



# Noxopharm Limited (ASX:NOX)

Corporate Presentation    September 2020

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# Presentation overview...



1. Who We Are

2. The Need we Aim to Fill

3. Veyonda<sup>®</sup> Explained

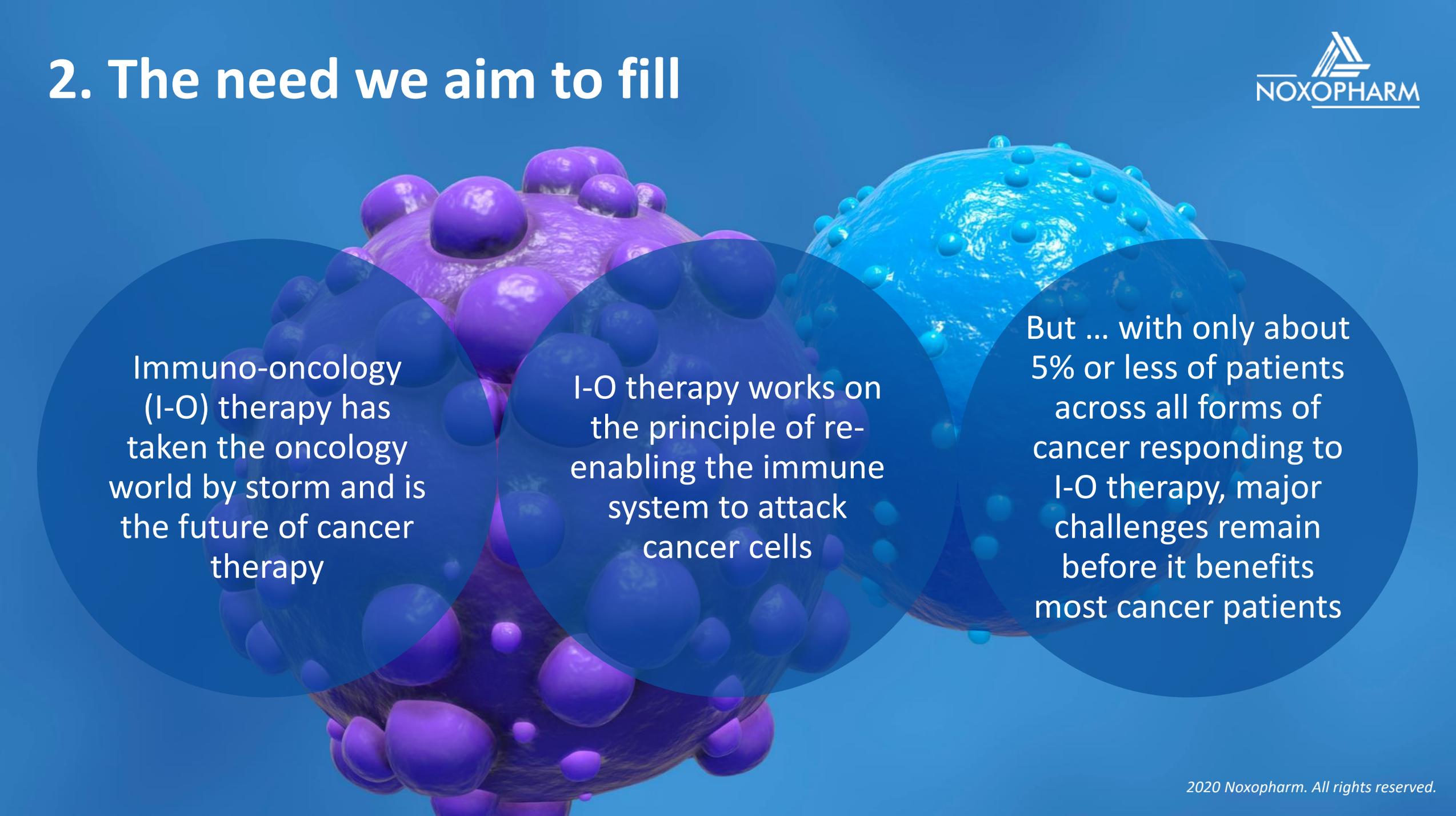
4. Our Business

5. Investment Case

# 1. Who we are

- ❖ **Australian clinical-stage drug development company**
- ❖ ASX: NOX **Healthcare** sector
- ❖ **Veyonda<sup>®</sup>** - a major commercial opportunity with ‘blockbuster’ potential as an **immuno-oncology (I-O) drug**
- ❖ Aiming to make **Veyonda<sup>®</sup>** a **cost-effective I-O therapy** in a market dominated by treatment costs typically between A\$250,000 - \$1M
- ❖ Seeking ‘**blockbuster**’ sales from higher response rates and broader use across multiple cancer types

## 2. The need we aim to fill



Immuno-oncology (I-O) therapy has taken the oncology world by storm and is the future of cancer therapy

I-O therapy works on the principle of re-enabling the immune system to attack cancer cells

But ... with only about 5% or less of patients across all forms of cancer responding to I-O therapy, major challenges remain before it benefits most cancer patients

## 2. The need we aim to fill

### 3 main forms of I-O therapy

#### CAR-T cell therapy

#### Checkpoint inhibitors

#### Radiotherapy

#### Science

T-cells activated in lab against cancer cells. Re-injected IV

Removal of T-cell blocking (checkpoint) proteins

Activate T-cells in irradiated tumours → abscopal effect

#### Response rates

60-90%

10-30%

Extremely rare

#### Limitations

Restricted to leukemias. Ineffective in solid cancers because T-cells cannot access tumours

Restricted to a few cancer types. Requires tumours to have active T-cells

Abscopal response dependent on activated T-cells accessing remote tumours

## 2. The need we aim to fill

CAR-T cell therapy

Checkpoint inhibitors

Radiotherapy

**The common link between all 3 forms of I-O therapy is that they are dependent on activated T-cells gaining access to tumours**

**Problem:** the majority of human tumours avoid immune attack by expelling T-cells and then preventing their re-entry

**Answer:** the widely accepted answer is to remove the block to T-cell re-entry, allowing immune cells to repopulate tumours and result in tumour destruction

**This is called ..... converting tumours from COLD to HOT**

## 2. The need we aim to fill

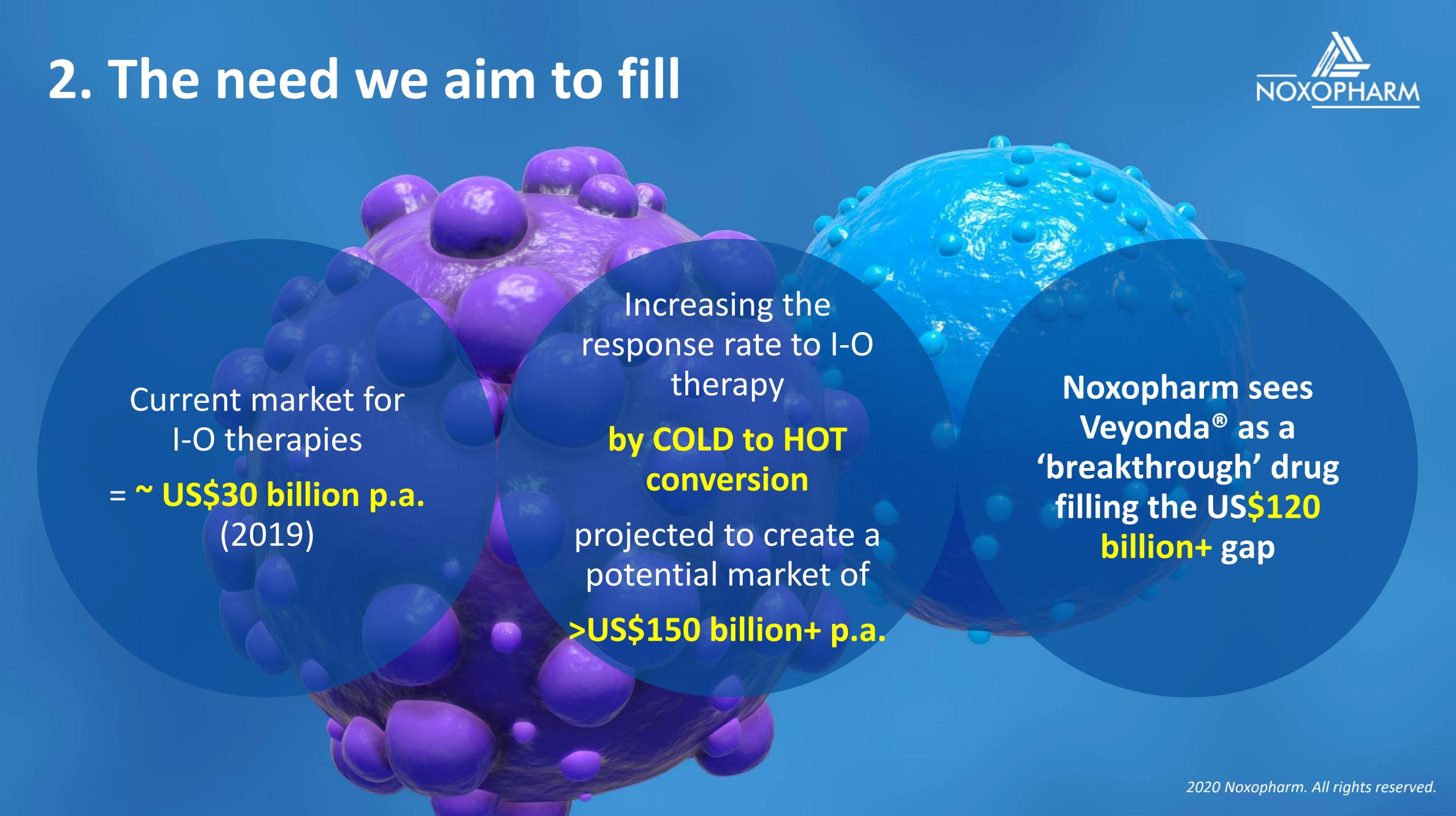
CAR-T cell therapy

Checkpoint inhibitors

Radiotherapy

- Converting tumours from COLD to HOT regarded as an essential prerequisite for lifting the response rate to I-O therapies
- Pre-clinical and clinical evidence points to **Veyonda<sup>®</sup>** being the breakthrough drug, with no known competitive products emerging
- **Veyonda<sup>®</sup>** + radiotherapy emerging as a novel and revolutionary form of I-O therapy with significant cost and safety advantages
- **Veyonda<sup>®</sup>** + immune checkpoint inhibitors also with blockbuster potential

## 2. The need we aim to fill



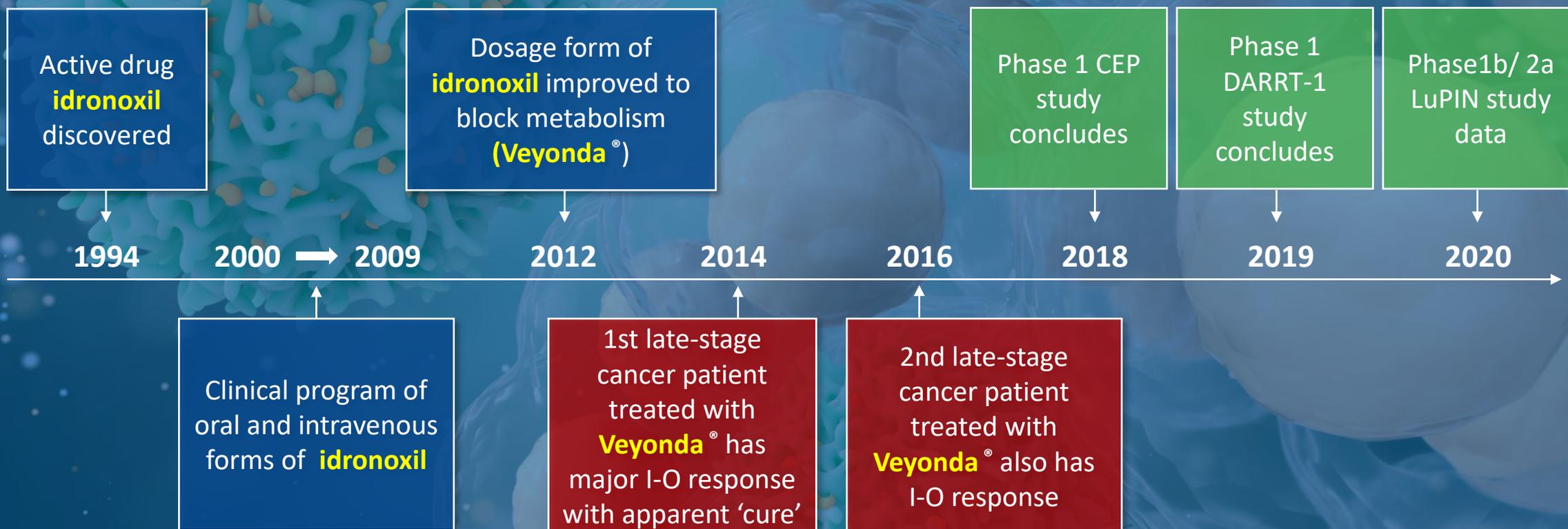
Current market for  
I-O therapies  
= ~ **US\$30 billion p.a.**  
(2019)

Increasing the  
response rate to I-O  
therapy  
**by COLD to HOT  
conversion**  
projected to create a  
potential market of  
**>US\$150 billion+ p.a.**

Noxopharm sees  
**Veyonda®** as a  
'breakthrough' drug  
filling the **US\$120  
billion+** gap

# 3. Veyonda<sup>®</sup> Explained

## The Veyonda<sup>®</sup> Journey so far



### 3. Veyonda<sup>®</sup> Explained

- ❖ Proprietary suppository formulation to deliver prolonged drug half-life
- ❖ Convenience and high treatment compliance
- ❖ High tolerability with very low level of adverse events
- ❖ Family of 10 PCT patent applications in 80 countries covering I-O use including with immune checkpoint inhibitors, external radiotherapy, intravenous radiotherapy, chemotherapy
- ❖ 2020 PCT patent application concerning treatment of septic shock including COVID-19 patients

**A breakthrough technology Converting Cold Cancers**

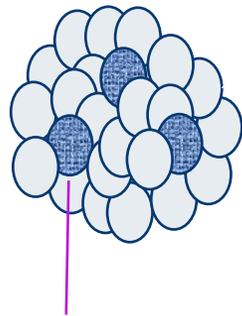
# 3. Veyonda<sup>®</sup> Explained

First-in-class anti-cancer drug with unique 3-step actions

inhibition of protein folding  
(disulfide-thiol exchange)

inhibition of sphingosine kinase activity  
(ceramide/sphingosine-1-phosphate ratio)

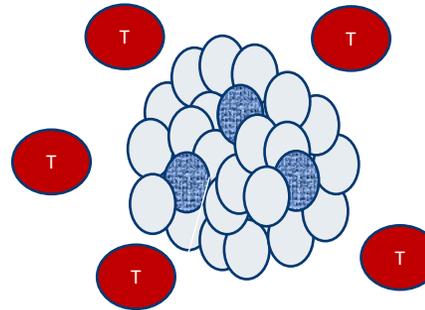
Oncotoxic



Step 1

Kills cancer cells.  
Unique action sparing  
most healthy cells

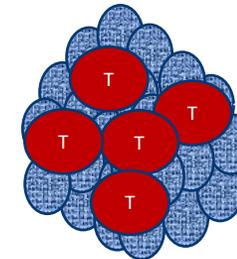
Immuno-oncology effects



Step 2

Activates cancer-fighting  
immune cells (T-cells)

COLD →  
HOT



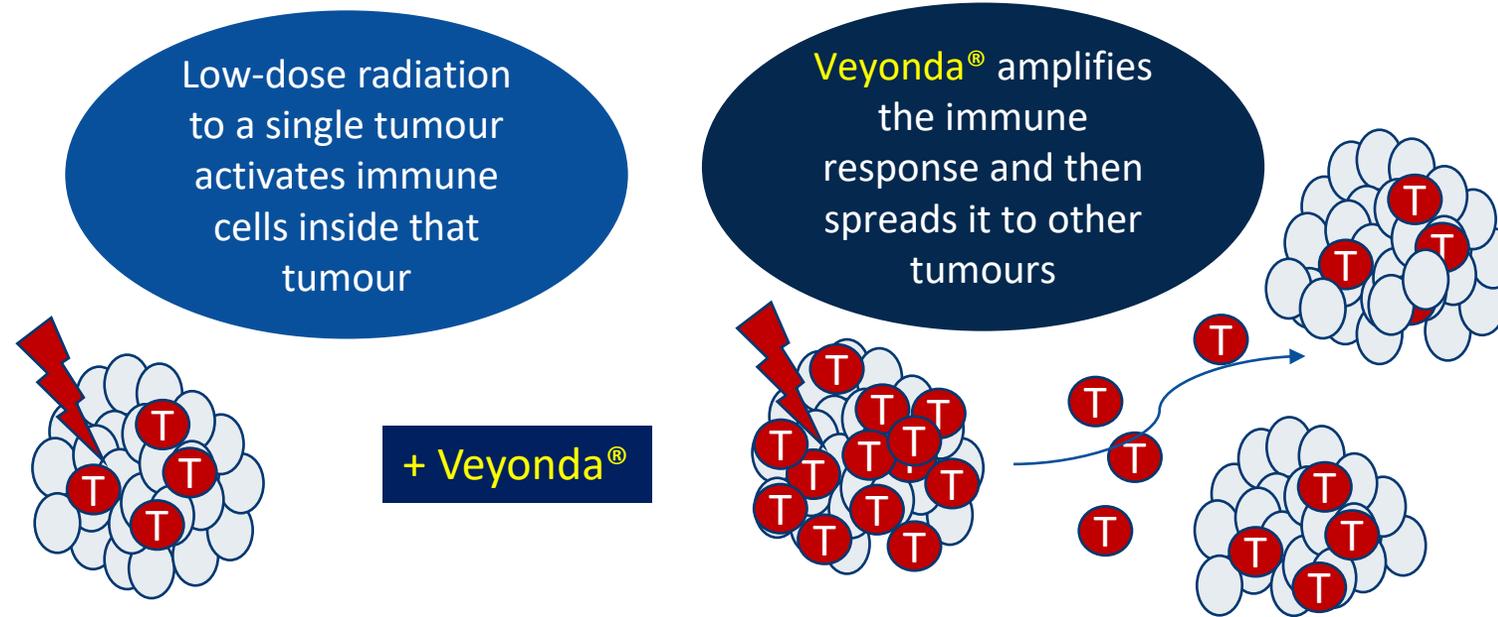
Step 3

Enables cancer-fighting  
immune cells to enter tumour  
and kill remaining cancer cells

# 3. Veyonda<sup>®</sup> Explained

DARRT

Novel and effective I-O therapy



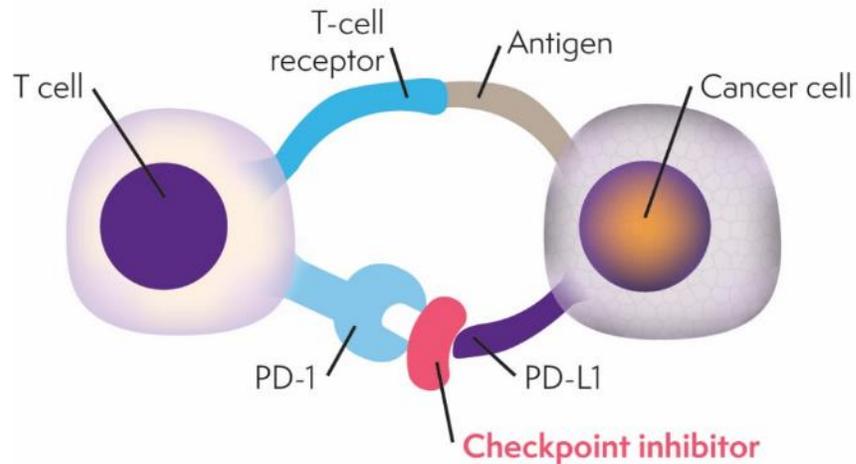
- Theoretically applicable to most forms of solid cancer
- No known competitive technologies

The breakthrough advantage of COLD to HOT

# 3. Veyonda® Explained

IONIC

Partnering immune checkpoint inhibitors



Checkpoint inhibitors ineffective in COLD tumours because of lack of immune cells

By converting tumour to HOT, Veyonda provides the immune cells able to take advantage of removal of immune checkpoints

- Theoretically applicable to many forms of solid cancer
- Few competitive technologies

**The breakthrough advantage of COLD to HOT**

## 4. Our Business - **Veyonda**<sup>®</sup> and Oncology

### Clinical objective

To develop Veyonda<sup>®</sup> + radiotherapy (**DARRT therapy**) as the most cost-effective, well-tolerated and readily accessible I-O therapy for a wide range of cancer types

### Commercial objective

To provide comprehensive pre-clinical and clinical data packages that are compelling for 'blockbuster' trade deals

## 4. Our Business - **Veyonda**<sup>®</sup> and Oncology



Cost is major issue  
with current I-O  
therapies

Typical course of I-O  
treatment = **4x median  
US household annual  
income**

Low response rates  
and associated  
serious side-effects  
also major issues  
with current I-O  
therapies

**Veyonda**<sup>®</sup> offers major competitive advantages

# 4. Our Business - Veyonda<sup>®</sup> and Oncology



## Veyonda<sup>®</sup> development program

Program	Indication	IND-enabling	Phase 1	Phase 2	Phase 3
DARRT	mCRPC	PRIORITY-1			
IONIC	Multiple	PRIORITY-2			
LuPIN	mCRPC				
CEP	Sarcoma				
NOXCOVID	COVID-19				

# 4. Our Business - Veyonda<sup>®</sup> and Oncology

**DARRT and end-stage prostate cancer is our #1 priority program**

**Aimed at the largest sector in the oncology market**

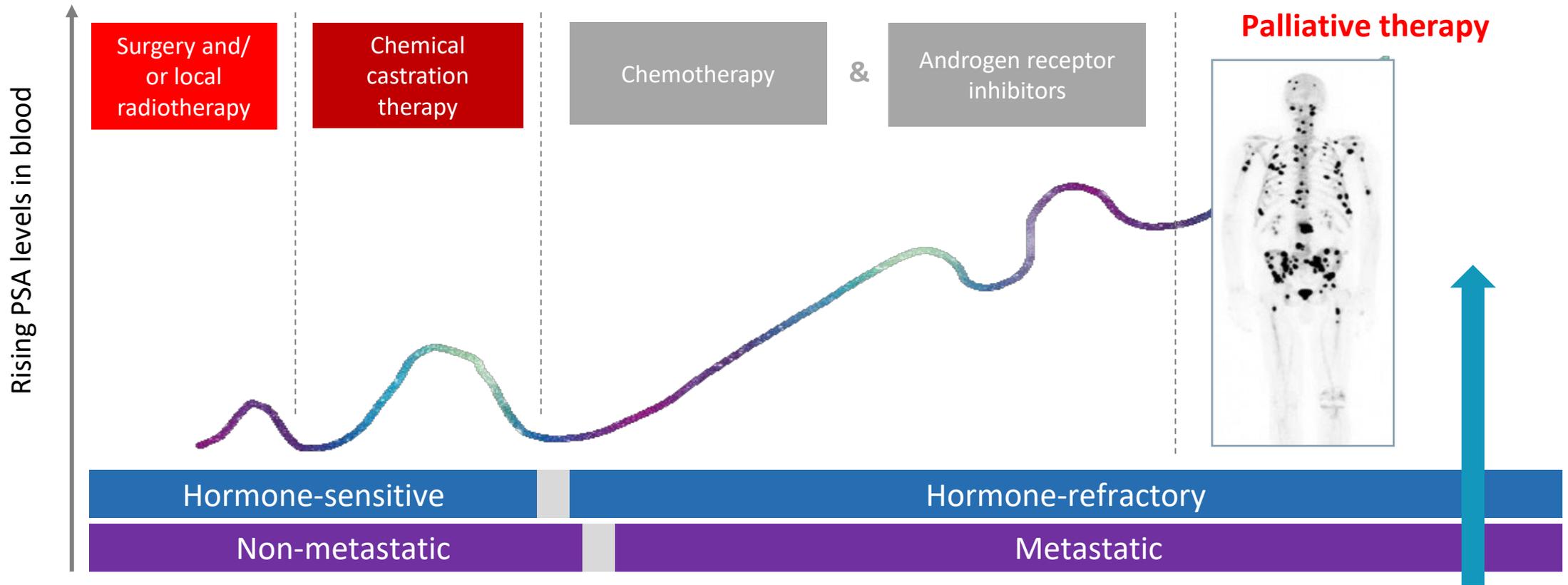
- ❖ End-stage cancer where treatment is limited to palliative care
- ❖ Little competition
- ❖ Multi-billion dollar market opportunity

**Attractive form of anti-cancer therapy**

- ▲ Well-tolerated, short-course of therapy in out-patient clinic
- ▲ Most common form of radiotherapy (= low cost, ready availability)

# 4. Our Business - Veyonda<sup>®</sup> and Oncology

**DARRT: Seeking proof-of-principle in end-stage prostate cancer**



Course of Disease and Treatment Journey for Stage I - IV Prostate Cancer

**Veyonda<sup>®</sup>**  
DARRT

# 4. Our Business - Veyonda® and Oncology

## DARRT: DARRT-1 Phase 1b study

**25 men with end-stage prostate cancer who had stopped responding to treatment, with metastatic and progressive disease, and were considered to have limited life-spans**

- ❖ Clear evidence of an I-O effect
- ❖ In 10 men, tumours had stopped growing or were reduced in size
- ❖ Meaningful pain reduction in many men
- ❖ Abscopal responses confirmed in 4 men\*
- ❖ Treatment well tolerated

\* First known demonstration of abscopal responses in prostate cancer in more than isolated cases

# 4. Our Business - Veyonda<sup>®</sup> and Oncology

## DARRT: DARRT-2 Phase 2 study

- ❖ Parexel – a Top Global Clinical Research Organisation will implement the trial
- ❖ Multi-national
- ❖ Approximately 200 patients
- ❖ 1 cycle radiotherapy; 6 cycles of Veyonda<sup>®</sup> treatment
- ❖ Enrolment start early 2021
- ❖ Ongoing newsflow in connection with key milestones

- 
- US based
  - Extensive oncology experience

# 4. Our Business - Veyonda® and COVID-19

## NOXCOVID: Phase 1 study

**~40 COVID-19 patients hospitalised with moderate lung disease requiring supplementary oxygen. Objective is to prevent progression into a potentially catastrophic **cytokine storm** and **septic shock****

- ❖ Death and long-term disability from COVID-19 due largely to body's hyper-inflammatory response to the virus and the damage it is causing
- ❖ This inappropriate response associated with excessive production of pro-inflammatory molecules (cytokines) in lungs
- ❖ One of the anti-cancer effects of Veyonda® requires blocking production of pro-inflammatory cytokines (STING pathway)
- ❖ The NOXCOVID study is the first test of the hypothesised benefit of blocking STING in COVID-19

# 5. Investment Case

**DARRT**

Estimated **300,000 deaths globally**; 33,000 in the U.S.

Focus on **end-stage prostate cancer**

Aiming to make Veyonda standard of care with radiotherapy in **end-stage prostate cancer**

**IONIC**

Checkpoint inhibitor 2019 sales = **A\$30 billion**

Potential market estimated **>A\$150 billion p.a.**

Aiming to make Veyonda the go-to drug to increase response rates to immune checkpoint inhibitors both in **responsive cancers** (melanoma, lung, bladder etc) **and poorly responsive cancers** (breast, ovarian, prostate, bowel, sarcoma etc)

# 5. Investment Case

Prostate cancer in particular is major area of M&A activity

**XTANDI®**  
mCRPC  
(201^)

**<sup>177</sup>Lu-PSMA-617**  
mCRPC  
(2018)

**<sup>177</sup>Lu-PSMA-617 and others**  
mCRPC  
(2018)

Buyer



Seller



Price Range

US\$14 billion

US\$2.1 billion

US\$3.9 billion

# 5. Investment Case

## Competitive COLD to HOT Technologies

Three main technologies under development:

	<i>Mode</i>	<i>Examples</i>
<b>Oncolytic viruses</b>	Viruses that preferentially infect cancer cells to activate an immune response within the tumour	Oncolytics Biotech Inc Phase 2; ASX-listed Viralytics Ltd acquired for \$500M by Merck in 2018 after Phase 2.
<b>STING agonists</b>	Drugs designed to activate an immune response within tumours	Oncosec Medical Inc Phase 2; Idera Pharmaceuticals Phase 2
<b>Radiotherapy</b>	Using radiation to trigger immune activation.	

### Advantages of Veyonda

Pre-clinical data confirming ability to activate T-cells (CD4+ and CD8+) and to increase T-cell trafficking into tumours

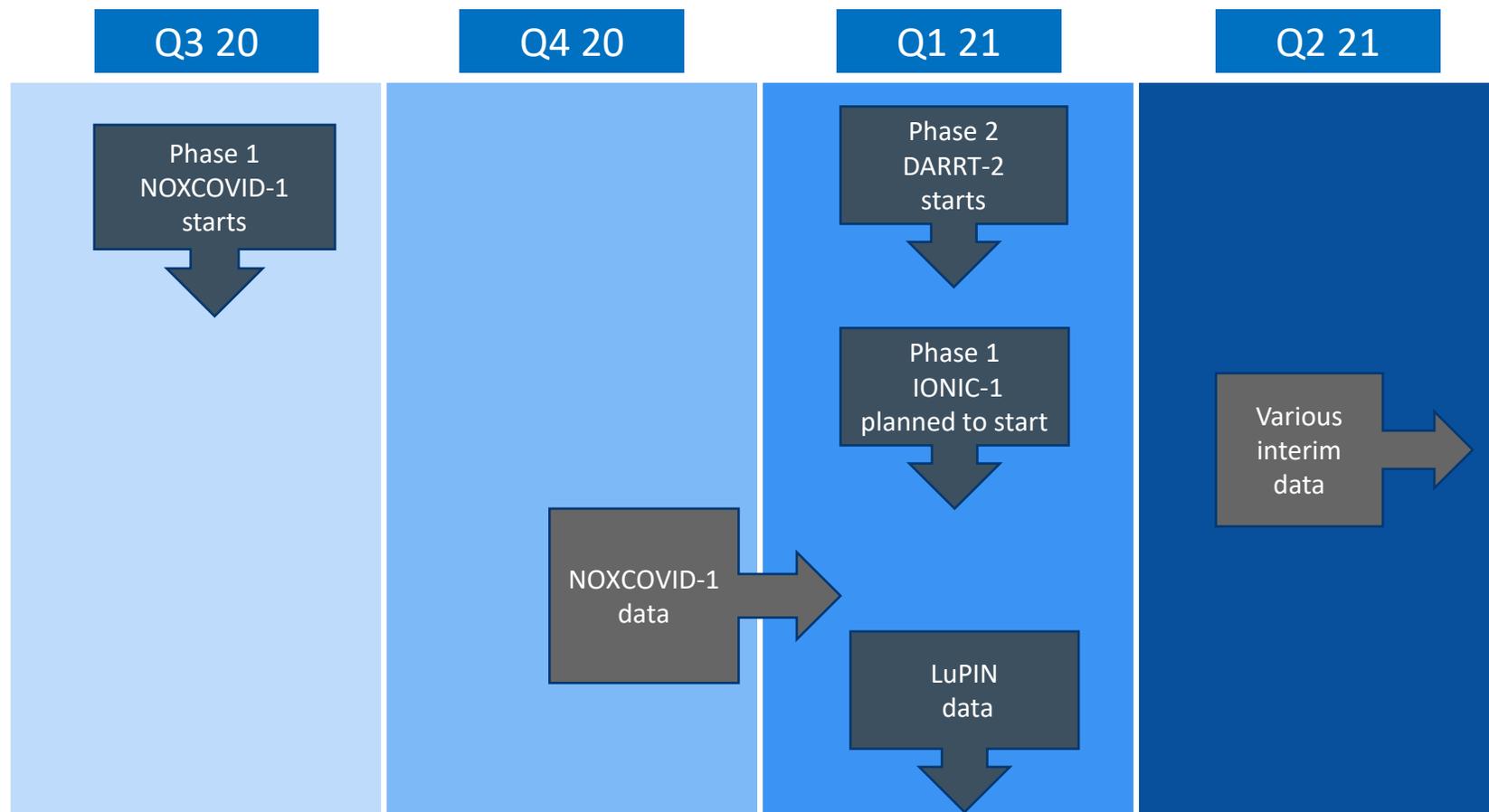
Well-tolerated with no Dose-Limiting Toxicity

Molecular target common to all known human cancer types, suggesting broad use

Self-administered, cost-effective treatment

# 5. Investment Case

Multiple programs = multiple catalysts Q3 20 – Q2 21



# 5. Investment Case

## 3 key investment questions

Is there a need for Veyonda<sup>®</sup>, and if so, how large is the commercial opportunity?

What evidence is there that Veyonda<sup>®</sup> is capable of delivering on its promise?

What will it mean to me as a shareholder if Veyonda<sup>®</sup> succeeds?

Better palliative care for end-stage cancer is one of the single largest unmet pharma needs in the world with an estimated value > **A\$100 billion p.a.**

Pre-clinical and Phase 1 clinical data point to Veyonda being a first-in-class converter of COLD to HOT tumours, a fundamental step in I-O Rx

NOX believes either:  
(i) improving response rates to immune checkpoint inhibitors (IONIC), or (ii) providing better palliative care for end-stage cancer patients (DARRT) is certain to position Veyonda<sup>®</sup> as an important new drug with 'blockbuster' deal potential

# Senior Management Team



**Dr Graham Kelly** CEO  
& Managing Director



**Fred Bart**  
Non-Exec Chairman



**Dr Gisela Mautner**  
Chief Medical Officer



**Jeanette Bell**  
Chief Operating Officer

# Key Metrics



**Number of Shares**                      **213.2 million shares outstanding**

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**Board shareholding**                      **19.8%**

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**Share price**                              **A\$0.39 (18 Sept 2020)**

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**Listing date**                              **9 August 2016**

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**Market cap**                              **A\$83 M (18 Sept 2020)**

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**Cash position**                              **AU\$ 7.1 M (30 June 2020)**

Discover



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# A second generation I-O therapy to transform the management of cancer

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