## Dimerix

FSGS Phase 2a results presentation

29 July 2020



#### Forward looking statements

This presentation includes forward-looking statements that are subject to risks and uncertainties. Such statements involve known and unknown risks and important factors that may cause the actual results, performance or achievements of Dimerix to be materially different from the statements in this presentation.

Actual results could differ materially depending on factors such as the availability of resources, the results of clinical studies, the timing and effects of regulatory actions, the strength of competition, the outcome of legal proceedings and the effectiveness of patent protection.



#### **Key Points**

- Primary and secondary endpoints met in the Phase 2a study of DMX-200 in FSGS patients
- DMX-200 was found to be generally safe and well-tolerated in FSGS patients
- 86% patients demonstrated a reduction of proteinuria with DMX-200 versus placebo
- A 29% reduction in proteinuria was observed across all patients receiving DMX-200 compared to placebo
- 29% of patients achieved a >40% reduction in proteinuria on DMX-200 compared to placebo
- Statistically powered, Phase 2 clinical study in diabetic kidney disease due to read-out in 4 6 weeks
- Multiple patients from both FSGS & diabetic kidney disease study continue on DMX-200 via TGA
   Special Access Scheme



## Corporate Snapshot (ASX:DXB)







Top 10 shareholders									
Position	Holder Name	Holding	% Holding						
1	MR PETER MEURS	25,529,309	13%						
2	BAVARIA BAY PTY LTD	7,316,992	4%						
3	YODAMBAO PTY LTD	6,312,603	3%						
4	PFLEGER FAMILY A/C	2,105,988	1%						
5	TOROHA PTY LTD	2,044,932	1%						
6	TT NICHOLLS PTY LTD	1,816,667	1%						
7	JAMPASO PTY LTD (WILLIAMS)	1,778,742	1%						
8	CS FOURTH NOMINEES PTY LIMITED	1,741,623	1%						
9	MR JAMES CAMILLERI	1,720,804	1%						
10	DR DAVID PACKHAM	1,689,391	1%						





# Development pipeline

4 product candidates in the pipeline, with 3 clinical opportunities									
	Compound	Disease Target	Preclinical	Phase 1	Phase 2	Pivotal Study	Market		
	DMX-200	Acute Respiratory Distress Syndrome (ARDS) in COVID-19 patients				<b>-</b> O			
	DMX-200	Focal Segmental Glomerulosclerosis (FSGS)			(	D			
	DMX-200	Diabetic Kidney Disease	Phase 2	results due 4 - 6 v	veeks O				
	DMX-700	Chronic Obstructive Pulmonary Disease (COPD)							
	DMX-XXX	Undisclosed (multiple)							



#### Board & Management





**Experienced Director of ASX-listed** companies

- Co-founded Dimerix
- Co-founded Yuuwa Capital (\$40M) venture fund)
- ✓BSc (Hons) Biochemistry
- √PhD Medicine
- ✓ MBA Business



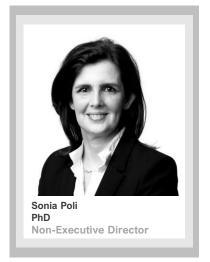


- Experienced in product development, commercial strategy development & execution
- Successfully commercialised multiple pharmaceutical products globally
- √BSc (Hons) Pharmacology
- ✓ PhD Pharmaceutics
- ✓MBA Business
- √M.IP.Law Intellectual Property Law



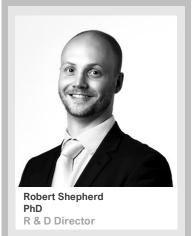
Mayne Pharma, Acrux, Hatchtech, Kinoxis

- Extensive biotech drug development & commercial manufacturing experience
- · Responsible for successful global commercialisation programs & NDA registrations
- ✓BSc (Hons) Chemistry
- ✓MBA Business



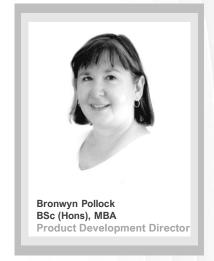
Hoffman la Roche, Addex, AC *Immune* 

- Experienced executive in pharmaceutical operations
- Background in small molecules development and analytical development
- ✓BSc (Hons) Chemistry
- ✓ PhD Industrial Chemistry





- Experienced pharmaceutical executive in project management, clinical development and research programs
- Led multidisciplinary R&D teams for over 14 years
- ✓BSc (Hons) Genetics
- ✓PhD Molecular Immunology



Neuren, Prota, Acrux, Hospira, CSL

- Experienced pharmaceutical executive in Manufacturing (CMC)
- · Successfully developed and submitted multiple dossiers to FDA, EMA, TGA
- Background in project management, technical transfer and product launch
- ✓BSc (Hons) Applied Biology
- ✓ MBA Business



#### DMX-200 overview

DMX-200: a small molecule drug called propagermanium

- Known safety profile
- Administered to patients already on angiotensin receptor blockade
- Never been approved by a regulatory authority for clinical use in the US, Europe or Australia

#### Capsule administration

- 240mg oral delivery daily
  - > 120mg capsule administered twice daily
  - > transitioned from three times daily dose in prior study to a more convenient twice daily dose

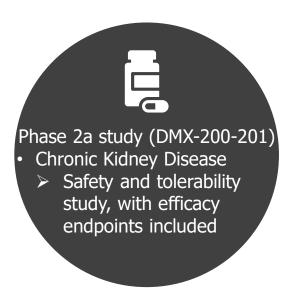


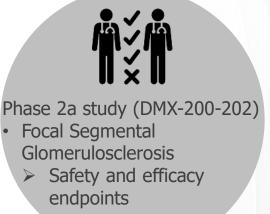




#### DMX-200 clinical experience







- All primary and secondary endpoints met in all studies
- Safe and well tolerated in healthy volunteers and renal patients
- DMX-200 compares favourably to compounds currently in development
- Compelling data leading to DMX-200 Phase 3 clinical study for FSGS patients



#### DMX-200 proposed mechanism of action

DMX-200 addresses three key mechanisms that cause renal damage and sclerotic kidney disease

hyperfiltration of and hypertension within blood vessels of the glomeruli

inflammatory cell infiltration of the kidneys: subsequent fibrosis



Irbesartan blocks cellular receptors responsible for hyperfiltration & glomerular hypertension

DMX-200 inhibits chemokine receptor (CCR2) which initiates attraction of inflammatory cells into the kidneys

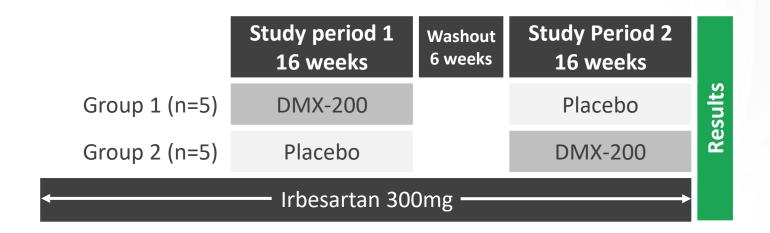
Certain kidney cells express both receptors, thus using only 1 compound does not block activation and results in only a partial response

DMX-200 unique proposition: total benefit is greater than the sum of the two individual effects

#### Current Phase 2a trial in FSGS

**Phase 2a DMX-200-202 (ACTION for FSGS)** is a *Phase 2a, Double-blind, Randomised, Placebo-Controlled, Crossover Study Evaluating the Safety and Efficacy of DMX-200 in Patients with Primary Focal Segmental Glomerulosclerosis who are Receiving Irbesartan* 

- 10 patients enrolled, 7 patients qualified for the evaluable population and final analysis
- Primary endpoint: safety. Secondary endpoint: proteinuria and biomarker analysis.
- Indication: for the treatment of elevated serum creatinine and proteinuria in patients with FSGS





#### FSGS Phase 2a study data: Primary endpoint

#### Safety

 As measured by the number and severity of adverse events and clinically significant changes in the patient safety profile with the use of DMX-200 compared to placebo in participants with FSGS who are receiving irbesartan



DMX-200 was generally safe and well-tolerated



No variation in the incidence or severity of adverse events between treatment with DMX-200 or placebo



No serious adverse events related to the drug reported



No patient withdrawals from the study





## FSGS Phase 2a study data – Efficacy endpoint

#### Top Line Data

Mean reduction in proteinuria (%PCR grouped analysis):

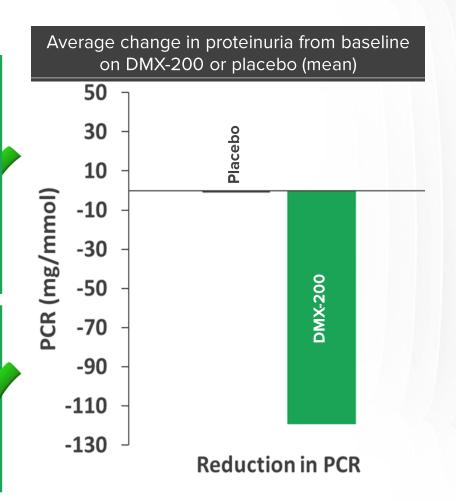
• 29% from baseline on DMX-200 compared to placebo

Average reduction in proteinuria:

- 119 mg/mmol (1052mg/g) on DMX-200; versus
- 1 mg/mmol (8.84mg/g) on placebo

Proportion of patients demonstrating a reduction versus placebo:

- 6/7 (86%) of patients demonstrated reduced proteinuria on DMX-200 versus placebo
- 2/7 (29%) of patients demonstrated >40% reduction in proteinuria





#### Synergistic effect

#### DMX-200 unique proposition: total benefit is greater than the sum of the two parts

- Administration of DMX-200 to patients already taking a stable dose of an angiotensin receptor blocker
  - = both receptors on the same cell are targeted simultaneously
  - = both receptors are inhibited
  - = supresses the inflammatory signal
- Unlike other investigational drugs currently in development for FSGS:
  - > patients stay on the standard of care angiotensin receptor blocker (ARB)
  - > any proteinuria effect from irbesartan would have occurred prior to starting the study
  - > reduction in proteinuria seen in the trial can be attributed to DMX-200 only

#### Effect seen in the study is in addition to the effect of the ARB



# Chemistry, Manufacturing and Control (CMC)



US based contract manufacturer appointed for commercial supply of API



FDA approved manufacturing facility



US based manufacturer engaged for finished product manufacture



Analytical methods validated



Commercial scale GMP batch manufacture completed



Exclusive development and methodology to manufacture API owned by Dimerix

CMC NDA package suitability confirmed with FDA



#### CMC next steps



Complete finished product scale up batch manufacture



Preparation for IND submission

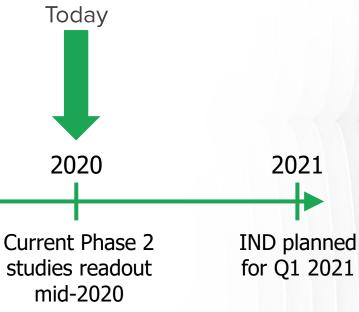


GMP batch stability program ongoing





## Regulatory overview



Pre-IND for Chronic Kidney Disease

2016

Chronic Kidney Disease Phase 2a study completed

2017

Current Phase 2 studies initiated for FSGS & diabetic kidney disease

2018

Pre-IND for FSGS

2019

- November

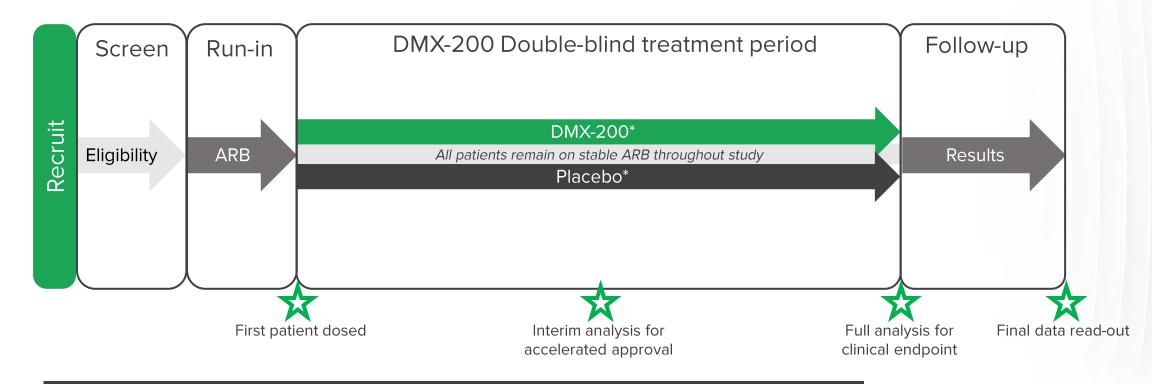
studies readout

Confirmation of endpoints for accelerated marketing approval;

- Single Phase 3 study appropriate for marketing approval;
- Proteinuria as an appropriate endpoint;
- Non-clinical package appropriate for NDA and registration; and
- Proposed specifications for API manufactured by Dimerix are appropriate for registration



## Phase 3 FSGS study design overview<sup>^</sup>



Assessing ways to improve recruitment efficiency and increase study power

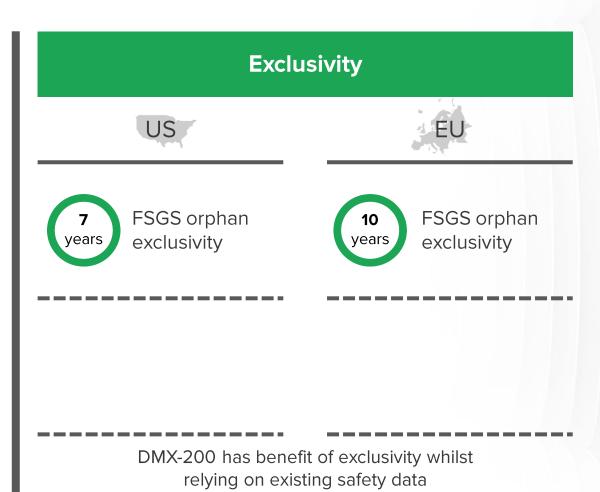


<sup>^</sup>Subject to approval of the study design/procedures by FDA and institutional review board/independent ethics committee will be required prior to initiation

<sup>\*</sup>Number is subject to biostatistician confirmation and powering based on grouped analysis in current study

## DMX-200 Intellectual property and exclusivity

#### **Intellectual Property** US Method of use: Method of use: any CCR2 antagonist 2032 DMX-200 with with any ARB for any irbesartan kidney disease **Granted patents Granted patents** US 9,314,450 EP 2663304 US 10,058,555 US 10,525,038 Patent applications with Patent applications with alternative claims filed alternative claims filed





#### FSGS market: serious and rare kidney disease



Orphan indication currently with **no FDA-approved** therapies<sup>‡</sup>



US incidence<sup>†</sup>

80,583



Market growth will accelerate at a CAGR (2017-2025)#



Average orphan drug pricing >US\$7,000 per month\*



Across all nephrotic syndromes, FSGS accounts for \*\*

- 40% cases in adult
- 20% cases in **children**



30%-40% of FSGS transplant patients:

FSGS disease recurs^



Approximately 5 years from diagnosis to end-stage renal disease<sup>‡</sup>



More than 5,400 **new cases** diagnosed each year in US<sup>^</sup>

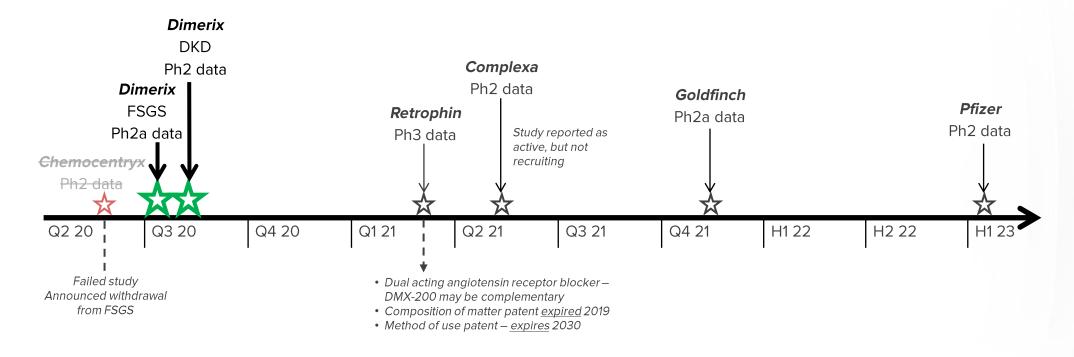
#### DMX-200 has US and EU Orphan Drug Designation for FSGS



- \* Sangameswaran K, Baradhi K; (2019) Focal Segmental Glomerulosclerosis [https://www.ncbi.nlm.nih.gov/books/NBK532272/] [Accessed 02Mar20]
- ^ Nephcure Kidney International (2020); Focal Segmental Glomerulosclerosis [https://nephcure.org/livingwithkidneydisease/understanding-glomerular-disease/understanding-fsgs/] [Accessed 02Mar20]
- \* Rosenberg A, Kopp J (2017); Focal Segmental Glomerulosclerosis, Clinical Journal of American Society of Nephrology [https://cjasn.asnjournals.org/content/12/3/502} [Accessed 02Mar20]
- DelveInsight Market Research Report (2020); Focal Segmental Glomerulosclerosis (FSGS)- Market Insight, Epidemiology and Market Forecast -2030
- # Transparency Market Research (2019); Focal Segmental Glomerulosclerosis (FSGS) Market [https://www.transparencymarketresearch.com/focal-segmental-glomerulosclerosis-market.html] [Accessed 02Mar20]

## Competitive positioning

Current FSGS studies underway:



Dimerix well positioned to help patients seeking treatment who often have very few medical options



#### Dimerix well-positioned to deliver



Existing long-term safety data available & approved for compassionate use



Demonstrated efficacy in FSGS and diabetic kidney disease



High unmet need, with no marketed competition



Scientific rationale compares favourably to compounds currently in development



Pharmaceutical grade (GMP) drug process developed and validated



Full capability in place to scale up for commercial supply

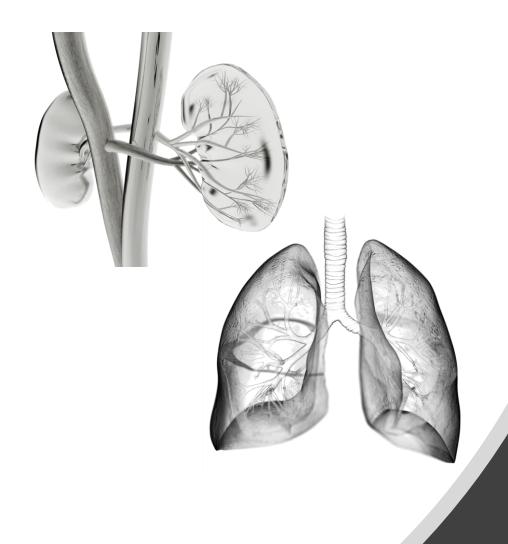


Planning continues for proposed global Phase 3 pivotal program in FSGS



Patents granted and pending, 100% owned by company

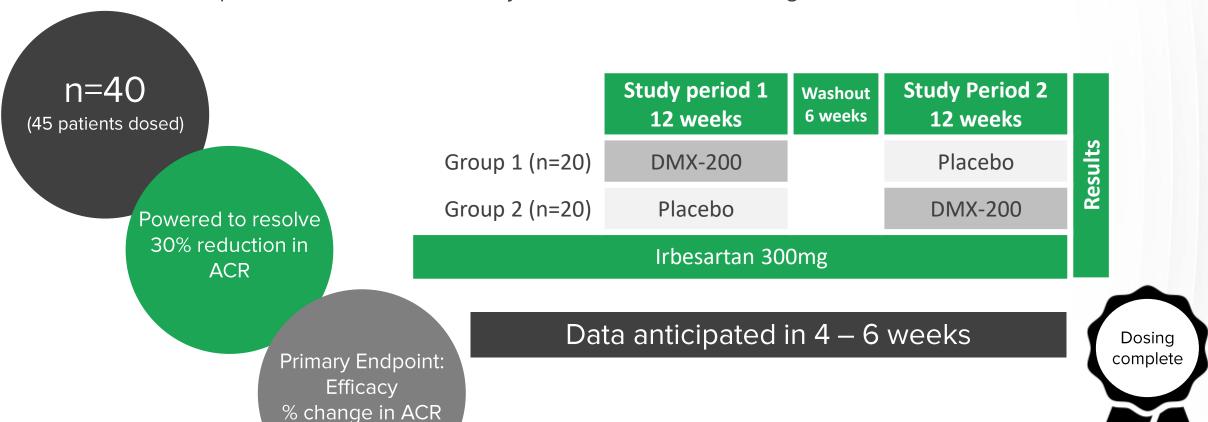




# Additional Assets

## Current Phase 2 trial in diabetic kidney disease

• Phase 2, double-blind, randomised, placebo-controlled, crossover study evaluating the safety and efficacy of DMX-200 in patients with diabetic kidney disease who are receiving a stable dose of Irbesartan



# Acute Respiratory Distress Syndrome (ARDS)

## in COVID-19 patients





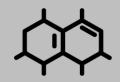
REMAP-CAP: global WHO endorsed clinical study; >200 clinical sites in 16 countries\*



Study targets patients with Acute Respiratory Distress Syndrome (ARDS) as a result of a pandemic\*



REMAP-CAP/COVID-19 study protocol to include DMX-200



New renin-angiotensin system study domain approved by International Steering Committee



REMAP-CAP has been designated by the WHO as a Pandemic Special Study\*

translation of clinical trial results occur directly with policymakers & public health officials for rapid implementation globally



REMAP-CAP is supported and funded by a consortium of government and non-government organisations\*



Results generated from REMAP-CAP during a declared pandemic can provide a collaborative pathway to global clinical practice\*



DMX-200 selected based on overwhelming scientific rationale & unique potential to treat COVID-19 related issues

(supported by multiple peer-reviewed publications over the past month^)



#### Pre-Clinical: DMX-700 in COPD

- DMX-700 for the treatment of COPD by blocking heteromer signalling in receptors active in COPD
- Initial studies shown interaction of key receptors in pathogenic biased signalling
- In vitro program to identify existing clinical-stage compounds capable of altering signalling pathways
- Provisional patent application filed; additional applications anticipated



Actual molecules & receptor targets remain confidential pending stage 1 data & additional patent submissions

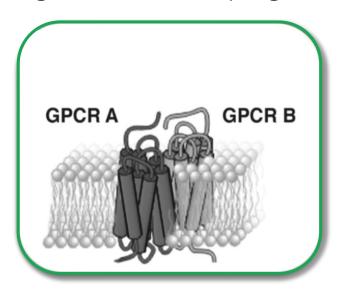






## Dimerix technology platform – Receptor-HIT

- Patented multiple configurations of a Bioluminescence Resonance Energy Transfer (BRET) assay that enables understanding of real-time receptor heteromer interactions
- Particularly suited to GPCRs
- Can identify new uses for existing drugs, deorphanize receptors, and drive the discovery of new drugs and research programs



**Receptor Heteromer**: Macromolecular complex composed of at least two (functional) receptor units with biochemical properties that are demonstrably different from those of its individual components.\*

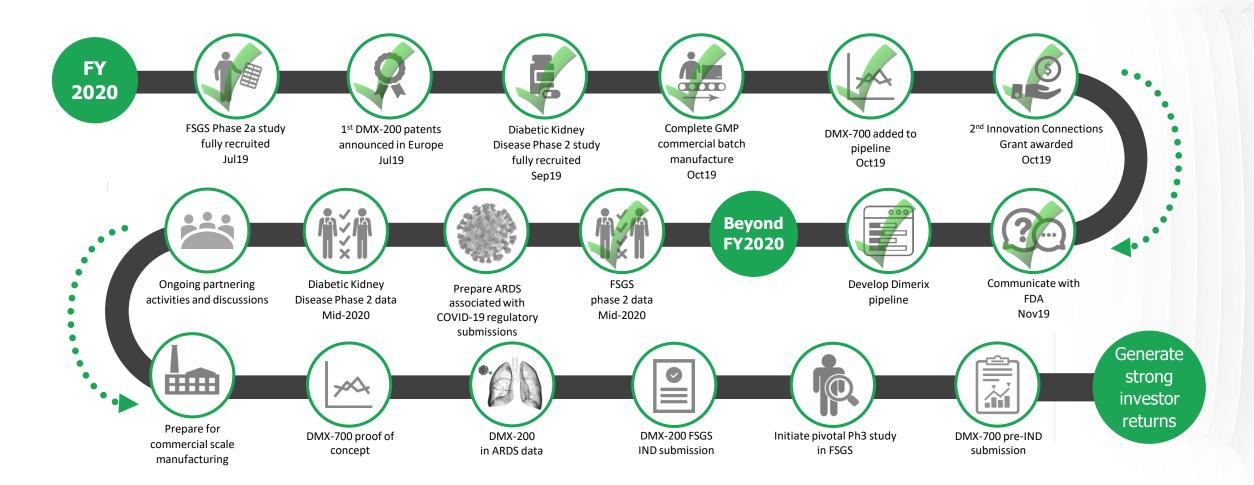
Assay has granted patents in key territories, protection until 2029





Summary

#### Financial Year 2019/2020/2021 value driving events





## DMX-200 summary



Commercially attractive and growing markets



Unmet need, with little or no current competition



DMX-200 compares favourably to compounds currently in development



Strong efficacy data in 2 different kidney studies



Product supply secured with FDA approved manufacturing facility



Orphan status for FSGS in both US & EU



New chemical entity with granted patents and additional patents pending



Existing long-term safety data available: lower development risk



Approved by TGA for compassionate use in Australia



Phase 2 clinical study results anticipated
4-6 weeks



FDA confirmed non-clinical & CMC NDA package suitability + Ph3 study design principles



Additional assets to diversify risk and potential sources of revenue



# DIMERIX

**End of Presentation** 

