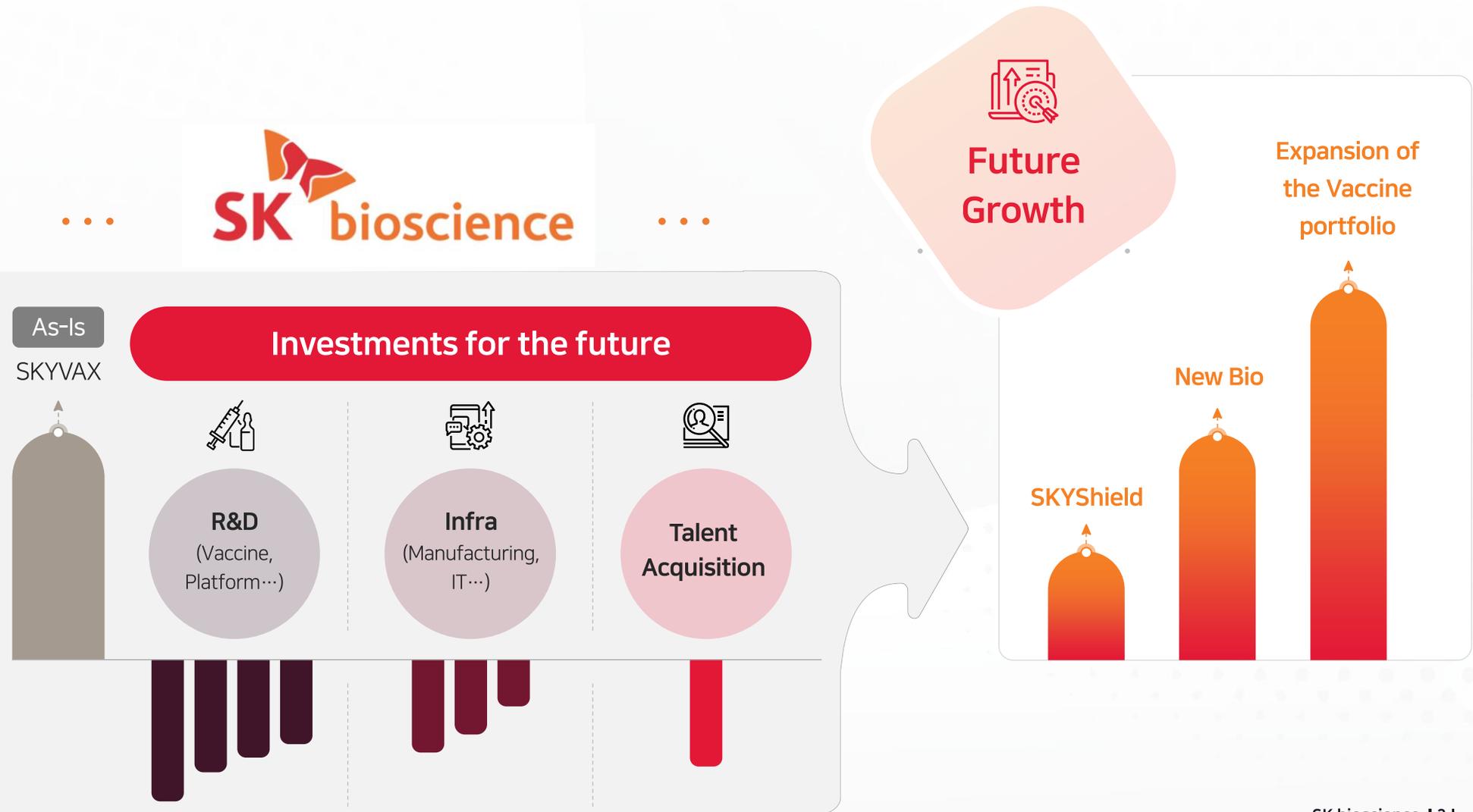
# Investment Plan for Accelerating Growth

Through aggressive investment of \$1.9B, we aim to expedite the next quantum leap, saving 10 years



※ Exchange Rate : 1USD =1,289.4 KRW (Dec. 29<sup>th</sup> 2023)

# Strategies to Reserve Long-term Growth



# Converging Priorities: Focusing on the Five Pillars of Business

**MISSION** We Promote Human Health, from Prevention to Cure

**VISION** Global Innovative Partner of Vaccine and Biotech

Vaccine Portfolio	R&D/Infra Upgrade	SKYShield	Next Pandemic Preparedness	Bio Business Expansion
<ul style="list-style-type: none"><li>Global product portfolio</li></ul>	<ul style="list-style-type: none"><li>Capacity expansion aligned with products &amp; business</li></ul>	<ul style="list-style-type: none"><li>Concrete achievement for SKYShield business</li></ul>	<ul style="list-style-type: none"><li>Distinctive and specific strategies and goals</li></ul>	<ul style="list-style-type: none"><li>Detailed strategies for new bio business expansion</li></ul>
<ul style="list-style-type: none"><li>SKYVAX Value-up</li><li>PCV/Blockbuster/ Innovative vaccines</li></ul>	<ul style="list-style-type: none"><li>Global network management (including inorganic, SKYShield)</li></ul>	<ul style="list-style-type: none"><li>Prioritize by regional attractiveness and opportunities</li></ul>	<ul style="list-style-type: none"><li>Partnership-based tech. and Mfg. capabilities</li></ul>	<ul style="list-style-type: none"><li>Entering CDMO business</li></ul>

Global Partnership      M&A, J/V      Management Infra

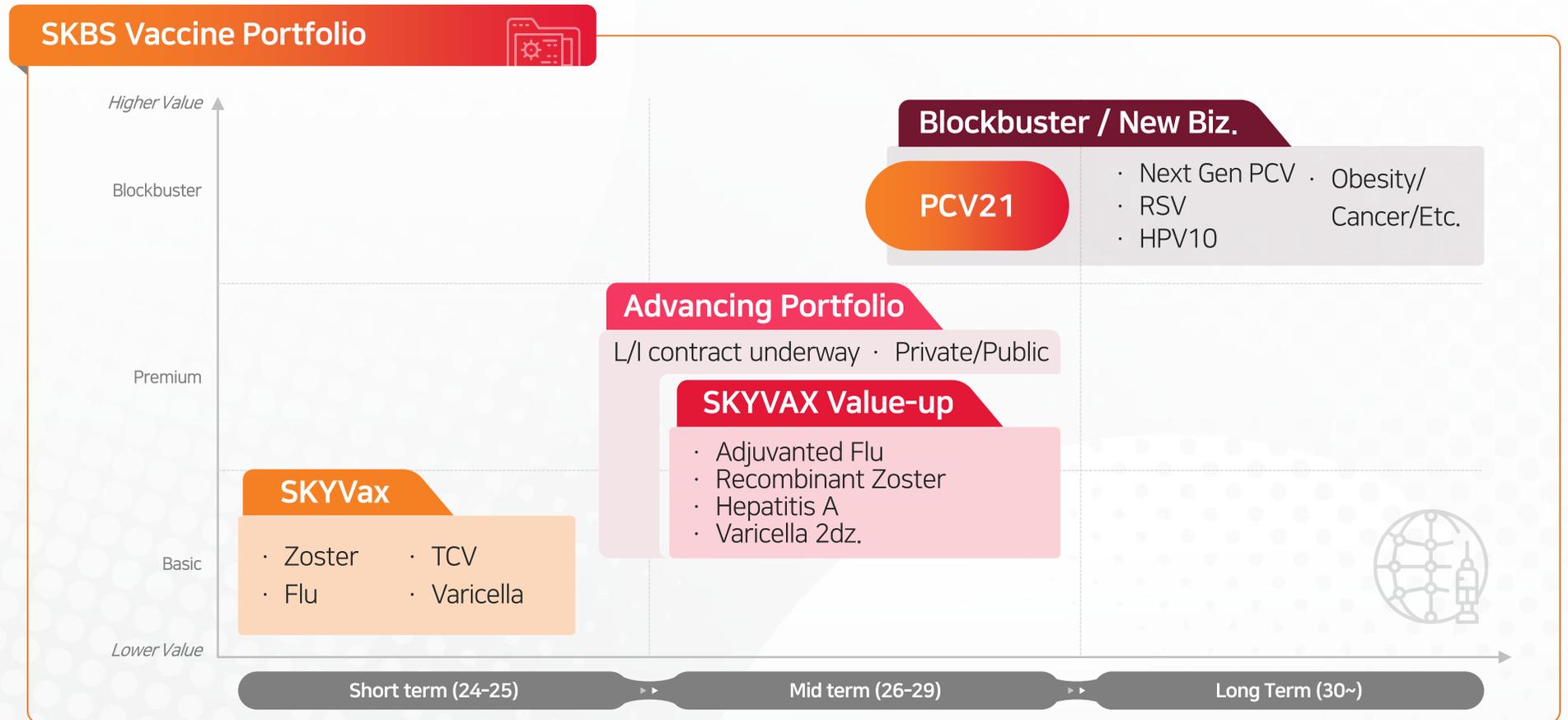


# Growth Strategy

- (1) Vaccine Portfolio
- (2) R&D/Infra Upgrade
- (3) SKYShield
- (4) Next Pandemic Preparedness
- (5) Bio Business Expansion

# (1) Vaccine Portfolio

Reinforce competitiveness of in-house developed vaccines while advancing blockbuster pipelines & new business area in the long term



# (1-1) Vaccine Portfolio : SKYVAX Value-up & Blockbuster

01



SKYVAX  
Value-up

## Adjuvanted Flu

- Differentiated flu vaccine for seniors
- Cell-culture + Adjuvant for higher efficacy

## Recombinant Zoster

- 1dz regimen, less pain
- Target high-income markets

## Varicella 2dz

- 2dz global option    1dz regimen in Korea
- Adjusted dosages to enhance immuno-safety

## Hepatitis A

- Strengthen basic vaccine portfolio
- Cost reduction via improved yields

02



Block  
-buster

## PCV

- Phase 3 clinical trial in 1H 2024
- Develop next-gen PCV with more serotypes

## HPV10

- Secure 1dz regimen
- Price reduction via better productivity platform

## RSV

- Prioritize based on approval trends
- Continuous candidate discovery and studies

## Cancer

- Secured patents for related tech
- Target hard-to-treat cancers    Cold tumor; breast cancer...

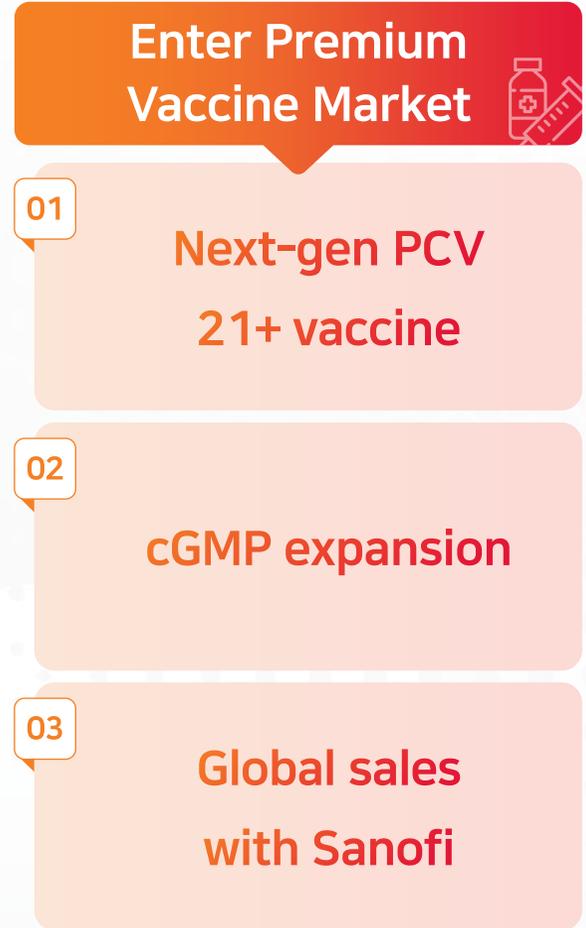
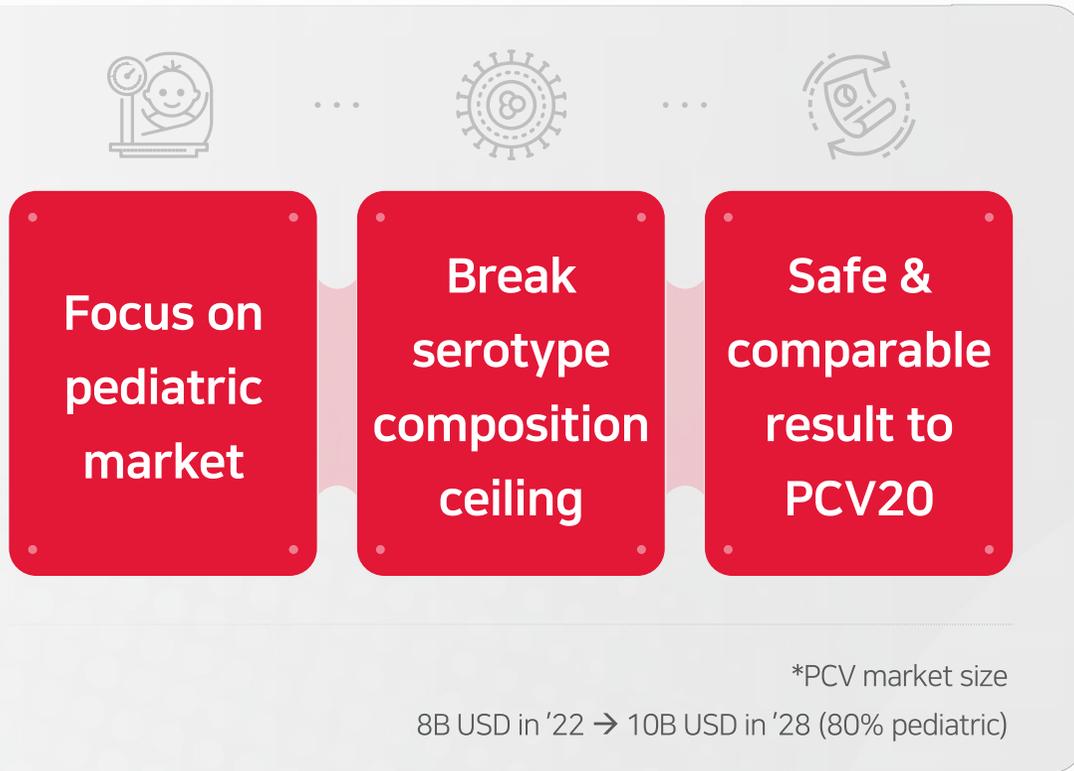
## Obesity

- Localized obesity treatment via immune response
- Secured patents after identifying candidates

# (1-2) Vaccine Portfolio : PCV21

First-in-Class PCV20+ in pediatric market

Phase 3 in 2024 1H / Submission in 2027



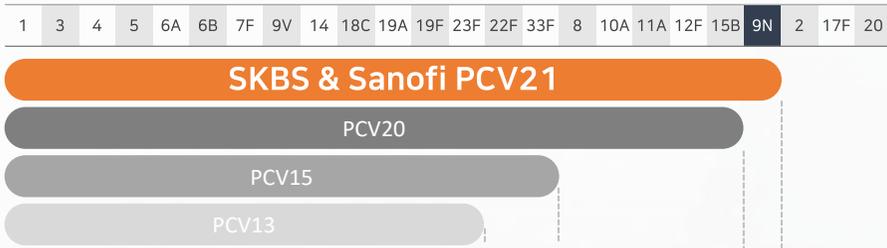
## Growth Strategy

# (1-2) Vaccine Portfolio : PCV21

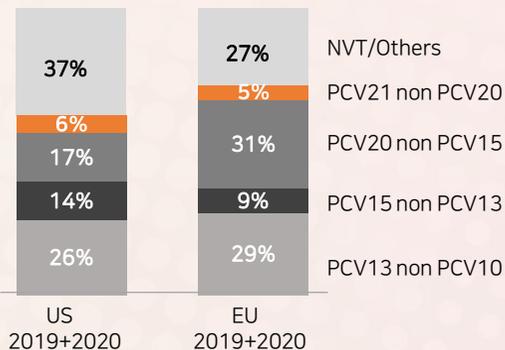
Expanding coverage with innovative technology

## Coverage Expansion

### Serotype Composition by Vaccine



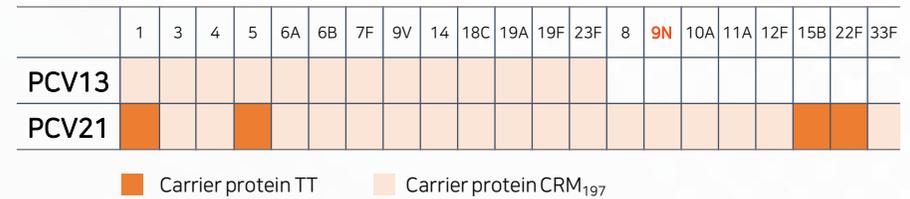
## IPD Coverage by Vaccine



**"9N serotype provides 5~7% gain in IPD coverage across all ages"**

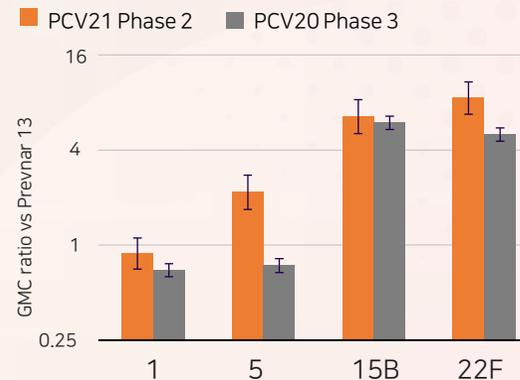
Source: Sanofi, Vaccines investor event ('23.06.29)

## Innovative Carrier



- **Two carrier proteins** to cover different serotypes with **maximized immune response**
- **Mitigates immune interference** common in multivalent conjugate vaccines

## Post Dose 4: IgG GMC ratio



**"Innovative carrier to break serotype composition ceiling"**

# (1-3) Vaccine Portfolio : Cancer Vaccine

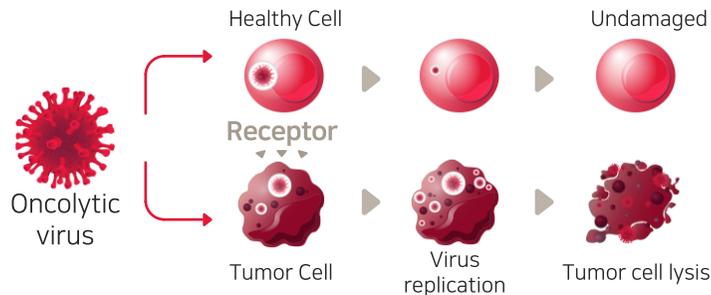
Targets breast cancer easily accessible via intra-tumoral administration of an oncolytic virus

Preliminary research confirms value of Zika virus as an anticancer virus for breast cancer, patent secured

## Mechanism of Action

- Directly dissolves cancer cells using oncolytic virus
- Indirectly treats cancer cells by activating the immune system

### Selective Infection of oncolytic virus



### Dual-mode of action

Direct cancer lysis

Indirect cancer lysis

Tumor Killing

Cancer cells, selective infection/ replication

Localized inflammation, destruction of microenvironment

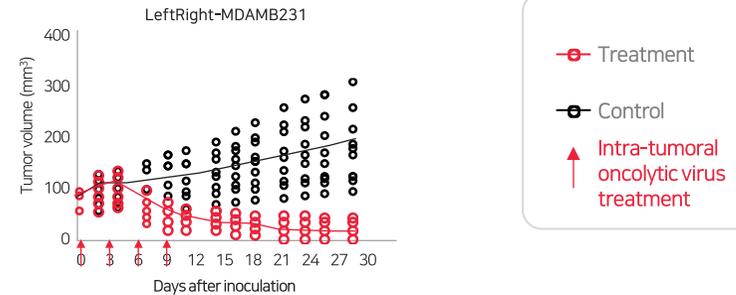
Activate Systematic anti-tumor immune response

Oncolysis, progeny virus release

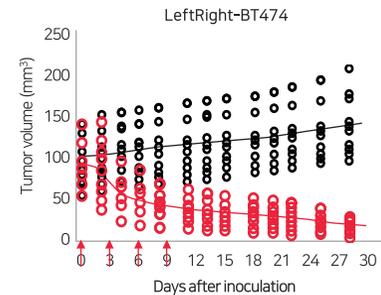
Activate innate immune response, destruction of neovascularization

## Study Data

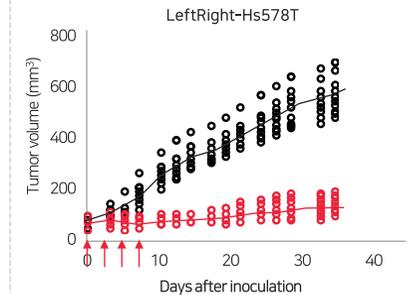
### Strong oncolytic effect cells



### Weak oncolytic effect cells



### No oncolytic effect cells

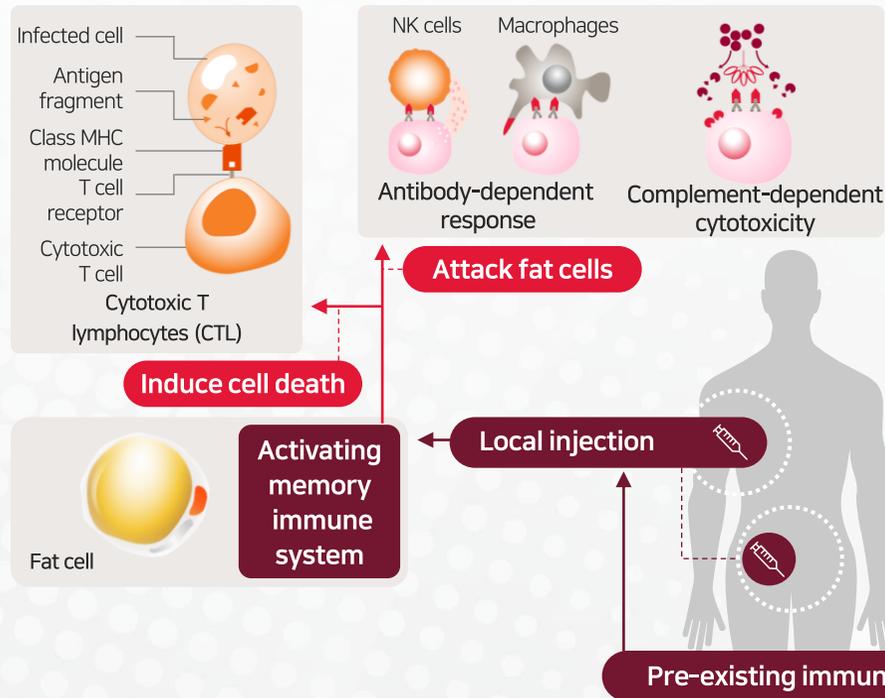


# (1-4) Vaccine Portfolio : Obesity Vaccine

Preliminary tests confirm fat-reducing effectiveness of treatment, patent secured  
 Expected to be utilized as a topical fat treatment

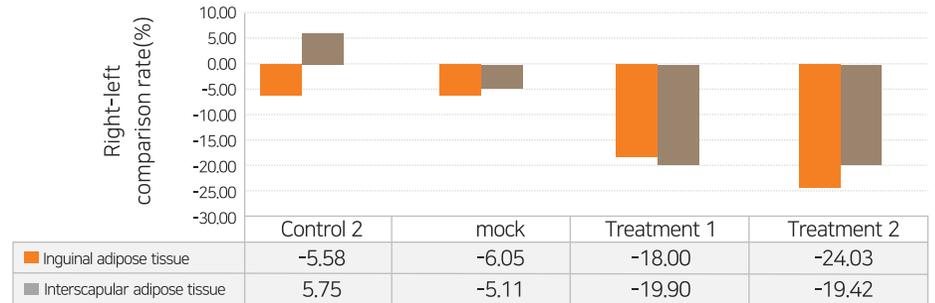
## Mechanism of Action

- Introduces a therapeutic agent to localized adipose tissue
- Activates the memory immune system and induces fat cell death

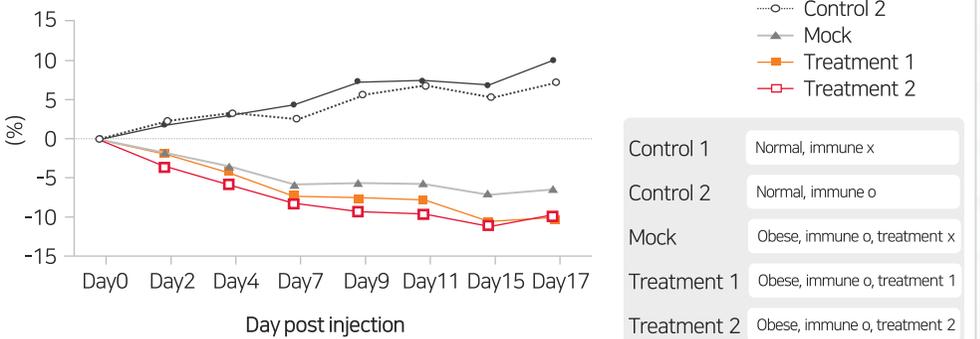


## Study Data

### % Change adipose tissue weight

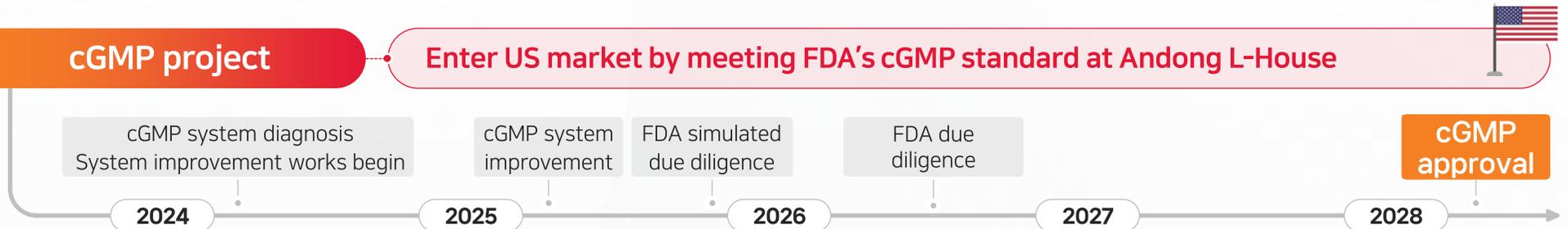


### % Change of body weight

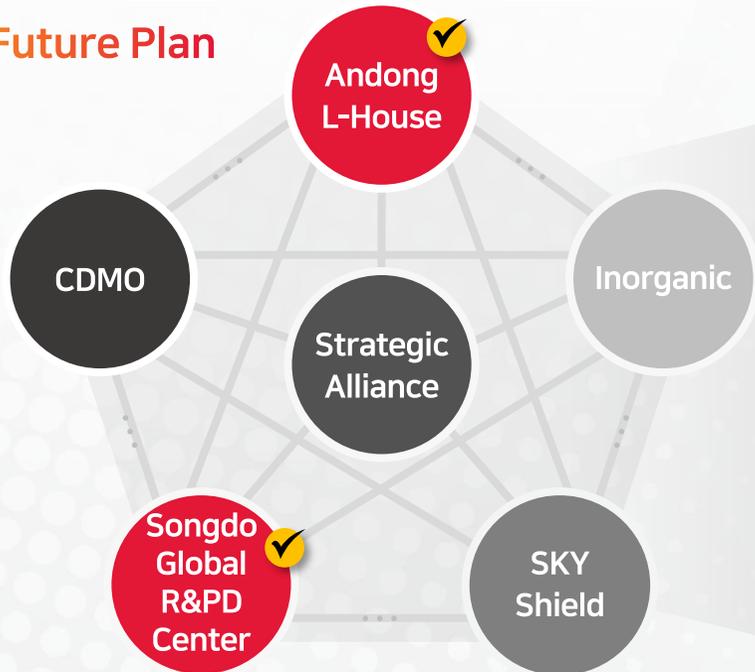


## (2) R&D/Infra Upgrade

Relocating R&D to Songdo Global R&PD Center, preparing to enter the U.S. with cGMP project, Securing additional capacity for large-scale initiatives



### Future Plan

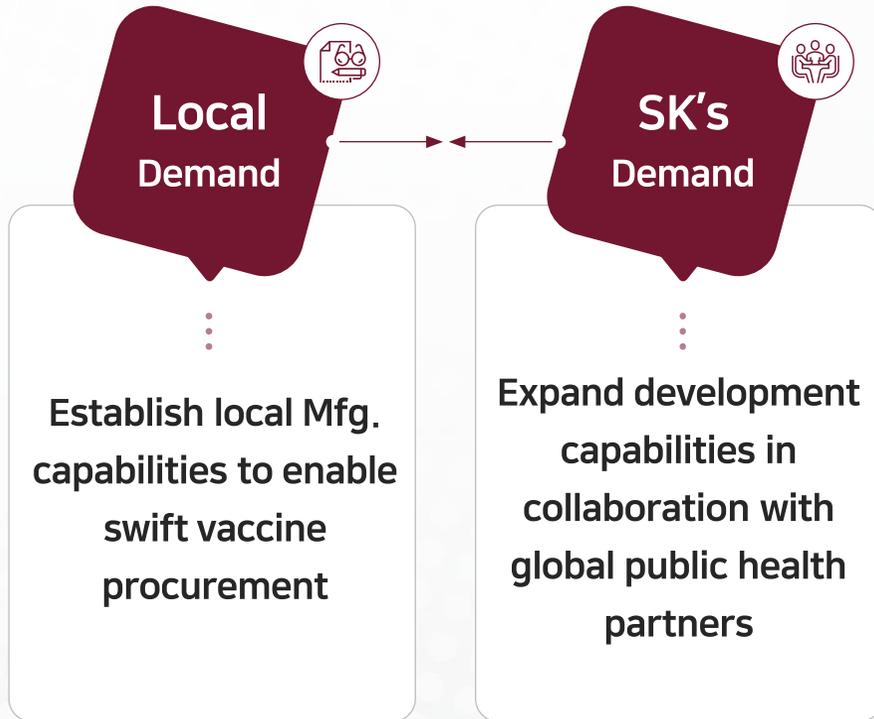


### Infra Management Strategy

- Songdo Global R&PD Center** (checked): R&D process development with cGMP pilot plant, completing a virtuous cycle infrastructure structure in conjunction with L House
- Andong L-House** (checked): Secure cGMP facility for products targeting high-income countries & PCV21 production
- In-organic**: Acquire stable revenue stream with extra capacity to seize opportunities for new business
- SKYShield**: Build a collaborative production base network to enhance long-term business sustainability through improved price and investment competitiveness

# (3) SKYShield

Establish global Mfg. base with multiple revenue model to suit regional needs and preferences



 Global network based on government partnership

## SKYShield in Asia

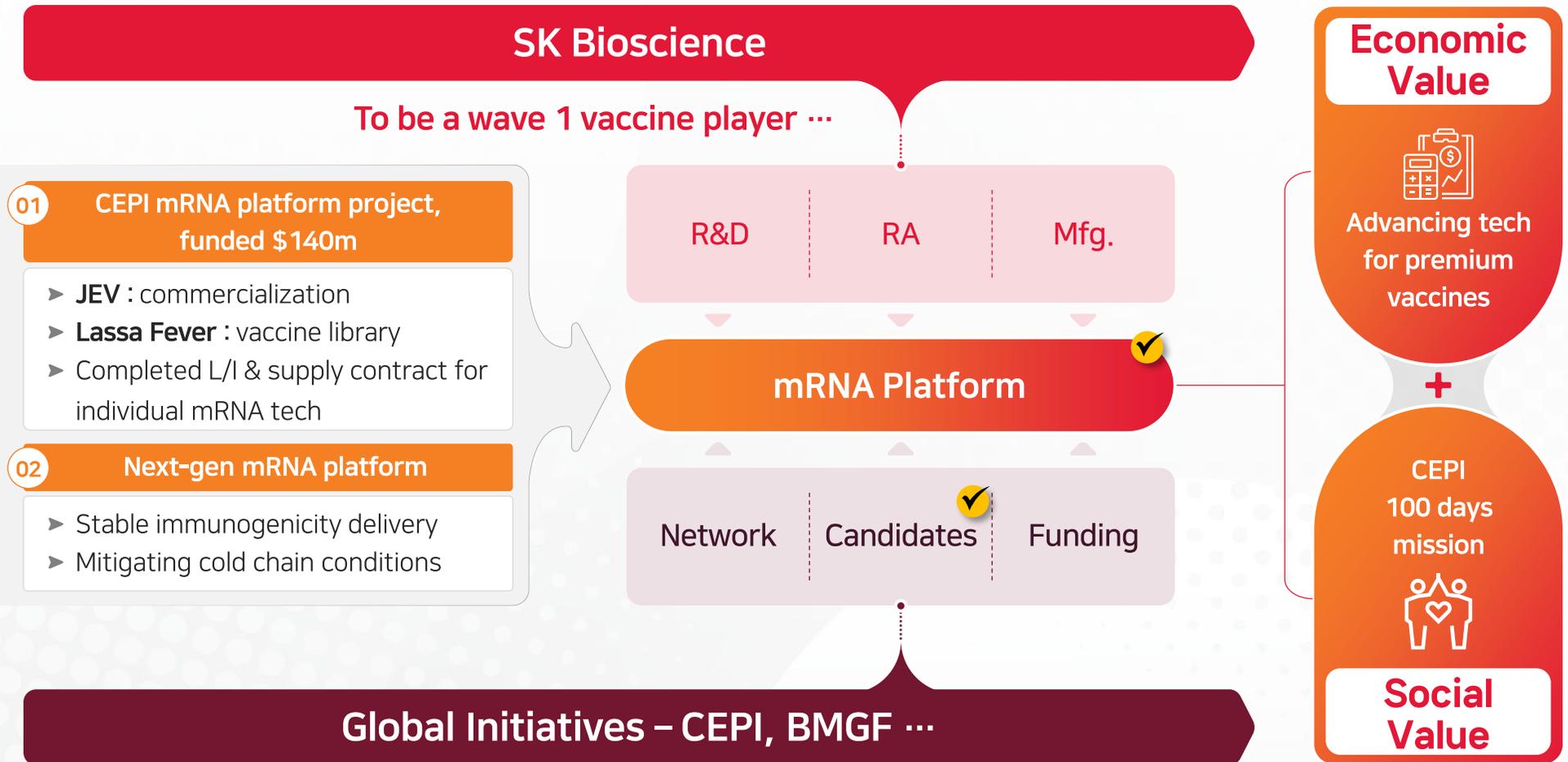


## Global Mfg. Network



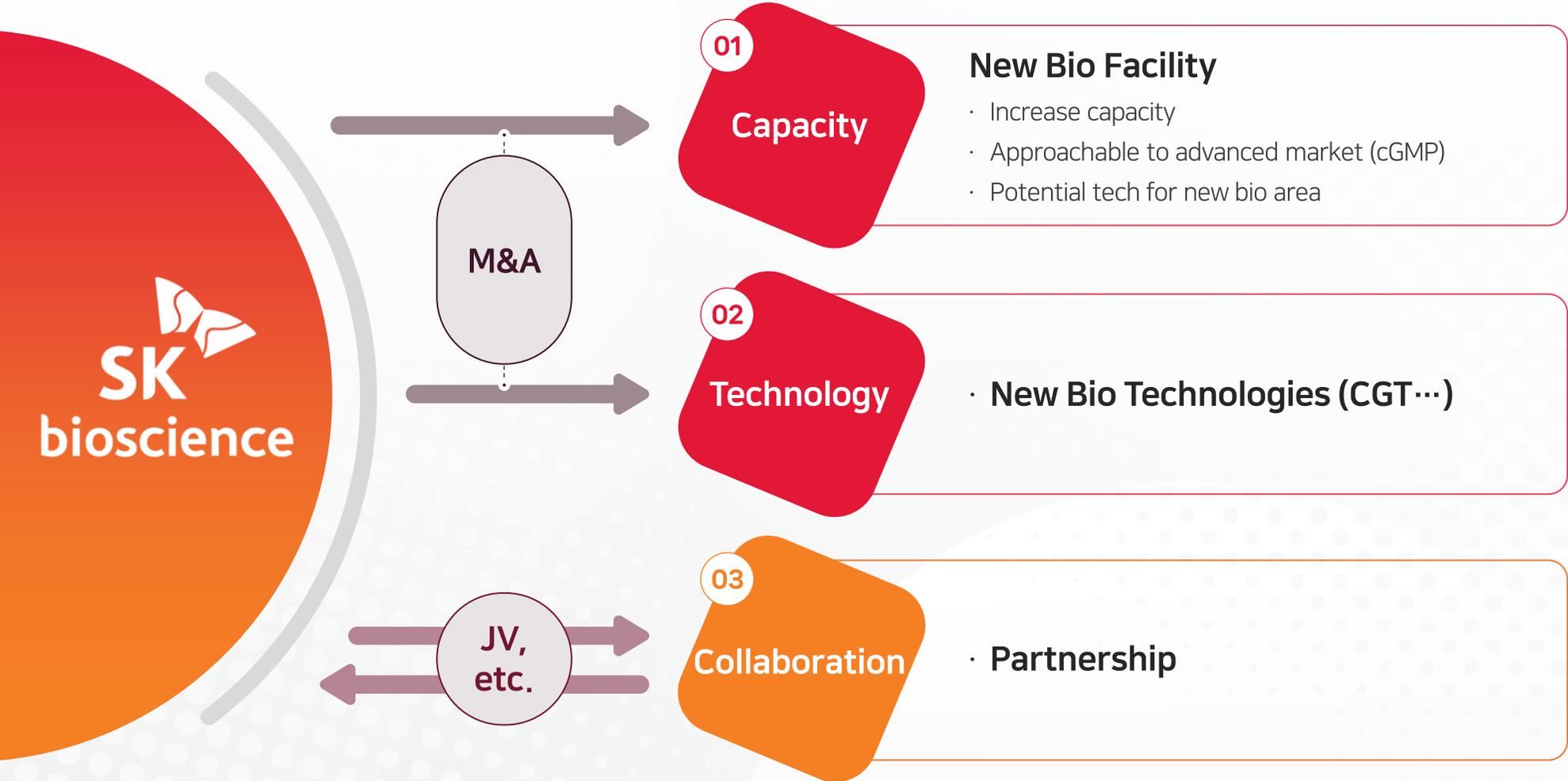
# (4) Next Pandemic Preparedness

Pursue wave 1 vaccine player in next pandemic via mRNA platform with global initiatives



# (5) Bio Business Expansion

Consider various options to capture a new opportunity





# 11. Business Update & Earnings Results

- (1) Updated Novavax COVID Vaccine Supply
- (2) Income Statement
- (3) Financial Statement

# (1) Updated Novavax COVID Vaccine Supply

The only alternative to mRNA XBB vaccine

Differentiating with the strength of protein-based vaccines in endemic

## Novavax XBB.1.5 Exclusive domestic supply

- The only protein-based XBB vaccine authorized in USA
- Strength in safety / distribution / storage
- Commercialization rights in Thailand / Vietnam

Annual domestic winter vaccine



## (2) Income Statement (Consolidated)

Significantly improved 3Q result due to Novavax settlement and flu vaccine  
3Q cumulative net income turned to profit

(Unit : KRW 100mn)	3Q23	YoY	QoQ	3Q23 (YTD)
<b>Revenue</b>	<b>2,318</b>	+1,408	+2,053	<b>2,789</b>
<b>Gross Profit</b>	<b>1,055</b>	+497	+990	<b>1,128</b>
SG&A expenses	445	+101	+28	1,164
<b>Operating Profit</b>	<b>609</b>	+396	+962	<b>(36)</b>
Non-operating profit & loss	(23)	(41)	(84)	73
<b>Profit before Income Tax</b>	<b>586</b>	+354	+879	<b>37</b>
<b>Net Profit</b>	<b>484</b>	+276	+644	<b>181</b>

### YoY Difference

- Novavax settlement inflow
- Flu vaccine production restarted
- Zoster vaccine sales remain strong

※ R&D expense details

	3Q22	3Q23	YoY
Total R&D	344	353	+9
Funding	169	105	-64
R&D (SG&A)	174	249	+74

## (3) Financial Statement (Consolidated, KRW)

### Balance Sheet

(Unit : KRW mn)	2021	2022	3Q23
<b>Total Assets</b>	<b>2,110,123</b>	<b>2,141,931</b>	<b>1,920,137</b>
<b>Current Assets</b>	<b>1,837,804</b>	<b>1,783,694</b>	<b>1,448,571</b>
Cash & cash equivalents	1,645,663	1,480,806	1,225,227
Account receivable & other receivable	48,135	89,661	66,906
Inventories	135,046	187,406	139,197
Other current assets	8,960	25,822	17,242
<b>Non-current Assets</b>	<b>272,319</b>	<b>358,237</b>	<b>471,566</b>
PP&E	210,265	264,158	276,056
Intangible assets	17,061	18,181	24,328
Other non-current assets	44,993	75,898	171,182
<b>Total Liabilities</b>	<b>508,811</b>	<b>400,229</b>	<b>197,233</b>
<b>Current Liabilities</b>	<b>459,952</b>	<b>380,037</b>	<b>183,245</b>
Account payable & other payable	102,185	55,705	34,438
Short-term borrowings	11,671	45,550	-
Current bonds	47,978	38,008	-
Current contract liabilities	98,789	155,676	120,686
Other current liabilities	199,329	85,098	28,120
<b>Non-current Liabilities</b>	<b>48,859</b>	<b>20,192</b>	<b>13,988</b>
Bonds	35,503	-	-
Long-term borrowings	-	-	-
Other non-current liabilities	13,356	20,192	13,988
<b>Total Equity</b>	<b>1,601,312</b>	<b>1,741,702</b>	<b>1,722,904</b>
Capital stock	38,250	38,392	38,392
Capital surplus	1,157,064	1,160,008	1,160,008
Other equity	901	9,848	9,848
Accumulated other comprehensive income	(208)	77	(36,869)
Retained earnings	405,305	533,378	551,526
<b>Net Cash</b>	<b>1,550,512</b>	<b>1,397,247</b>	<b>1,225,227</b>

### Income Statement

(Unit : KRW mn)	3Q22	4Q22	'22 Cum.	1Q23	2Q23	3Q23	3Q(Cum.)
Revenue	91,053	140,301	456,726	20,597	26,478	231,826	278,901
COGS	35,264	90,432	217,115	19,712	19,997	126,344	166,054
<b>Gross Profit</b>	<b>55,789</b>	<b>49,868</b>	<b>239,611</b>	<b>885</b>	<b>6,481</b>	<b>105,482</b>	<b>112,848</b>
SG&A expenses	34,430	41,155	124,597	30,074	41,790	44,544	116,408
<b>Operating Profit</b>	<b>21,359</b>	<b>8,714</b>	<b>115,014</b>	<b>(29,189)</b>	<b>(35,309)</b>	<b>60,937</b>	<b>(3,560)</b>
Non-operating profit & loss	1,817	21,744	26,720	3,523	6,074	- 2,315	7,283
<b>Profit before Income Tax</b>	<b>23,176</b>	<b>30,457</b>	<b>141,733</b>	<b>(25,665)</b>	<b>(29,235)</b>	<b>58,623</b>	<b>3,722</b>
Income tax	2,398	2,716	19,281	(11,398)	(13,258)	10,231	(14,426)
<b>Net Income</b>	<b>20,778</b>	<b>27,742</b>	<b>122,452</b>	<b>(14,268)</b>	<b>(15,976)</b>	<b>48,392</b>	<b>18,148</b>

※ Net Cash = Cash & Cash equivalents + Deposits – Debt (except Lease Liabilities)

## (3) Financial Statement (Consolidated, USD)

### Balance Sheet

(Unit : USD mn)	2021	2022	3Q23
<b>Total Assets</b>	<b>1,779.9</b>	<b>1,690.2</b>	<b>1,427.8</b>
<b>Current Assets</b>	<b>1,550.2</b>	<b>1,407.5</b>	<b>1,077.2</b>
Cash & cash equivalents	1,388.2	1,168.5	911.1
Account receivable & other receivable	40.6	70.7	49.8
Inventories	113.9	147.9	103.5
Other current assets	7.6	20.4	12.8
<b>Non-current Assets</b>	<b>229.7</b>	<b>282.7</b>	<b>350.7</b>
PP&E	177.4	208.4	205.3
Intangible assets	14.4	14.3	18.1
Other non-current assets	38.0	59.9	127.3
<b>Total Liabilities</b>	<b>429.2</b>	<b>315.8</b>	<b>146.7</b>
<b>Current Liabilities</b>	<b>388.0</b>	<b>299.9</b>	<b>136.3</b>
Account payable & other payable	86.2	44.0	25.6
Short-term borrowings	9.8	35.9	-
Current bonds	40.5	30.0	-
Current contract liabilities	83.3	122.8	89.7
Other current liabilities	168.1	67.1	20.9
<b>Non-current Liabilities</b>	<b>41.2</b>	<b>15.9</b>	<b>10.4</b>
Bonds	29.9	-	-
Long-term borrowings	-	-	-
Other non-current liabilities	11.3	15.9	10.4
<b>Total Equity</b>	<b>1,350.7</b>	<b>1,374.3</b>	<b>1,281.2</b>
Capital stock	32.3	30.3	28.5
Capital surplus	976.0	915.3	862.6
Other equity	0.8	7.8	7.3
Accumulated other comprehensive income	(0.2)	0.1	(27.4)
Retained earnings	341.9	420.9	410.1
<b>Net Cash</b>	<b>1,307.9</b>	<b>1,102.5</b>	<b>911.1</b>

※ Net Cash = Cash & Cash equivalents + Deposits – Debt (except Lease Liabilities)

### Income Statement

(Unit : USD mn)	3Q22	4Q22	'22 Cum.	1Q23	2Q23	3Q23	3Q(Cum.)
Revenue	70.5	108.7	353.7	15.8	20.4	178.2	214.4
COGS	27.3	70.0	168.2	15.2	15.4	97.1	127.6
<b>Gross Profit</b>	<b>43.2</b>	<b>38.6</b>	<b>185.6</b>	<b>0.7</b>	<b>5.0</b>	<b>81.1</b>	<b>86.7</b>
SG&A expenses	26.7	31.9	96.5	23.1	32.1	34.2	89.5
<b>Operating Profit</b>	<b>16.5</b>	<b>6.7</b>	<b>89.1</b>	<b>(22.4)</b>	<b>(27.1)</b>	<b>46.8</b>	<b>(2.7)</b>
Non-operating profit & loss	1.4	16.8	20.7	2.7	4.7	(1.8)	5.6
<b>Profit before Income Tax</b>	<b>17.9</b>	<b>23.6</b>	<b>109.8</b>	<b>(19.7)</b>	<b>(22.5)</b>	<b>45.1</b>	<b>2.9</b>
Income tax	1.9	2.1	14.9	(8.8)	(10.2)	7.9	(11.1)
<b>Net Income</b>	<b>16.1</b>	<b>21.5</b>	<b>94.8</b>	<b>(11.0)</b>	<b>(12.3)</b>	<b>37.2</b>	<b>14.0</b>

※ Exchange Rate (balance: end of the year, income: average)

USD/KRW	Balance	Income
2021	1,185.50	1,144.06
2022	1,267.30	1,291.15
2023.3Q	1,344.80	1,300.93



# Appendix

(1) Company Overview

(2) Company History

(3) Vaccine Business



# (1) Company Overview

## Eco Hub (Pangyo): R&D Center



**The largest vaccine-dedicated R&D center in Korea**

**Globally-competent specialists**  
(72% of total R&D personnel hold Master's or PhD degrees)

## Songdo Global R&PD center

**Expansion of R&D / manufacturing infra**

- Fostering world class R&D network
- Construction started in 2022/ completion by 2025



### Number of Employees

1,051 (11.2023)  
(343 in R&D, 383 in production,  
59 in marketing, and 266 staffs)



### ESG Rating

KCGS Grade A (11.2023)  
MSCI BBB (01.2023)



## L-House (Andong): Manufacturing Plant



**State-of-Art manufacturing capability**

- 9 suites in total (8 culture suites, 1 cell bank)
- Full fill-finish capabilities (pre-filled syringe, oral injector, liquid vial, freeze-drying vial)

**GMP(2014), EU-GMP(2021) Certified**

**Expansion in progress (by 2028)**

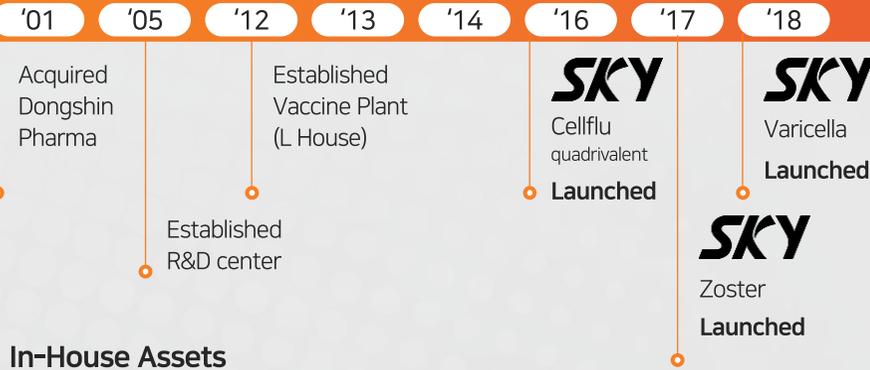
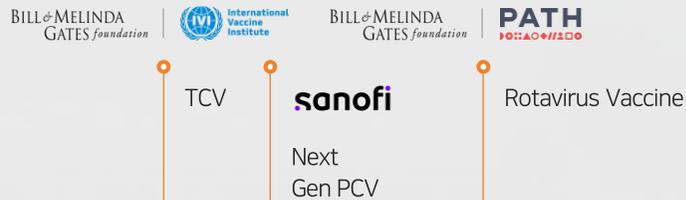
## Appendix

# (2) History and Track Record

### SKBS 1.0 Capabilities Build Up

Steady expansion of capability and network

#### Global Partnership



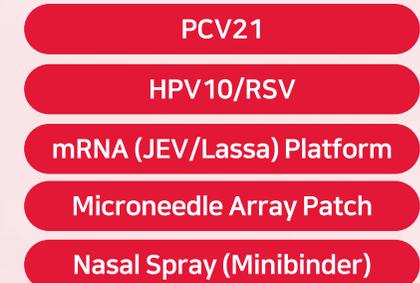
### SKBS 2.0 Quantum Jump

Active response to pandemic



### SKBS 3.0 New Momentum

Continued growth and partnership



## (3-1) Vaccine Business : SKYVAX

WHO PQ

**SKY**Cellflu  
quadrivalent

- ✓ The world's 1<sup>st</sup> quadrivalent cell-culture influenza vaccine
- ✓ Expanding to southern hemisphere (Thailand export started in 1Q)

WHO PQ

**SKY**Varicella

- ✓ Korea's first and only WHO PQ-certified varicella vaccine
- ✓ Contracted with PAHO

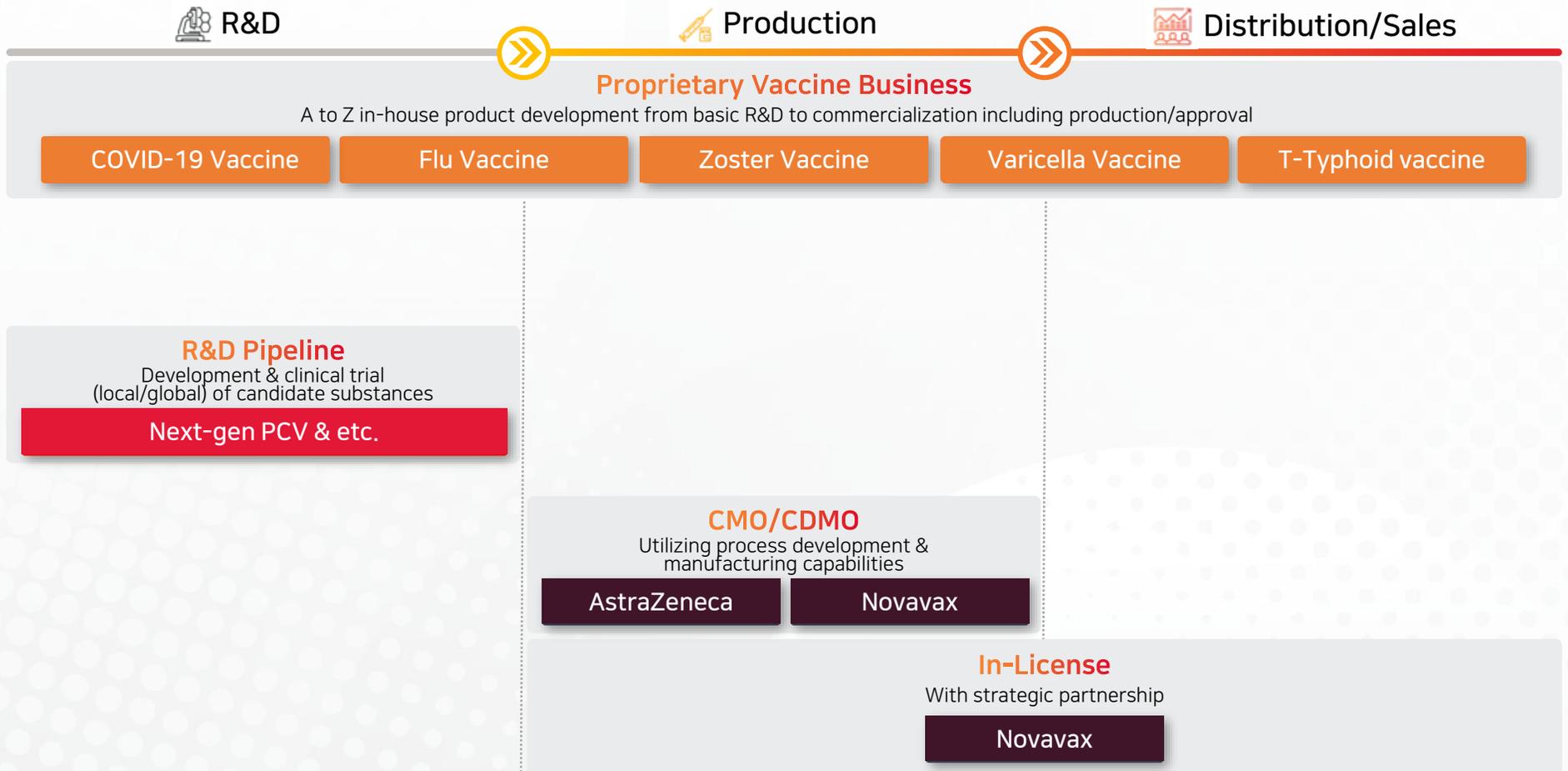
**SKY**Zoster

- ✓ The World's 2<sup>nd</sup> zoster vaccine
- ✓ 1<sup>st</sup> M/S in Korea in 2022 and 2023

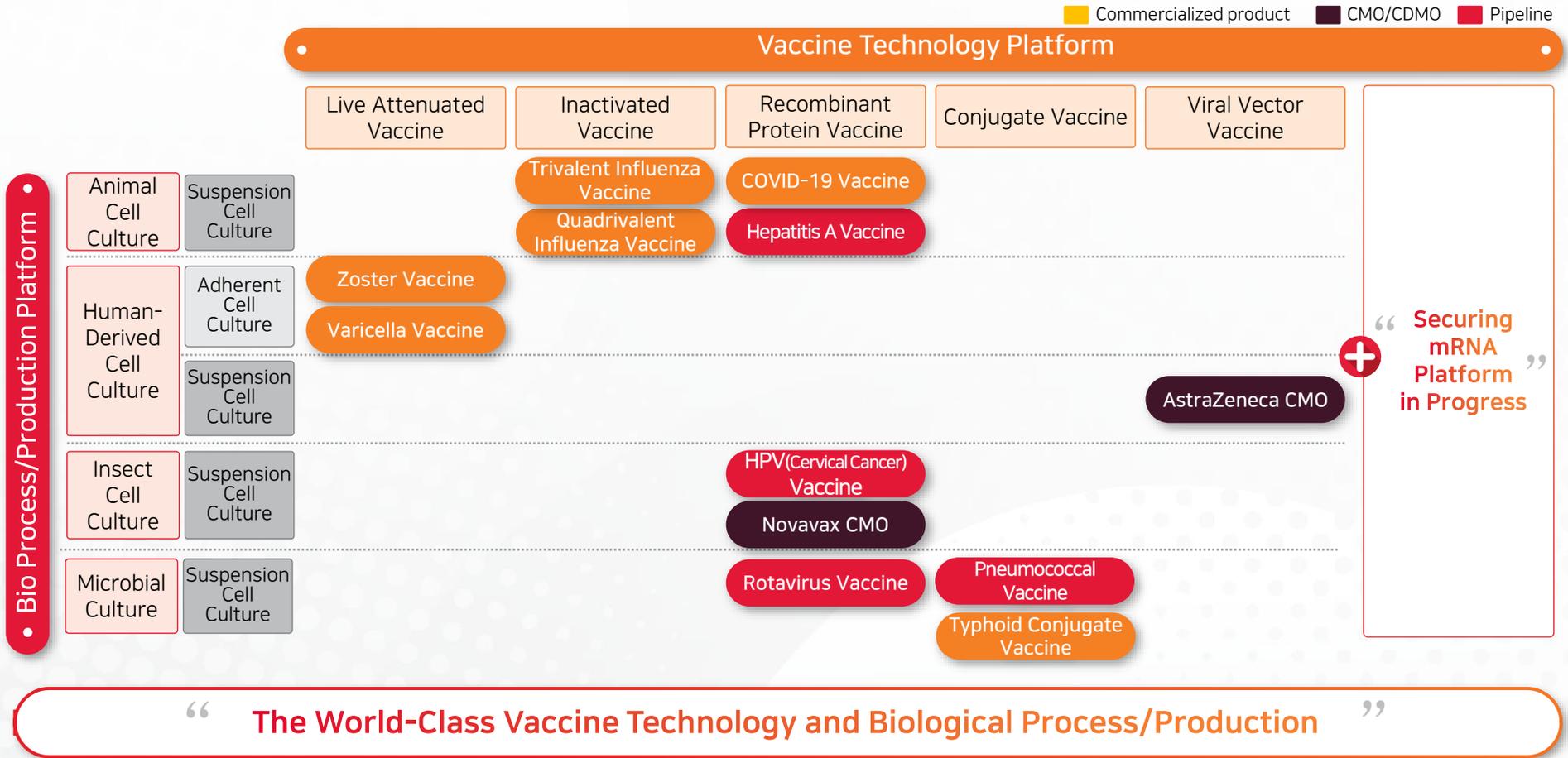
**SKY**Typhoid

- ✓ Co-developed with IVI (International Vaccine Institute)
- ✓ Planning to supply globally with WHO PQ

# (3-2) Vaccine Business : Full Value Chain Coverage



# (3-3) Vaccine Business : Extensive Platforms





**End of Document**

