# JUBILANT PHARMOVA Investor Presentation Sep'24





Statements in this document relating to future status, events, or circumstances, including but not limited to statements about plans and objectives, the progress and results of research and development, potential product characteristics and uses, product sales potential and target dates for product launch are forward looking statements based on estimates and the anticipated effects of future events on current and developing circumstances. Such statements are subject to numerous risks and uncertainties and are not necessarily predictive of future results. Actual results may differ materially from those anticipated in the forward-looking statements. Jubilant Pharmova may, from time to time, make additional written and oral forward looking statements, including statements contained in the company's filings with the regulatory bodies and our reports to shareholders. The company assumes no obligation to update forward-looking statements to reflect actual results, changed assumptions or other factors.

### **Jubilant Bhartia Group - Snapshot**



### Jubilant Bhartia Group founded by Shyam S. Bhartia and Hari S. Bhartia, leading industrialists from India





Strong presence in diverse sectors like Pharmaceuticals, Life Science Ingredients, Contract Research & Development Services and Therapeutics, Performance Polymers, Food Service (QSR), Food, Auto, Consulting in Aerospace and Oilfield Services



Global presence through investments in India, USA, Canada, Europe, Singapore, Australia, Africa, China, Sri Lanka and Bangladesh



Employs around 46,000 people across the globe with ~2,200 in North America

## **Company Snapshot**

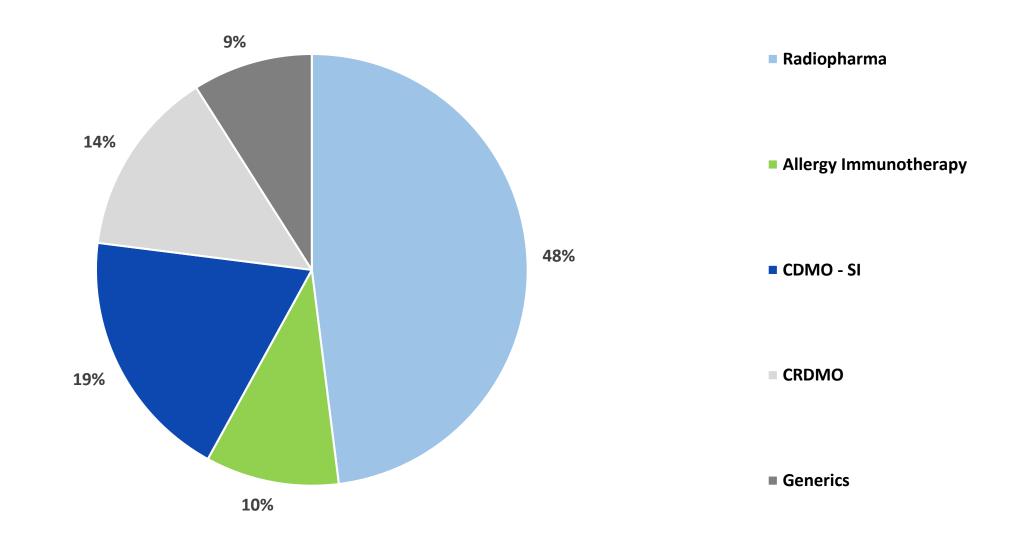


A global pharmaceutical company with strong team of approx. 5,500 multicultural people & Total Income at Rs. 6,922 Cr. (TTM\*)



## Revenue Split - Q1 FY25 (BU wise)





## **Global Manufacturing & Research Footprint**



World class manufacturing facilities, 2 state of the art research centers & 46 radiopharmacies

Kirkland, Montreal, Canada

CDMO – Sterile Injectables



Kirkland, Montreal, Canada Radiopharmaceuticals





Spokane, Washington, USA CDMO – Sterile Injectibles Spokane, Washington, USA Allergy Immunotherapy





INDIA

**NORTH** 

**AMERICA** 



Roorkee, Uttrakhand, India Generics 

Nanjangud, Karnataka, India API

G. Noida, Uttar Pradesh Drug discovery, CDMO



Chemistry Innovation Research Center Greater Noida

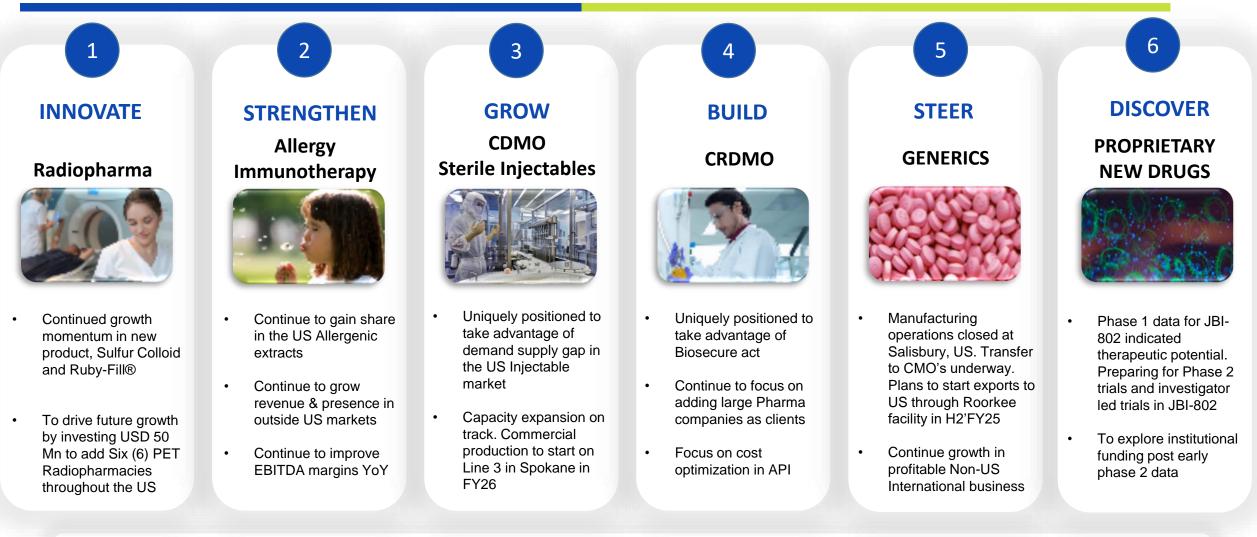


Bengaluru, Karnataka Drug discovery

## Jubilant Pharmova - Q1'FY25

JUBILANT PHARMOVA

### Announced Strategic Investments; Improved overall financial performance YoY





### Growing role in treatment of life threatening diseases

- Radiopharmaceutical is a combination of radioactive isotope and pharmaceutical drug
- Radiopharmaceuticals are used to diagnose and to treat life threatening diseases e.g. Cancer, Cardiac disorders, Neurological disorders
- There are **3 type of procedures** that use
   radiopharmaceuticals
  - SPECT Imaging
  - PET Imaging
  - Therapeutics

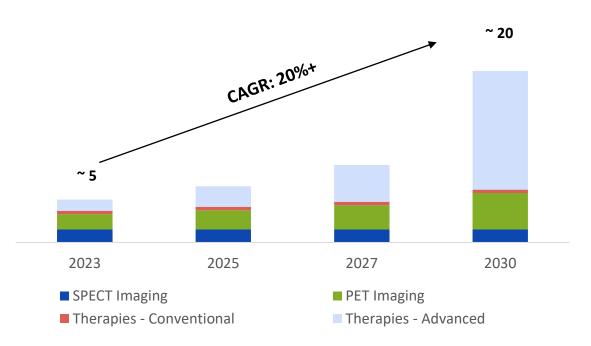
	Single-photon Emission Computed Tomography (SPECT Imaging)	Positron Emission Tomography (PET Imaging)	Radiopharmaceutical Therapeutics (Tx)
Description	<ul> <li>Uses "low-energy" radio isotopes that emit gamma rays, detected by SPECT cameras</li> </ul>	<ul> <li>Uses "high energy" radio isotopes that emit positrons, detected by a PET scanner</li> </ul>	<ul> <li>Radiation is systemically or locally delivered using pharmaceuticals that either bind preferentially to targeted cells or accumulate physiologically</li> </ul>
Key Facts	<ul> <li>Longer half-lives</li> <li>Images blood flow</li> <li>Specialized but legacy products, &gt; 90% generics</li> </ul>	<ul> <li>Shorter half-lives</li> <li>Images blood flow and metabolic processes</li> <li>Superior image quality</li> <li>Mostly innovative, few generics</li> </ul>	<ul> <li>Specialized / new generation isotopes</li> <li>Targeted therapies with higher efficacies</li> <li>Minimal off target toxicity vs. conventional treatments</li> </ul>
Market trends	<ul> <li>Large and Stable market</li> <li>Robust supply chain management</li> </ul>	<ul> <li>High growth market</li> <li>More expensive vis-à-vis SPECT</li> </ul>	<ul> <li>High no. of clinical trials in the space</li> <li>Accelerating M&amp;A activity in therapeutics space with multiple &gt; USD 1 Bn. deals in 2023</li> </ul>
Key Products & Isotopes	<ul> <li>MAA, DTPA, Exametazime, Sulfur Colloid, Mertiatide</li> <li>Isotopes - Tc99</li> </ul>	<ul> <li>Ruby-Fill ®, Pylarify, Illuccix, Neuraceq, FDG</li> <li>Isotopes - Rb82, F18, Cu64</li> </ul>	<ul> <li>Products - HICON® Sodium Iodine I 131, Pluvicto, Lutathera</li> <li>Isotopes - Lu177, Ac225, Pb202</li> </ul>
Mode of Operation			Radiophemaceulat

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US radiopharmaceutical market is expected to reach approx. USD 20 Bn. by 2030, growing at a CAGR of 20 %+

US Radiopharmaceutical Market (USD Bn.)



#### **Growth Drivers and Key Trends**

- Growth driven by superior imaging and therapeutics profiles, new emerging isotopes with low off target toxicity and increasing use cases for un-met needs
- PET imaging market growth is fueled by novel products, e.g., PSMA sales has exceeded USD 1 Bn. in <2 years of launch. PET market growth is driven by
  - Strong fundamentals such as better imaging, significantly lower false negatives and faster examination time
  - Applications extending beyond oncology, such as Cardiology scans, Alzheimer's
- Advanced Radiopharmaceutical Therapy market is witnessing launch of differentiated, high value and high efficacy products e.g. Pluvicto used for Prostate Cancer exceeding USD 1 Bn. sales.
  - Favorable pharmacological profile with lower toxicity and higher efficacy, especially in areas with un-met needs
  - New / emerging isotope profiles with targeted effects and lower off target impacts, such as Lu177 and Ac225
  - Application in therapeutic areas beyond oncology such as Neurological conditions, e.g. Alzheimer's

Consolidated market with high entry barriers



# Stringent manufacturing & regulatory environment

Adherence with extensive license framework. Stringent manufacturing set up required to handle isotopes

#### Managing time sensitive logistics

Radioactive isotope decays exponentially. The half life could be few hours to few days. Goal is to deliver high activity doses

#### Innovative new product development

High capex requirement, long developmental cycle and complex isotope handling requirements for novel product development.

# Forward integration with radiopharmacies

Forward integration with radiopharmacies helps to gain market share



We are one of largest manufacturer in the addressable market in the US with a wide radiopharmaceutical portfolio

Organ	Туре	Product	Key Indication		
Luna	SPECT	Tc99m-DTPA	Pulmonary Embolism		
Lung	SPECT	Tc99m-MAA	Pulmonary Perfusion		
Thyroid	SPECT	I-131	Localizing metastases associated with thyroid malignancies		
	Тх	I-131 HICON®	Hyperthyroidism, Selected cases of Carcinoma of Thyroid		
	PET	Ruby - Fill ®	Coronary Artery disease		
Cardiac	SPECT	Tc99m-Gluceptate	Cardiac blood pool Imaging		
	SPECT	Tc99m-Sestamibi	Coronary Artery disease		
Breast	SPECT	Sulfur Colloid	Localization of metastatic lymph nodes, imaging of liver, spleen		
Gastrointestinal	SPECT	Tc99m-Exametazime	Intraabdominal Infection		
Renal	SPECT	Tc99m-Mertiatide	Renal failure, Urinary tract obstruction		
Muscoskeletal SPECT Tc99m-MDP		Tc99m-MDP	Delineate areas of altered osteogenesis		
Current Addresseble Market USD 400 Mp					

### **Key Differentiators**

- Diversified product portfolio spread across SPECT & PET diagnostics and growing therapeutics
- **High profitability** owing to efficient cost structure, in-house APIs and robust supply chain management
- Partner of choice for leading customers owing to innovative products with superior profile vs. competitors and best in class customer service, e.g. Proprietary Ruby-Fill ® technology for Cardiac Imaging
- On-shore manufacturing facility in Montreal with high quality track record and ability to manage complex processes
- Strong R&D capabilities, continuously feeding the product pipeline to enable frequent market launches

Current Addressable Market ~ USD 400 Mn

Market leadership in select products - MAA, DTPA and I-131

#### **Draximage ® MAA**



MAA is used in the perfusion phase of a ventilation/perfusion (V/Q) scan to diagnose pulmonary embolism. JDI is market leader in the US market

#### Draximage ® DTPA



DTPA is used to assess pulmonary ventilation function in association with MAA to perform a Ventilation/perfusion (V/Q) scan. JDI is the sole supplier in the US market

### HICON® is a radioactive therapeutic agent indicated for the treatment of hyperthyroidism and selected cases of carcinoma

of the thyroid. JDI has no direct

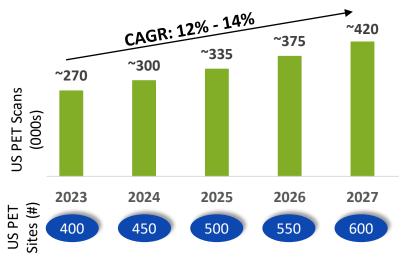
competition in the US market





### Innovation Leadership in Ruby - Fill<sup>®</sup>, Gaining market share consistently

#### **Growing Cardiac PET Market in the US**



Source : Company Estimates

#### **Growth Drivers and Key Trends**

- Superior product profile vs. SPECT scans
- Improved reimbursement landscape and diagnostic infrastructure
- Lower half lives vs. SPECT products leading to lower hospital burden



#### **Ruby-Fill ® Rubidium 82 generator and Elusion System**

- The RUBY-FILL® Rubidium 82 Generator contains accelerator produced Strontium-82. which decays to Rubidium-82 (Rb-82). It is used for Cardiac PET scan, a non-invasive imaging procedure of the myocardium, to evaluate regional myocardial perfusion in adults with suspected or existing coronary artery disease.
- Ruby-fill is installed in top 80% US Cardiac networks and is positioned to further increase market share
- Lower cost vs. competition driven by higher shelf life of generators, hence driving more scans per generator
- Better Image quality due to patented feature of saline push dosing, significantly increasing Rb-82 activity delivered to the heart
- Consistent image quality due to proprietary constant activity mode, plus patient weight based dosing

### Gaining market share in the US cardiac PET market; Strong growth in installations in the US in Q1'FY25 13

Ruby-Fill<sup>®</sup> and Robust product pipeline to fuel future business growth





Ruby-Fill<sup>®</sup> Growth potential

- Gain market share in the growing US cardiac PET market
- Scale ex-US markets such as Europe, Canada, etc.



PET & SPECT Product Pipeline

- Target to launch new products in PET Imaging with an addressable market at ~ USD 500 Mn.
- Pipeline in SPECT Imaging with an addressable market at ~ USD 50 Mn.



Development of therapeutic product - MIBG

 Completed patient dosing for Phase II clinical trials for MIBG. Expect launch for relapse / refractory Neuroblastoma (~400 patients per annum) in CY 2026.

Driving revenue growth

Particulars ( Rs. Cr.)	Q1'FY24	Q4'FY24	Q1'FY25	Ү-о-Ү
Revenue	204	256	262	28%
EBITDA	93	126	126	35%
EBITDA Margin (%)	46%	49%	48%	240 bps

- Q1'FY25 revenue grew YoY on the back of new products sales in Sulfur colloid and growth in Ruby-Fill®
- Q1'FY25 EBITDA increased YoY on the back of increase in revenue





### US Radiopharmacy market is expected to grow on the back of novel PET & Therapeutic products

#### **SPECT** Radiopharmacy



#### **PET Radiopharmacy**





#### **Growth Drivers and Key Trends**

- Radiopharmacy dispenses and distributes radiopharmaceutical products
- Consolidated market in US with top 3 radiopharmacy networks dispensing and distributing 70%+ products
- Increasing demand of novel PET diagnostics product, e.g., Cyclotron based pharmacies for F-18 PSMA, Alzheimer's products. Additionally, SPECT pharmacies can handle generator based PET products, e.g., Ga-68 PSMA
- Therapeutics dispensing share of pharmacy networks expected to grow, driven by Stringent USP 825 regulations. Most clinics and hospitals don't want to invest in the clean room infrastructure for dispensing. Additionally, big pharma companies have limited capabilities in the distribution and handling wastes of radioactive materials
- Emerging radioisotopes landscape such as Rb-Sr, Ga-68, Cu-64, Lu-177, Ac-225 are leading to development of new PET Imaging and Theranostic products which will further fuel radiopharmacy share of dispensing and distributing these products. 16

1. USP develops uniform minimum standards for the preparation, compounding, dispensing, and repackaging of radiopharmaceuticals





#### **Consolidated Market**

	# of radio pharmacies in the US	SPECT pharmacies	PET pharmacies	# of hospitals served in the US
CardinalHealth <sup>®</sup>	160+	✓	✓	~ 4,100
JUBILANT RADIOPHARMA	46	✓	✓	~ 1,800
SIEMENS Healthineers PETNET Solutions	41		✓	~ 700
👸 RLS	31	✓		~ 900
PharmaLogic Take The Lead	42	✓	✓	~ 200
	14		✓	~ 200

#### **Barriers to Entry**



#### Stringent Regulations

Each treatment site is required to obtain a license from Nuclear Regulatory Commission and comply with additional state, local, and hospital regulations for transportation and usage



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#### Intricate Supply Chain

A robust supply chain is required given short product halflives and strong customer preference for just-in-time ordering, compared to large bulk orders

#### **Complex Care Coordination**

Requires awareness, education, and collaboration across multiple hospital departments

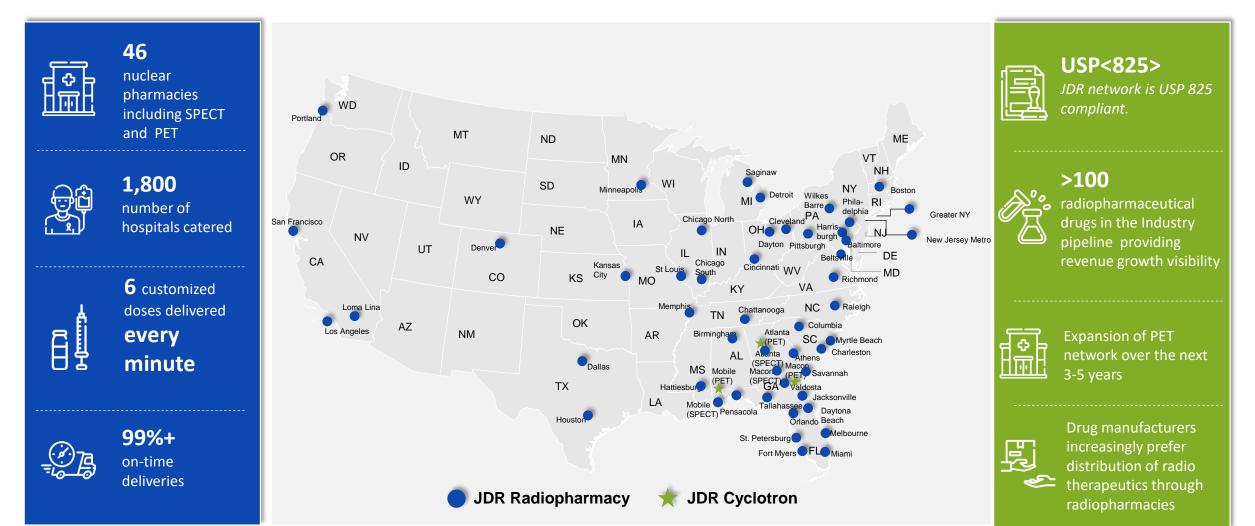
#### **Skilled Manpower Requirement**



Authorized nuclear pharmacists require at least 4,000 hours of training or experience in nuclear pharmacy practice along with rigorous examinations



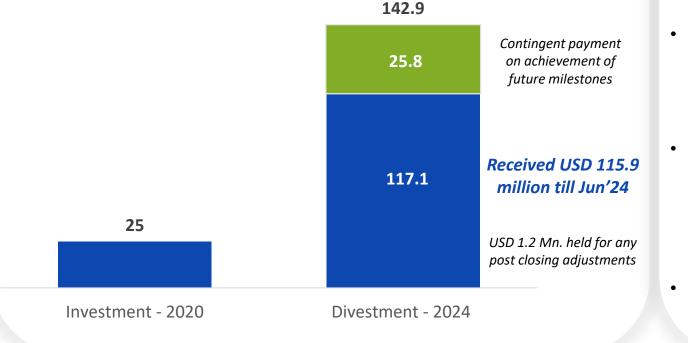
2nd largest radiopharmacy network in the US





Sofie transaction closed; Investing in PET radiopharmacy network throughout the US to drive growth & profitability

### Sofie (PET Radiopharmacy Network) merger transaction closed Investment generated multifold returns



Plans to invest USD 50 million to strengthen PET radiopharmacy network to drive growth & profitability

- Plans to **invest USD 50 million** to expand PET radiopharmacy network by adding **Six (6) sites** in strategic locations throughout US.
- Investment shall position the company in the growing PET Imaging segment and shall also enable the company to secure long term contracts with leading PET radiopharmaceutical manufacturers.
- New PET radiopharmacies to be fully operational by FY28. Funding through internal accruals and long term credit.

### Strengthening position by expanding PET radiopharmacy network to Nine (9) sites through out the US



Expand Radiopharmacy network, Ride on volume & new product led industry growth



Radiopharmacy Network Expansion

- Expand PET radiopharmacy network by adding six (6) PET radiopharmacies in strategic locations throughout United States.
- Evaluate opportunity to expand SPECT radiopharmacy network.



### New Product led volume growth

- Drive revenue on the back of increased volume for new products
- Increase market share across Group purchasing organizations, Integrated delivery networks and independents hospitals

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### Enhance Operational Efficiencies

- Further strengthen performance on key pharmacy operational metrics
- Continue to improve sourcing efficiency

### JUBILANT PHARMOVA

## Radiopharmacy

Volume to drive revenue growth & operational efficiency to drive margin expansion

Particulars ( Rs. Cr.)	Q1'FY24	Q4'FY24	Q1'FY25	Y-o-Y
Revenue	487	561	570	17%
EBITDA	2	38	13	617%
EBITDA Margin (%)	0%	7%	2%	190 bps

- Q1'FY25 revenue grew YoY on the back of increase in volume from new products
- Q1'FY25 EBITDA increased YoY on the back of increase in volume & improvement in operational efficiency
- Q4'FY24 EBITDA margins were higher due to impact of seasonality in the business

> 50 Mn.

Americans suffer

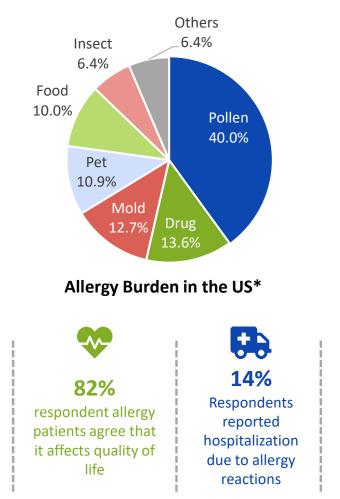
from some type

of an allergy

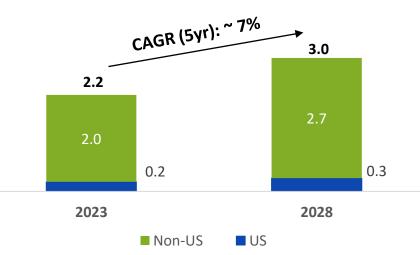
annually

### Global market poised to reach USD 3 Bn. by 2028, growing at a CAGR of ~ 7%

### Most Common Allergies in US (2023)



Global Allergy Immunotherapy Market (USD Bn.)



- Allergy immunotherapy (AIT) refers to the treatment for allergic reactions against a variety of allergens including Pollen, Mold, PET dander, Food & Insect (treated by venom immunotherapy) etc. In this treatment, repeated shots of allergic antigens are provided to develop immunity and eventually cure allergy over a period of time.
- There are two kinds of delivery mechanisms Sub Lingual and Sub Cutaneous

#### Growth Drivers

>50

Deaths in US in a

year due to

Anaphylaxis

- Increasing allergy cases
- Awareness of allergy treatment
- Advancement in treatment options





Jubilant is #2 player in the US Sub-Cutaneous Allergy Immunotherapy market with strong entry barriers

### **Strong Entry Barriers**

- Highly concentrated US market with well established players
- Raw material comprising natural extracts / organisms involve a complex supply chain from sourcing to processing.
- Grandfathered approvals with any new product needing a Biologic License Approval which is more complex than small molecule drug approval.
- In order to succeed, New Entrant has to offer a complete portfolio of products, which shall entail significant investment, development and approval lead times.

#### **Key Differentiators**

- # 2 player in the US SCIT allergy market & Sole Supplier of Venom immunotherapy in the US since 2018.
- Product portfolio includes 6 different Insect Venom products, 200+ allergenic extracts and skin testing devices, with best in class customer service and high supply reliability.
- **HollisterStier'** brand loyalty going back 100 years
- Onshore USFDA approved Manufacturing. Dedicated Sales force in the US, serves over 2,000 customers including Allergists, ENT Physicians

**Balanced Product Portfolio** 



#### **Venom Extracts**



- Venom extracts includes products for Honey Bee, White-Faced Hornet, Yellow Hornet, Wasp, Yellow Jacket and Mixed Vespid allergies
- Sole supplier in US

#### **Allergenic Extracts**



- Allergenic extracts (over 200 products) includes products for Dog, Cat, Mite, Tree Pollen
- Combination of specialized (e.g., Dog) and standardized extracts (e.g., Cat); 2<sup>nd</sup> largest in the US

#### **Skin Testing Devices**



- Multiple skin test system includes ComforTen, Quintest and Quintip
- Differentiated product vs. competition – stainless steel lancets vs. plastic tips ensuring minimal trauma

Moving ahead on three pronged growth strategy





#### **Enlarge US Venom Segment**

- Create customer awareness on the Bee sting allergy through targeted marketing campaigns and enlarge the US Venom segment
- Leverage Brand equity in the community



### Gain market share in US Allergenic extracts

- Use Venom products to gain customer wallet share in Allergenic extracts
- Launch differentiated products e.g. Ultra Filtered Dog product



#### Penetrate outside US market

- Penetrate the Europe market on the back of **strategic partnerships**
- Expand the distribution channel in APAC, MEA & LATAM

Sustained growth momentum & margin expansion



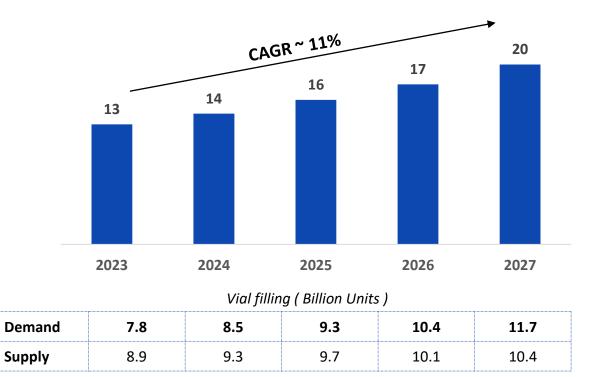
Particulars ( Rs. Cr.)	Q1'FY24	Q4'FY24	Q1'FY25	Ү-о-Ү
Revenue	151	188	168	11%
EBITDA	50	75	63	26%
EBITDA Margin (%)	33%	40%	38%	440 bps

- Q1'FY25 revenue grew YoY on the back of volume & price increase
- Q1'FY25 EBITDA margin increased YoY due to increase in revenue and improvement in operational efficiencies

### **3** CDMO - Sterile Injectables Demand expected to outpace the supply by FY'26



Global CDMO-SI Market Size (in USD Bn.)



The business is engaged in Fill and Finish for Sterile Injectables, where a sterile drug is transferred from a filling needle into a sterile vial and then a stopper is applied, except in cases, where the drug requires sterile lyophilization.

#### **Growth Drivers & Key Trends**

- Increase in demand: Increasing number of drugs/injectable in development pipeline driven by biologics (65%+ of current pipeline) and LOEs
- Increase in outsourcing: Outsourcing expected to increase, driven by limited internal capacity and capabilities, cost reduction initiatives and big pharma focus on internalizing specialized capabilities, e.g., Proteins, RNA, Peptides
- **Significant shortages:** Since 2015, 50-60% of new drug shortages in the US have been injectables, signaling need for significant on-shoring
- Demand Supply Gap expected to widen further with increasing consolidation, e.g., Novo Holding acquired Catalent for enterprise value of USD 16.5 Bn. This transaction may further reduce the overall capacity available for outsourcing, given Novo is expected to use capacity for manufacturing their anti-obesity drugs.

### Structurally attractive market with key differentiators driving our growth

### **Strong Entry Barriers**

- Majority of commercial contracts are typically long duration (typically 3 years or more with auto renewal)
- Greenfield expansion is considerably difficult due to high up-front capex required with ongoing opex to support initial product commercialization
- Innovator companies prefer onshore North American manufacturers with a good quality track record in light of continuing supply challenges
- Attractive niches & Technology (e.g., Isolator Technology, Multi Dose Preservative Free ophthalmic drops, etc.) have emerged, driven by requirements of differentiated technologies, higher quality standards, people capabilities and capital investment
- **High switching costs for customers** due to significant tech transfer time (18-24 months), other challenges, e.g., quality
- Stringent regulatory requirements (FDA) for sterile manufacturing, with ever evolving landscape making difficult for new entrants

### **Key Differentiators**

- Deep and long-term relationships with our customers Top 10 Customers have been with us 5+ years.
- On Shore Manufacturing facilities in Spokane, US and Montreal, Canada
- Co-invested capacity with US govt., advanced isolator technologies are part of our expansion, meeting both regulatory & customer requirements
- Steady quality track record in past audits including inspections from US FDA, ENVISA Brazil and others
- Focused core competency in Sterile Fill & Finish and Ophthalmic (ointments, liquids & creams) sterile products
- Customer satisfaction is strong with 90%+ repeat Customer business rate





#### Collaborative partner with unique capabilities & strong customer relationships



### Full Suite of Services with On-shore manufacturing

### Strong Quality track record

- Can handle Vial size from 2ml to 100 ml with batch size up to 2,000 ltr.
- **Full suite of services** including sterile fill and finish (Liquid & Freeze dried), Ophthalmic (Liquids, Ointments and creams) and Biologics
- Strategically located on-shore manufacturing footprint in North America

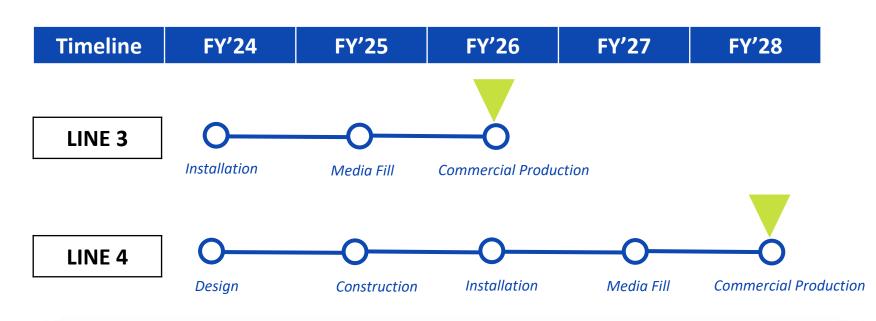
- Steady quality track record in past audits at each location including inspections from FDA, ENVISA and others
- Stability in core portfolio at Spokane with **multiple products having patent protection** and limited competition

- Strong Customer Relationships
- Serve leading pharmaceutical companies globally
- Long standing relationship with customers with some longer than10 years and 90%+ repeat business rate
- Customer-focused approach with strong Tech Transfer & Project Management collaboration from the development phase
- 25+ Customers across the world



### Doubling of capacity with state of the art technology at Spokane on track





- Doubling Spokane capacity of sterile fill and finish (both liquid and lyophilization) within stipulated timelines and costs. Total investment at USD 285 Mn. partly funded through cooperative agreement with US Govt. for USD 149.6 Mn.
- Line 3 commercialization expected in FY'26, followed by Line 4 in FY'28

Driving Revenue growth

Particulars (Rs. Cr.)	Q1'FY24	Q4'FY24	Q1'FY25	Ү-о-Ү
Revenue	254	259	324	27%
EBITDA	41	58	57	40%
EBITDA Margin (%)	16%	22%	18%	160 bps

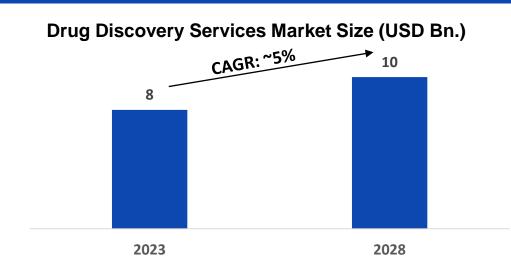
- Q1'FY25 revenue increased YoY due to increase in volume
- Q1'FY25 EBITDA & EBITDA margins
   increased YoY due to increase in revenue
- Q1'FY25 EBITDA margin lower than Q4'FY24 due to impact of shutdown and regulatory inspection



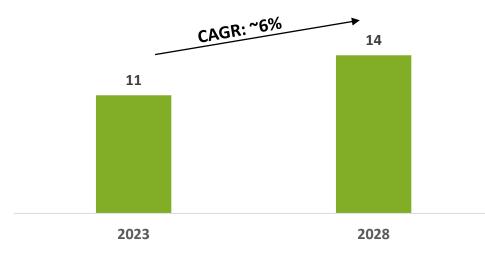
# **4** CRDMO: Drug Discovery Services, CDMO & API



Both Drug Discovery Services and API/Formulation Development markets are expected to grow at ~5-6% CAGR



#### **API/Formulation Development Market Size (USD Bn.)**



#### **Growth Drivers for Drug Discovery Market**

- Large Pharma companies to de-risk their supply chain by adding "friend sourcing" locations. Biosecure Act is proposing to prohibit US Govt. and US life sciences companies, (who are receiving federal grant money) to work with biotechnology service providers that are connected to foreign adversaries
- Rise in **specialized discovery technologies** such as ADCs and oligonucleotides
- Lower Biotech funding stalled growth, however early signs of recovery with further recovery expected by late FY'25

#### **Growth Drivers for API / Formulation development Market**

- Focus on integrated service offering ranging from discovery to development
- Rapid momentum in specialized CDMO services to support ever increasing clinical trials, e.g., High potency APIs with stringent exposure control requirements
- Rising share of biologics along with increasing investments in biologics for new niche modalities

Source : Company Estimates

## **CDMO API market**

### CDMO API Market is estimated to grow at a CAGR of ~ 6%+



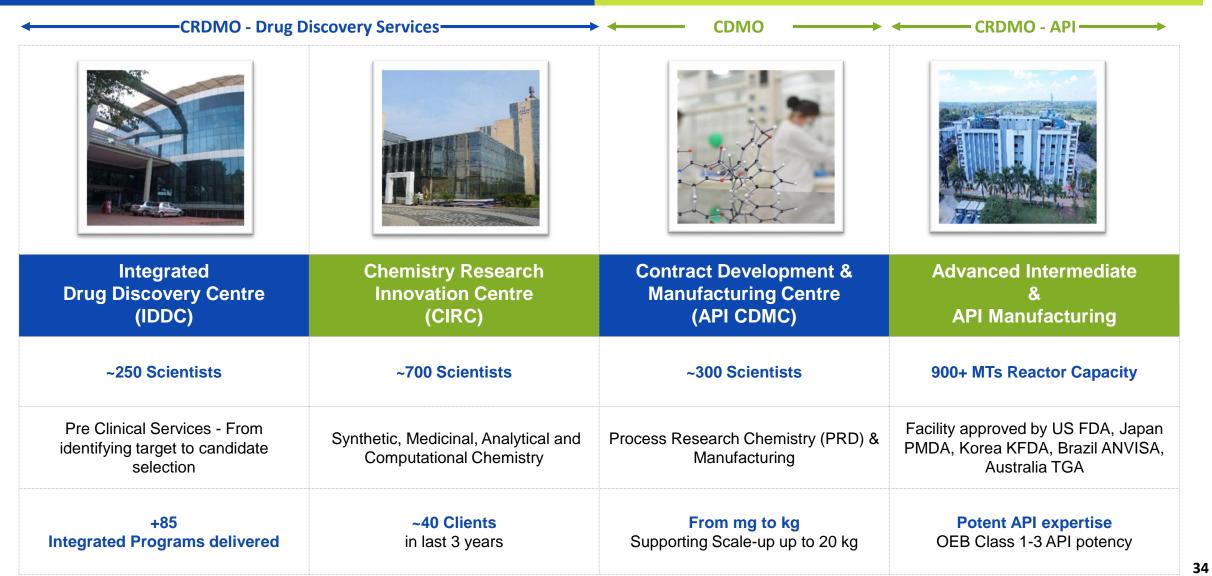
CDMO API Market Size (USD Bn.) CAGR: +6% ~ 130 + 18 ~ 95 + 12 12 99 75 2023 2028 HPAPI Large Molecule Small Molecule

#### **Growth Drivers for API Market**

- Although API market is dominated by the small molecules, higher growth is experienced by HPAPIs and large molecule segments
- Cost competitiveness is the key including backward integration into major KSMs to mitigate pricing pressures on the finished good formulation companies
- Rising interest of companies in manufacturing custom generics for innovators, ensuring higher margins
- Move towards friend sourcing becoming increasingly apparent, reducing concentration risk of generics API manufacturing

## **CRDMO : Drug Discovery Services & API**

We provide end to end CRDMO services for drug substance in small molecules

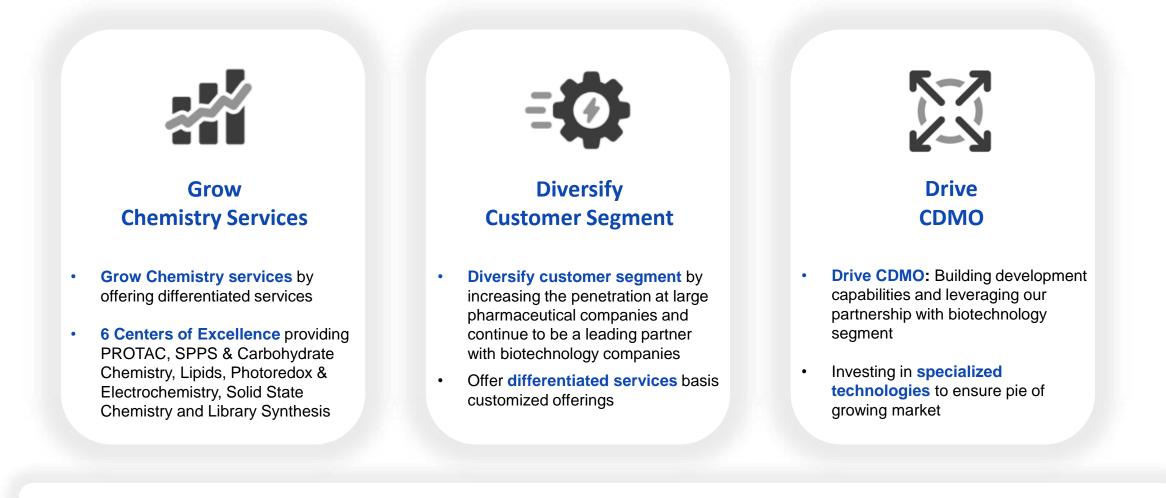




## **Drug Discovery Services**

Three Pronged growth strategy





Revenue from two large Pharma clients (on boarded in Q4'FY24) to increase from H2 FY25 onwards; Well prepared to scale up infrastructure (labs, scientific talent etc.) to take advantage of increase in CRO demand



### Maximize market penetration & Transform operations by increasing cost effectiveness & asset utilisation



**State of the art GMP manufacturing facility** spanning over 41 acres with 7 multi stream manufacturing blocks

Facility inspected by FDA, PMDA Japan, KFDA Korea, ANVISA Brazil, TGA Australia

#### **Dominant position in select therapies**

- Comprehensive portfolio comprising of APIs from various therapeutic area -Central Nervous System, Cardiovascular System, Anti-infective and Antidiabetic
- Among the largest producers for API's such as, Oxcarbamazepine, Carbamazepine, Pinaverium, Resperidone, Donepezil, Lamotrigine, Meclizine, Azithromycin & Valsartan
- Reach to 50 countries, Servicing 160+ customers

### Strategy going forward

- Maximize penetration: Fortifying sales in USA, Japan, LATAM, MENA regions
- Transform operations: Increasing overall cost effectiveness & asset utilisation
  - Increase backward integration: De-risk by increasing backward integration & follow China plus one strategy for sourcing
  - Increase capacity utilization: Leverage GMP manufacturing capabilities for Innovative APIs (CDMO)



**CRDMO API:** *Pricing pressure continues; Taking initiatives to reduce operating costs & increase capacity utilization* 

#### **Drug Discovery Services**

Particulars ( Rs. Cr.)	Q1'FY24	Q4'FY24	Q1'FY25	Y-o-Y
Revenue	103	117	113	10%
EBITDA	22	29	22	0%
EBITDA Margin (%)	21%	24%	19%	(180) bps

#### API

Particulars ( Rs. Cr.)	Q1'FY24	Q4'FY24	Q1'FY25	Y-o-Y
Revenue	177	165	130	(27%)
EBITDA	13	24	16	22%
EBITDA Margin (%)	7%	14%	12%	490 bps

#### **CRDMO** Segment

Particulars ( Rs. Cr.)	Q1'FY24	Q4'FY24	Q1'FY25	Y-o-Y
Revenue	280	282	243	(13%)
EBITDA	35	52	38	8%
EBITDA Margin (%)	12%	19%	16%	310 bps

- Q1'FY25 revenue increased YoY due to higher volume. Biotech Industry headwind continues. **Revenue from two new large pharma clients is expected to increase from H2 FY25 onwards**
- Q1'FY25 EBITDA flattish on YoY

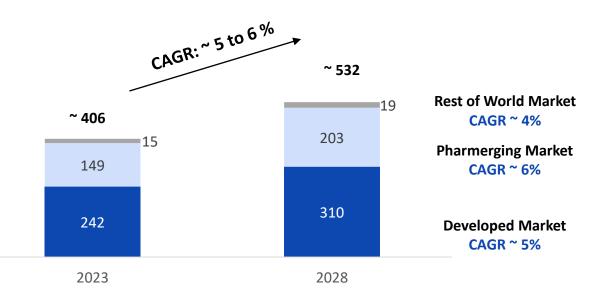
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- Q1'FY25 revenue decreased YoY & QoQ due to change in product mix
- Q1'FY25 EBITDA increased YoY due to cost optimization efforts despite lower revenue









■ Developed Markets ■ Pharmerging Markets ■ RoW Markets

#### **Overall Market**

 Overall market is growing on the back of increase in Chronic disease prevalence, loss of exclusivity for innovator products negated by pricing pressure in select markets

#### **Developed Market**

- US market is expected to grow ~2% with early signs of decrease in price reductions. Legacy generics expecting price reduction of approx. 7% in FY24 vs 12% in FY23
- Non-US market is expected to grow by ~5 to 7% with margins & regulatory approval timelines varying by market. Key differentiators are cost competitiveness and supply reliability.

#### **India Market**

 India market is expected to grow in excess of 10%. Key differentiators are brand building and In-clinic effectiveness of sales team



### Target to reach EBITDA breakeven within FY25 & then grow profitability in the medium term

#### **Key Products & Facilities**

- Therapeutic areas Cardiovascular System, Central Nervous System, Gastrointestinal and Multi Specialty
- Global presence with serving more than 50 countries including US, Europe, Canada, Japan, Australia and RoW
- Building branded generics business in India in the field of Cardiovascular diabetes & Multi Specialty
- **Derisking product supplies** through building a robust CMO network
- USFDA classifies Roorkee Facility as "Voluntary Action Indicated (VAI)" in April'24.



### **Generics** Growth Strategy for key markets





Grow the profitable Non-US International market

- Focus on scaling 2 key markets to triple digit revenue in INR Cr. (B2B2C)
- Offer a portfolio of products to 50+ markets (B2B)
- Launch new products through In-Licensing





- Build and Scale branded
  generics business in India
- Develop 3 to 4 profitable therapeutic area divisions. Demonstrated successful blueprint by achieving profitability in CVD division in Q4'FY24 and Q1'FY25



#### Achieve profitability in the US Market

- Focus on profitable sustainable portfolio
- Outsource manufacturing to CMO's. Launch new products
- Relaunch products & grow exports through Roorkee Facility

### Generics



### Actions taken to propel US Generics business towards profitability



Closure of In-house Manufacturing Operations

- Closure of manufacturing operations of solid dosage formulation facility at Salisbury, Maryland, US completed in Q1'FY25
- Exploring options to utilize or sell Land, Building and PPE



Outsource manufacturing to CMO's

- Outsourced manufacturing to US FDA approved CMO's. Expect CMOs to start production from H2'FY25
- Expect improvement in gross margins by reducing manufacturing, quality management and overhead costs through outsourcing

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# Grow through launch of new products

- Grow the exports from Roorkee facility to the US market in gradual and meaningful manner.
- Increase in-licensing of new products
- Plans to launch 6 to 8 new products per annum

### Generics







Continuous Quality Improvement

Implemented a large scale **quality improvement** program in Roorkee facility.

Continue the upgrade the quality framework



### De-risk Product supplies by outsourcing

De-risking product supplies through building a **robust CMO network** & outsource the manufacturing

Wide network of CMO's being built across US, Europe, India and other countries



### Continue Cost Optimisation

Implemented cost optimization initiatives of Rs. 150 Cr. in FY24

Continue to implement cost saving opportunities



### Generics

Moving in the right direction; Expect to reach EBITDA breakeven within FY25

| Particulars ( Rs. Cr.) | Q1'FY24 | Q4'FY24 | Q1'FY25 | Ү-о-Ү   |
|------------------------|---------|---------|---------|---------|
| Revenue                | 202     | 201     | 156     | (23%)   |
| EBITDA                 | (21)    | (39)    | (11)    | 50%     |
| EBITDA Margin (%)      | (10%)   | (19%)   | (7%)    | 370 bps |

- Q1'FY25 revenue decreased due to lower sales in US as a result of focus on profitable products
- Q1'FY25 EBITDA improved YoY. Expect to reach EBITDA breakeven within FY25

# 6 Proprietary Novel Drugs Clinical stage precision therapeutics



### Advancing potent molecules to address unmet medical needs in Oncology & Auto immune diseases

| Program  | Mechanism                                        | Indications                                                                                                             | Lead<br>Optimization | Pre - Clinical<br>(IND) | Phase I /II | Milestones                                                                                       |
|----------|--------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|----------------------|-------------------------|-------------|--------------------------------------------------------------------------------------------------|
| JBI-802  | coREST Inhibitor/<br>Epigenetic Modulating Agent | ET(Essential<br>thrombocythemia)/MPN<br>(Myeloproliferative<br>neoplasms), NSCLC (Non-<br>small cell lung cancer)       |                      |                         | -0          | Phase I data suggests<br>therapeutic potential.<br>Early Phase II data in<br>ET / MPN in H2-2024 |
| JBI-778  | PRMT5 Inhibitor<br>Brain Penetrant               | EGFR (Epidermal Growth<br>Factor receptor) refractory<br>NSCLC, ACC (Adenoid cystic<br>carcinoma), High Grade<br>Glioma |                      |                         | 0           | Phase I / II initiation under progress                                                           |
| JBI-2174 | PD-L1 Inhibitor<br>Brain Penetrant               | Brain tumor and metastases                                                                                              |                      | 0                       |             | IND enabling                                                                                     |
| JBI-1044 | PAD4 Inhibitor                                   | Oncology and auto-immune disease                                                                                        |                      | 0                       |             | IND enabling                                                                                     |
| Other    | Various                                          | Various                                                                                                                 | -0                   |                         |             | Undisclosed Research<br>Programs                                                                 |

Two Clinical stage drugs under development with significant value inflection potential on clinical outcome

### Key Indications for JBI - 802



| Disease Indications                                                              | Rationale                                                                                                                                                                                                                                                                                                                                                                                 | JBI - 802 Response                                                                                                                                                                                                                                                                              |
|----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Non-Small cell lung cancer<br>(NSCLC)                                            | <ul> <li>STK11 mutation is observed in10-15% NSCLC (85 % of lung cancer is NSCLC).</li> <li>Patients with STK11 mutations have a lower survival rate and are resistant to immune checkpoint therapy (like Keytruda, Atezolizumab, etc.)</li> </ul>                                                                                                                                        | One patient with NSCLC having STK11 mutations showed<br>significant response on JBI-802, while not responding to<br>previously administered doublet Immune checkpoint therapy.<br>Preclinical animal model study have shown synergistic effects<br>of JBI-802 with immune checkpoint inhibitors |
| Essential Thrombocythemia (ET)                                                   | <ul> <li>ET is a rare blood cancer that causes the bone marrow to produce too many platelets which can lead to an increased risk of developing blood clots resulting in stroke and heart attack</li> <li>Limited options for patients who are refractory to the first line of therapy</li> </ul>                                                                                          | JBI-802 has shown to reduce platelet in human clinical trial<br>which is mediated by LSD1 inhibitor.<br>JBI-802 has better safety profile compared to the competitor<br>(no Dysgeusia and anemia)                                                                                               |
| <b>Post MPN-AML</b><br>(Myeloproliferative neoplasms-<br>Acute myeloid leukemia) | <ul> <li>MPNs are a group of blood cancers that cause increased production of blood cells, mainly affecting red blood cells, platelets, or white blood cells.</li> <li>Progression from MPN to AML (Acute Myeloid Leukemia) is a serious complication, occurring in about 5-10% of MPN patients.</li> <li>No effective therapy available (Survival in adults is only 5 months)</li> </ul> | JBI-802 shows superior efficacy in preclinical in-vivo efficacy studies compared to LSD1 only and HDAC6 only inhibitors                                                                                                                                                                         |

### Phase Two & Investigator led clinical trials to start for JBI-802

JBI-802 alone or in combination with an α-PD-1 monoclonal antibody in CT-26 Syngeneic Model

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JBI-802 in combination with α-PD-1 achieves tumor regression Complete tumor regression achieved in 3/8 animals

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### Product

JBI-802 Small molecule - CoREST Inhibitor

#### Indications

- Essential Thrombocythemia / Myeloproliferative Neoplasms
- Lung cancer (NSCLC), Acute myeloid leukemia (AML)

#### Scientific Rationale

**Development pathway** 

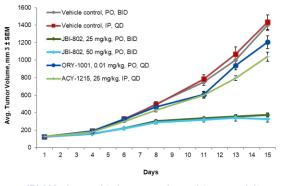
- CoREST inhibition by dual targeting LSD1 and HDAC6
- Superior preclinical efficacy vs other LSD1 or HDAC6 single agent inhibitors
- Dual targeting mechanism Synergistic efficacy
- Anemia not seen in both preclinical and clinal studies, Dysgeusia not seen in clinic v/s other drugs

#### JBI-802, LDS1i or HDAC6i in HEL 92.1.7 Xenografts

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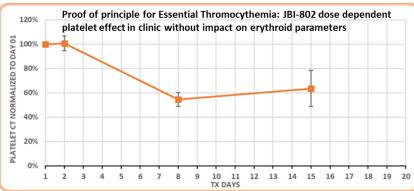
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JBI-802 observed to have superior anti-tumor activity vs inhibition of LSD1 or HDAC6

### Phase 1 clinical data establishes safe dose and showed anti-

- Phase 1 clinical data establishes safe dose and showed anti-tumor response in 2 lung cancer patients at the low dose of 10mg without platelet reductions
- One patient with NSCLC having STK11 mutations showed significant response on JBI-802, while not responding to previously administered doublet IO therapy
- Also dose dependent platelet effect seen in clinic, establishing application in Essential Thrombocythemia (ET) and other Myeloproliferative Neoplasms (MPN)
- Phase II clinical trial to treat ET and MPN patients with thrombocytosis is being initiated in 2024
- *Investigator led clinical trials* in NSCLC and post MPN AML *are being discussed with multiple institutions given the interest of the scientific community.*





### Key Indications for JBI - 778



| Disease Indications                                                       | Rationale                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | JBI – 778 Response                                                                                                                                                                                                                                                                                                                                                                          |
|---------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Non-Small cell lung cancer<br>(NSCLC) with or without brain<br>metastases | <ul> <li>EGFR (epidermal growth factor receptor) mutations are observed in 10 - 50% of non-small cell lung cancer patients</li> <li>EGFR mutations is almost double in patients with NSCLC with CNS metastases compared with patients without CNS metastases</li> <li>Splicing mutation or deletion (U2AF1, RBM10, etc) are common in NSCLC (8-10%)</li> <li>Non-responders to EGFR 3<sup>rd</sup> generation inhibitors have enriched splicing mutations</li> <li>Recently PRMT5 inhibitors have been shown to be effective in NSCLC patients who is resistant to Osimertinib (3<sup>rd</sup> Generation EGFR inhibitors)</li> </ul> | <ul> <li>PRMT5 is involved in splicing Mutations</li> <li>PRMT5 Inhibitors are sensitive to spliceosome mutant cell<br/>line both in <i>vitro and in vivo</i></li> <li>JBI-778 is potent PRMT5 inhibitor having good plasma and<br/>brain exposure and has a potential to treat patients who are<br/>non- responders to the EGFR inhibitors with or without<br/>brain metastases</li> </ul> |
| High Grade Glioma                                                         | <ul> <li>High-grade gliomas account for approximately 15 to 20 % of CNS tumours in children and adolescents</li> <li>Isocitrate dehydrogenase (IDH) mutant gliomas are the most common malignant primary brain tumors diagnosed in patients younger than 50, an important cause of morbidity and mortality</li> <li>PRMT5 inhibitors shown CR in IDH+ patients but faced tox issues impeding further development</li> </ul>                                                                                                                                                                                                           | <ul> <li>JBI-778 has superior brain exposure and substrate competitive binding has established superior safety in preclinical setting</li> <li>JBI-778 has shown excellent results in pre-clinical in vivo model of glioma</li> </ul>                                                                                                                                                       |

Continue to invest



| Particulars ( Rs. Cr.) | Q1'FY24 | Q4'FY24 | Q1'FY25 | Ү-о-Ү |
|------------------------|---------|---------|---------|-------|
| Revenue                | 0       | 0       | 0       | N/A   |
| EBITDA                 | (10)    | (7)     | (6)     | 39%   |

Continue to invest in two clinical stage programs

•

# **Consolidated Reported Financials - Q1'FY25**



Total Income growth (YoY) along with EBITDA margin expansion (YoY)

| Particulars ( Rs. Cr. )          | Q1'FY24 | Q4'FY24 | Q1'FY25 | Y-o-Y   |
|----------------------------------|---------|---------|---------|---------|
| Revenue                          | 1,587   | 1,759   | 1,732   | 9%      |
| Other Income                     | 9       | 14      | 14      |         |
| Total Income                     | 1,596   | 1,773   | 1,746   | 9%      |
| EBITDA                           | 177     | 289     | 266     | 50%     |
| EBITDA Margin (%)                | 11.1%   | 16.3%   | 15.2%   | 410 bps |
| Exceptional expense / ( Income ) | 0       | 169     | (396)   |         |
| РВТ                              | 25      | (54)    | 500     |         |
| Normalised PBT                   | 25      | 115     | 104     |         |
| Normalised PBT Margin            | 1.6%    | 6.5%    | 5.9%    |         |
| Reported PAT                     | 6       | (62)    | 482     |         |
| Normalised PAT <sup>1</sup>      | 6       | 61      | 69      | 1,055%  |

- Q1'FY25 Total Income increased YoY on the back of growth in revenue in Radiopharma, Allergy Immunotherapy and CDMO Sterile Injectables
- Q1'FY25 EBITDA increased YoY, across all business segments
- Q1'FY25 normalised PAT increased YoY due to improved operating performance

1. Normalised PBT / PAT is after adjusting for exceptional items



## **Key Ratios**

Net Debt / Ebitda improved drastically post voluntary prepayment of USD 75 million debt

| Particulars ( Rs. Cr. )           | Mar 31, 2024 | June 30, 2024 |
|-----------------------------------|--------------|---------------|
| Net Debt ( On constant currency ) | 2,509        | 1,869         |
| Net Debt / Equity                 | 0.46         | 0.32          |
| Net Debt / EBITDA (TTM)           | 2.5          | 1.7           |

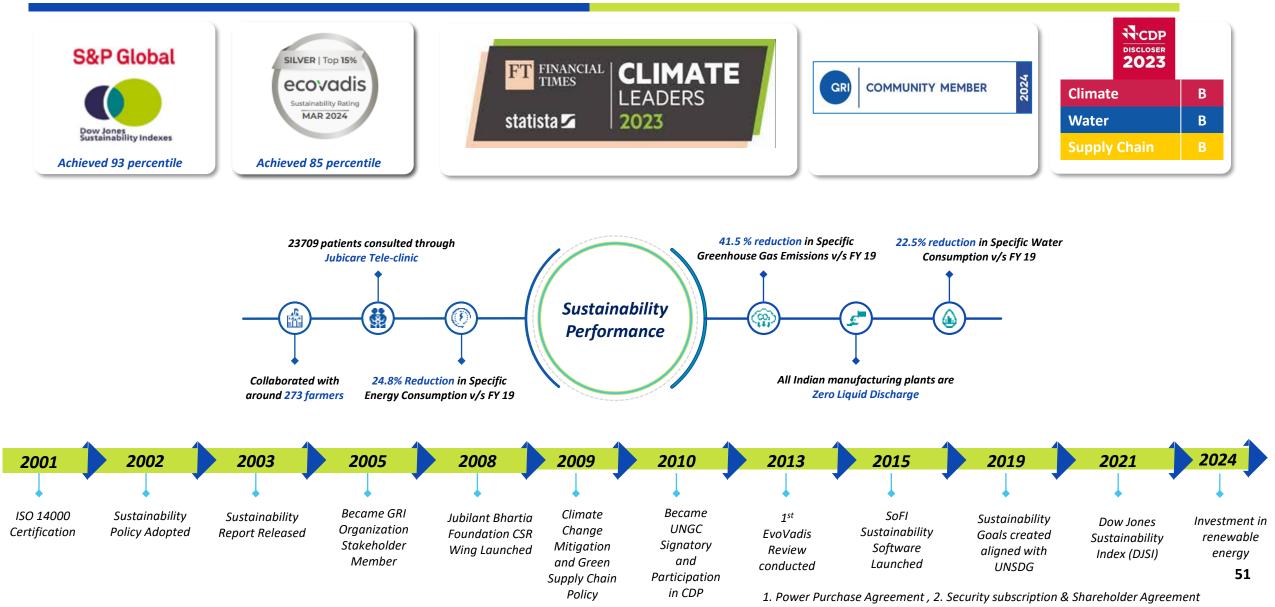
Prepaid debt of USD 75 Mn., equivalent to Rs. 626 Cr. in Q1'FY25

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# Sustainability



### Signed PPA<sup>1</sup> & SHA<sup>2</sup> to purchase renewable energy for JPM entities in Noida and Greater Noida in Q1'FY25



# Summary - Q1'FY25 Radio Pharmaceuticals : New product, Sulfur Colloid and Ruby-Fill® driving growth momentum Radio Pharmacies : Volume led growth & operational efficiencies driving margin expansion Allergy Immunotherapy : Sustained growth momentum & EBITDA margins CDMO Sterile Injectable : Capacity expansion at Spokane on track. Expect Line 3 to start commercial operations by Q1FY26 3 CRDMO DDS: US Biotech industry headwinds continue. Medium term outlook continues to be positive CRDMO API : Pricing pressure continues. Taking initiatives to reduce operating costs & increase capacity utilization

Generics : Target to reach EBITDA breakeven within FY25



Prop Novel Drugs : Preparing for Phase 2 Clinical trails and Investigator trials in JBI-802

# **Financial Results Table**



| Total Income ( Rs. Cr. )                   | Q1'FY24 |        | Q4'FY24 |        | Q1'FY25 |        |
|--------------------------------------------|---------|--------|---------|--------|---------|--------|
| Revenue (A)                                | 1,587   |        | 1,759   |        | 1,732   |        |
| a. Radiopharma                             | 691     |        | 818     |        | 832     |        |
| Radiopharmaceuticals                       | 204     |        | 256     |        | 262     |        |
| Radiopharmacies                            | 487     |        | 561     |        | 570     |        |
| b. Allergy Immunotherapy                   | 151     |        | 188     |        | 168     |        |
| c. CDMO Sterile Injectables                | 254     |        | 259     |        | 324     |        |
| d. Generics                                | 202     |        | 201     |        | 156     |        |
| e. CRDMO                                   | 280     |        | 282     |        | 243     |        |
| Drug Discovery Services                    | 103     |        | 117     |        | 113     |        |
| CDMO – API                                 | 177     |        | 165     |        | 130     |        |
| f. Proprietary Novel Drugs                 | 0       |        | 0       |        | 0       |        |
| Unallocable Corporate Income               | 9       |        | 11      |        | 10      |        |
| Other Income (B)                           | 9       |        | 14      |        | 14      |        |
| Total Income (A+B)                         | 1,596   |        | 1,773   |        | 1,746   |        |
| EBITDA ( Rs. Cr. )                         | Q1'FY24 | Margin | Q4'FY24 | Margin | Q1'FY25 | Margin |
| a. Radiopharma                             | 94      | 14%    | 169     | 21%    | 139     | 17%    |
| Radiopharmaceuticals                       | 93      | 46%    | 126     | 49%    | 126     | 48%    |
| Radiopharmacies                            | 2       | 0%     | 38      | 7%     | 13      | 2%     |
| b. Allergy Immunotherapy                   | 50      | 33%    | 75      | 40%    | 63      | 38%    |
| c. CDMO Sterile Injectables                | 41      | 16%    | 58      | 22%    | 57      | 18%    |
| d. Generics                                | (21)    | (10%)  | (39)    | (19%)  | (11)    | (7%)   |
| e. CRDMO                                   | 35      | 12%    | 52      | 19%    | 38      | 16%    |
| Drug Discovery Services                    | 22      | 21%    | 29      | 24%    | 22      | 19%    |
| CDMO – API                                 | 13      | 7%     | 24      | 14%    | 16      | 12%    |
| f. Proprietary Novel Drugs                 | (10)    |        | (7)     |        | (6)     |        |
| Unallocable Corporate ( Expenses) / Income | (12)    |        | (19)    |        | (15)    |        |
| Total EBITDA                               | 177     | 11.1%  | 289     | 16.3%  | 266     | 15.2%  |

Annexure



# JPM Business Strategy

To strengthen the unique position of each of the business unit to enhance shareholder value



INNOVATE

### Radiopharma



- Continue to grow existing radiopharmaceutical products & launch new products
- Drive future growth and profitability by adding six (6) PET radiopharmacies



2

Allergy Immunotherapy



- Gain share in the
   US Allergenic
   extracts
- Enlarge US Venom
   market
- Penetrate outside US markets



3

CDMO Sterile Injectables



- **Double the capacity** to leverage demand – supply gap in the finish space
- Leverage strong customer relationships to fill up the new capacity





- Uniquely positioned to take advantage of Biosecure act
- Continue to focus on adding large Pharma companies as clients
- Leverage partnership with Biotechnology companies



GENERICS

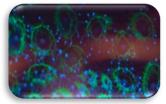


- Non-US(International): Grow the business profitably
- India : Build 3 to 4 therapeutic areas in branded generics
- US : Make business profitable through change of operating model

# DISCOVER

6

### PROPRIETARY NEW DRUGS



 All programs on track. Phase 1 data for JBI-802 Indicates therapeutic potential

.

To explore **institutional funding** post early phase 2 data for JBI-802

### **Executive Leadership Team**





Shyam S Bhartia Chairman



Hari S Bhartia Co-Chairman



Priyavrat Bhartia Managing Director



Arjun S Bhartia Joint Managing Director



Arvind Chokhany Group CFO, Whole-time Director







**Dr. Tushar Gupta** SVP – Corporate Strategy

## **Executive Leadership Team**





Harsher Singh CEO - Jubilant Radiopharma



**Giuliano Perfetti** CEO - CRDMO, Biosys



**Kyle Ferguson** CEO – Allergy Business



**Dr. Jaidev Rajpal** CEO - Jubilant Generics



Chris Preti CEO - CDMO

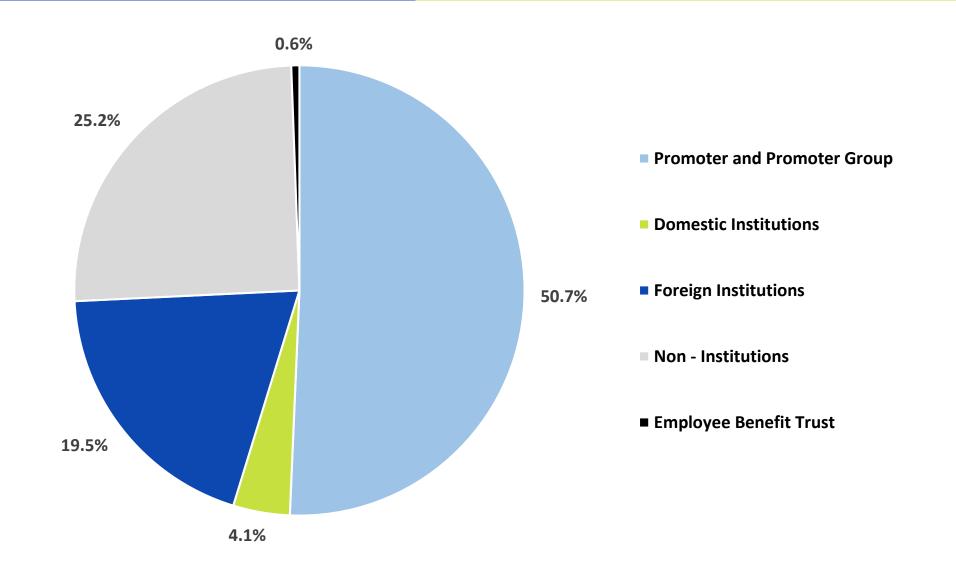


**Dr. Syed Kazmi** CEO - Jubilant Therapeutics

# **Shareholding Pattern**



As on 30<sup>th</sup> June 2024



## GLOSSARY



| Abbreviation | Details                                                                                            | Abbreviation             | Details                                                                                                                                      |
|--------------|----------------------------------------------------------------------------------------------------|--------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|
| CVS          | Cardiovascular System                                                                              | MEA                      | Middle East Africa                                                                                                                           |
| CNS          | Central Nervous System                                                                             | LATAM                    | Latin America                                                                                                                                |
| CDMO         | Contract Development Manufacturing Organization                                                    | LOE                      | Loss of exclusivity                                                                                                                          |
| CRDMO        | Contract Research & Development Manufacturing Organization                                         | FDA (US)                 | U.S. Food and Drug Administration                                                                                                            |
| F18          | Fluorine-18 Radioisotope                                                                           | PMDA (Japan)             | Pharmaceutical and Medical Device Agency                                                                                                     |
| PSMA         | Prostate Specific Membrane Antigen                                                                 | KFDA (Korea)             | Korea Food Development Authority                                                                                                             |
| Lu177        | Lutetium-177 Radioisotope                                                                          | . ,                      | Brazilian Health Regulatory Agency                                                                                                           |
| Ac225        | Actinium-225 Radioisotope                                                                          |                          |                                                                                                                                              |
| MAA          | Macro Aggregated Albumin                                                                           | . ,                      | Therapeutic Goods Administration                                                                                                             |
| DTPA         | Diethylenetriaminepentacetic Acid-Chelating Agent                                                  | API                      | Active Pharmaceutical Ingredient                                                                                                             |
| HICON        | Pharmaceutical Grade Radioactive Iodine                                                            | MENA                     | Middle East North Africa                                                                                                                     |
| I 131        | lodine-131 Radioisotope                                                                            | GMP                      | Good Manufacturing Practices                                                                                                                 |
| MIBG         | Metaiodobenzylguanidine                                                                            | B2B2C                    | Business-to-Business-to-Consumer                                                                                                             |
| USP (USP 825 | U.S. Pharmacopeia (USP) general chapter ,825 (Related to Radiopharmaceuticals: Preparation,        | B2B                      | Business-to-Business                                                                                                                         |
| Guideline)   | Compounding, Dispensing, and Repackaging)                                                          | ET/MPN                   | Essential thrombocythemia / Myeloproliferative neoplasm (rare chronic blood cancer)                                                          |
| Ga 68        | Gallium-68 Radioisotope                                                                            | COREST                   | CRISPR-Cas9 Endomorphic RNA Symptomatic Inhibitor (RNA based therapy targeting genetic                                                       |
| Rb           | Rubidium (chemical element)                                                                        | Inhibitor/               | disease)                                                                                                                                     |
| Sr           | Strontium (chemical element)                                                                       | Epigenetic<br>Modulating | Medications that modify gene expression patterns                                                                                             |
| Cu 64        | Copper-64 Radioisotope                                                                             | Agent                    |                                                                                                                                              |
| NRC          | Nuclear Regulatory Commission (U.S.)                                                               | PRMT5                    | Protein Arginine Methyltransferase 5 inhibtor (Blocks enzyme activity involved in adding methyl                                              |
| GPOs         | Group Purchasing Organisation                                                                      | Inhibitor<br>Brain       | groups to arginine residues, affecting gene expression regulation)                                                                           |
| IDNs         | Integrated Delivery Network                                                                        | Penetrant                | Cerebral blood flow enhancers or cognitive-enhancing drugs (supplements)                                                                     |
| SCIL         | Sublingual immunotherapy (Allergy treatment - Dust mites & Seasonal allergy)                       | PD-L1 Inhibitor          | Programmed death Ligand-1 inhibitor (blocks the PD-L1 pathway, enhancing immune response                                                     |
| SCIT         | Subcutaneous Immunotherapy (Allergy treatment Insect venom, pet dander, Mold, and other allergens) | PAD4 Inhibitor           | against cancer cells)<br>poly(ADP-ribose) polymerase 4 inhibitor (Disrupts DNA repair mechanisms in cancer cells,<br>leading to their death) |
| APAC         | Asia Pacific                                                                                       | LSD1/HDAC6               | Lysine specific demethylase 1/Histone deacetylase 6 inhibtor (Blocks enzymes involved in                                                     |
| MEA          | Middle East Africa                                                                                 | inhibitor                | modifying histones, impacting gene expression regulation in cancer therapy)                                                                  |
| NSCLC        | Non-small cell lung cancer                                                                         | NSCLC                    | Non-small cell lung cancer                                                                                                                   |
| SCLC         | Small cell lung cancer                                                                             | SCLC                     | Small cell lung cancer                                                                                                                       |
|              |                                                                                                    |                          |                                                                                                                                              |

# **For More Information**



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