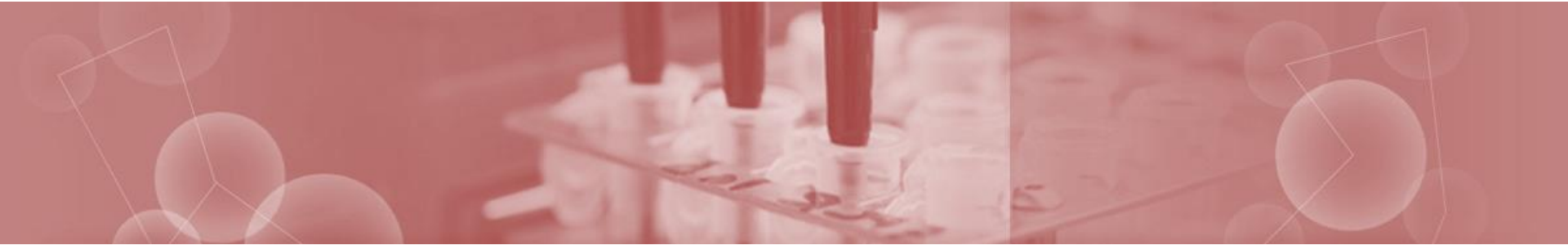




# Acquisition of *Dimerix Bioscience* – A Clinical Stage Biotechnology Company



Dr. Anton Uvarov  
Executive Director

Investor Presentation  
13 May 2015



**Dimerix**  
Bioscience

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# Company Overview After Acquisition and Settlement

## Corporate Overview

|                     |         |
|---------------------|---------|
| ASX Code:           | SBN     |
| Share Price:        | \$0.01  |
| Market cap:         | \$13.2m |
| Cash:               | \$3.5m  |
| Shares on issue:    | 1323.6m |
| Performance Shares: | 225.0m  |
| Options:            | 111.7m  |

## Board of Directors

|   |   |
|---|---|
| <p><b>Dr James Williams</b><br/>Executive Chairman<br/><i>BSc(Hons), PhD, MBA</i></p> | <p>Co-founder of iCeutica (acquired by Iroko Pharm in 2011, 2 FDA approved drugs), co-founder of Yuuwa Capital (life sciences VC), former Managing Director of Resonance Health (ASX.RHT)</p> |
| <p><b>Dr Anton Uvarov</b><br/>Executive Director<br/><i>MSc, PhD, MBA</i></p>         | <p>Currently Non-Executive Director of Actinogen Medical (ASX.ACW), former Healthcare Equities Analyst at Citigroup (US)</p>  |
| <p><b>Mr Howard Digby</b><br/>Non-Executive Director<br/><i>BE(Hons)</i></p>          | <p>Former senior roles at IBM, Adobe, Gartner and the Economist Group, former Executive Director of Cynata Therapeutics (ASX.CYP)</p>   |
| <p><b>Dr Sonia Poli</b><br/>Non-Executive Director<br/><i>MSc, PhD</i></p>            | <p>Currently Chief Scientific Officer at Addex Therapeutics (SWX.ADXN), formerly held senior leadership position with Hoffman la Roche</p>  |

## Acquisition Breakdown

|                    | Sun Biomedical                                 | Dimerix |
|--------------------|--|---------|
| Shares             | 413.6m   | 750m    |
| Performance Shares |  | 225m    |
| Options            | 80.9m  | 30.9m   |
| Cash               | approx. \$3.5m (before transaction expense)    |         |
|                    | \$1.6m placement @ \$0.01 to issue 160m shares |         |

## Clinical Pipeline and Technology

|  |   |
|--|---|
| <b>DMX200</b>                              | Lead candidate in Phase 2 for Chronic Kidney Disease and others |
| <b>GPCR-HIT assay</b>                      | Receptor Heteromer Investigation Technology for Drug Discovery  |
| <b>Oraline® Family</b>                     | Saliva based drug tests   |
| <b>Asthma Diagnostics and Therapeutics</b> | Proof-of-concept stage, in partnership with Telethon Kids       |

# Dimerix Transaction Overview

## Lead program: **DMX200 – Phase 2 asset for treatment of Chronic Kidney Disease**








- ↪ Human PoC study commenced Austin Hospital
- ↪ Development program focused on fast-track to IND and orphan designation
- ↪ Combination of 2 drugs with extensive human data
- ↪ Patent applications in National phase (accepted in Australia)

## Discovery platform: **GPCR-HIT: enabling next generation GPCR drug discovery**

- ↪ Pipeline of four additional pre-clinical programs
  - ⊙ Diabetic Retinopathy and Non Alcoholic Steahepatitis (NASH) ready for POC
- ↪ Current MSAs with two top 10 pharma companies
- ↪ Granted IP giving broad protection

Highly credentialed Board and Management team

# Dimerix Clinical and Pre-Clinical Programs

| Drug             | Indication   | Pre-clinical   | Ph I  | Phase II  | Phase III | Status  |
|------------------|--|--|---|---|-----------|---|
| DMX-200          | Chronic Kidney Disease                                 |  |  |  |           | Phase II recruiting                                 |
| DMX-300          | Non Alcoholic Fatty Liver Disease (NASH)               |   |   |   |           | Ready for animal studies                            |
| DMX-400          | Diabetic Retinopathy                                   |   |   |   |           | Ready for animal studies                            |
| DMX-500          | Cancer Fatigue   |   |   |   |           | complete in-vitro work on target                    |
| DMX-600          | Multiple Sclerosis                                     |   |   |   |           | complete in-vitro work on target                    |
| Assay Technology | Contract reseearch<br>Distribution and/or co marketing |  |   |   |           | Active with 2 top 10 Pharma<br>Discussions underway |

- ⊙ DMX-200 Phase 2 clinical program currently recruiting
- ⊙ Multiple pipeline opportunities with all programs going straight to Phase 2
- ⊙ 2 top 10 pharma engagement for GPCR platform

# DMX-200: Market Need

The total chronic kidney disease (CKD) market achieved total sales of \$11 billion in 2012  
(Source: Decision Resources, 2014)

- ⊙ Current market includes erythropoietin-stimulating agents (ESAs), phosphate binders, calcium mimetics, active vitamin D analogues, antihypertensive agents, IV irons and emerging CKD therapies for the CKD non-dialysis and dialysis patient populations
- ⊙ 26 million US CKD patients: 8.5m patients at or beyond Stage 3
- ⊙ CKD is still growing due to cardiovascular disease, obesity & diabetes
- ⊙ US Sales from Stage 5 CKD and exceed \$2B
- ⊙ **CKD Stage 3 and 4 are a largely untapped market**

| Stage | Kidney Function   | Prevalence, US |
|-------|---|----------------|
| 1     | Normal kidney function but altered urine findings, structural abnormalities or genetic traits |                |
| 2     | Mildly reduced kidney function, and other findings point to kidney disease                    |                |
| 3     | Moderate Impairment   | 7.6m           |
| 4     | Severe Impairment   | 0.4 m          |
| 5     | Failure   | 0.5m           |
|       | <b>US Total</b>   | <b>8.5m</b>    |

Source: National Kidney Foundation 2002 (USA)  
US Renal Data Service 2009 Annual Data Report

# DMX-200: CKD Market Segmentation

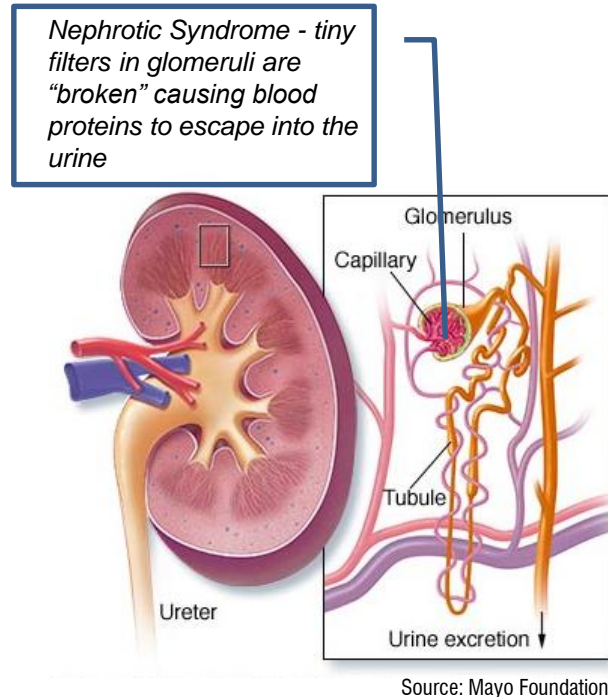
Causes of CKD: segmented market = different regulatory and reimbursement pathways

| Disease                     | Example  | Prevalence |
|-----------------------------|--|------------|
| Diabetic Kidney Disease     | Diabetes Type 1, Diabetes Type 2   | 34%        |
| Non-diabetic Kidney Disease | Glomerular Diseases<br>- Primary (unknown), AutoImmune, Infection, Drugs   | 24%        |
|                             | Vascular Diseases<br>- Hypertension, Large vessel Disease, Microangiopathy | 14%        |
|                             | Tubulointerstitial Diseases<br>- Infection, Obstruction, Drugs             | 3%         |
|                             | Cystic Diseases<br>- Polycystic kidney disease                             | Familial   |
| Transplant Kidney Disease   | Chronic Rejection Drug Toxicity Other                                      |            |
| Unallocated                 |  | 25%        |

Several of these are classified as “orphan indications” and these will be the initial focus for DMX200

# DMX-200: Initial Focus on Nephrotic Syndrome, an Orphan Disease

- ⊙ **Nephrotic Syndrome** - non-specific disorder where kidneys are damaged; characterised by proteinuria; may also have hypoalbuminemia, hyperlipidemia and edema.
- ⊙ Gold standard diagnosis of nephrotic syndrome is 24 hour urine protein measurement (proteinuria)
- ⊙ Regulatory pathway: small trials of <1 year duration to show complete or partial remission of proteinuria
- ⊙ Estimated annual patients in US with Nephrotic Syndrome is 20,000 - 25,000

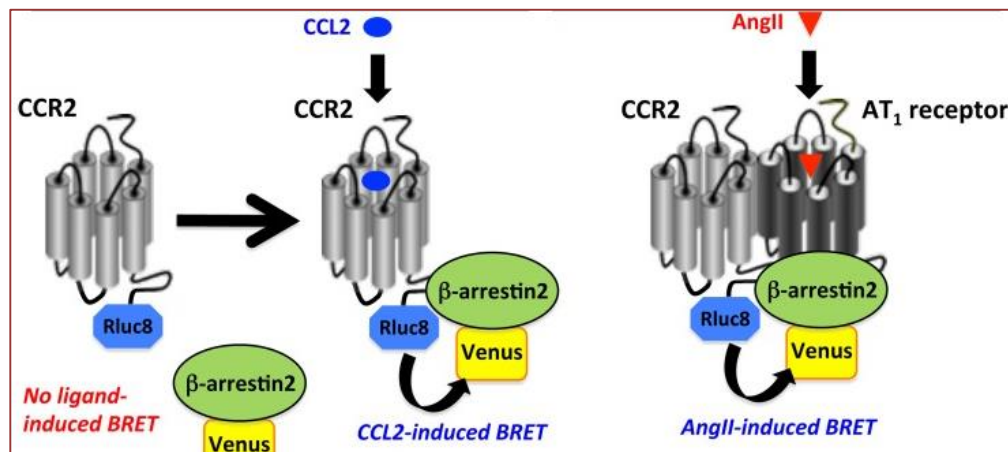


**Nephrotic Syndrome is an “orphan disease” with single clinical endpoint: reduce proteinuria**

**Indicative of potential in larger CKD groups – e.g. Diabetic Nephropathy**



# What is DMX-200?



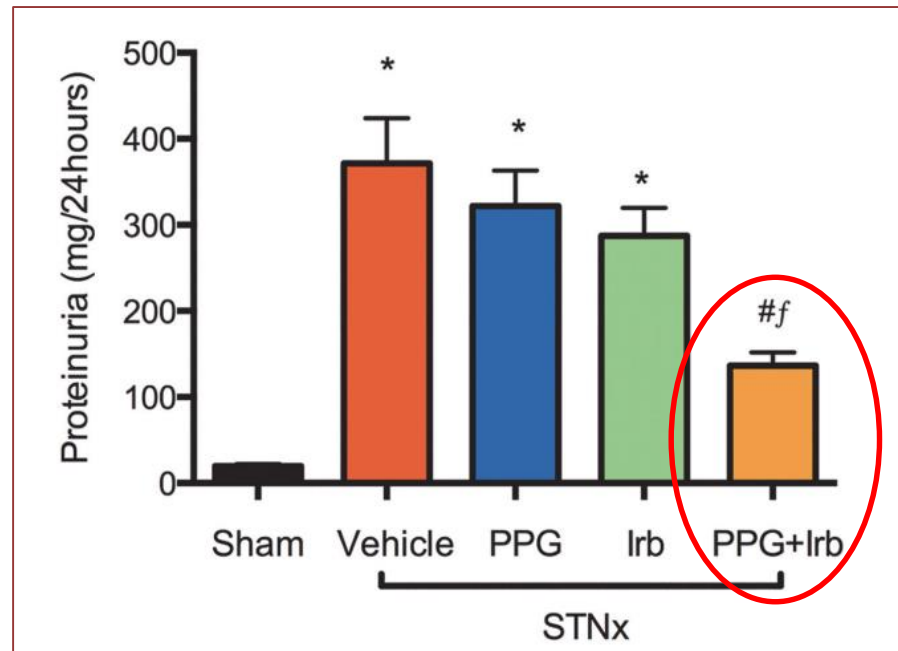
Source: Dimerix, PLoS One 2015

- ⊙ DMX-200 is a combination of propagermanium (PPG, Chemokine Receptor 2 (CCR2) antagonist) and Irbesartan (Irb, angiotensin II receptor type 1 (AT1) antagonist). Based on strong scientific rational recently published by Dimerix in top peer-reviewed journal
- ⊙ Both PPG and Irb are safe to use in humans
- ⊙ Strong IP position surrounding the drug combination
- ⊙ Potential for orphan drug designation and breakthrough therapy

## DMX-200: Strong Pre-Clinical Evidence

Proteinuria in STNx rats (progressive kidney disease animal model)

STNx rats developed proteinuria of a level more than an order of magnitude higher than in controls. In contrast to propagermanium (PPG) or Irbesartan (Irb) monotherapies, treatment with DMX-200 (PPG+Irb) was associated with a significant and more profound reduction in proteinuria.

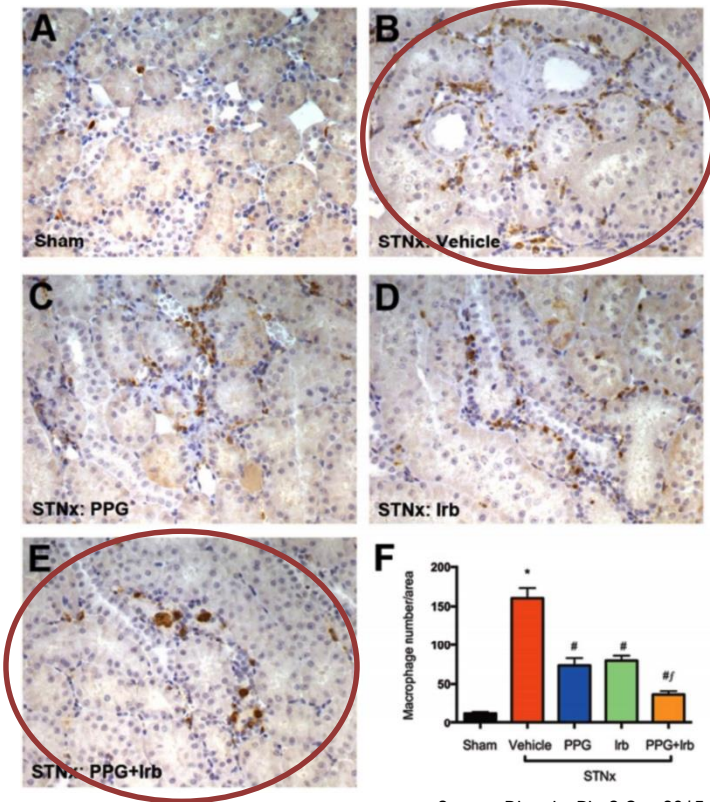


Source: Dimerix, PLoS One 2015

**DMX200 combination therapy significantly reduces proteinuria vs. Irbesartan or CCR2 antagonist alone**

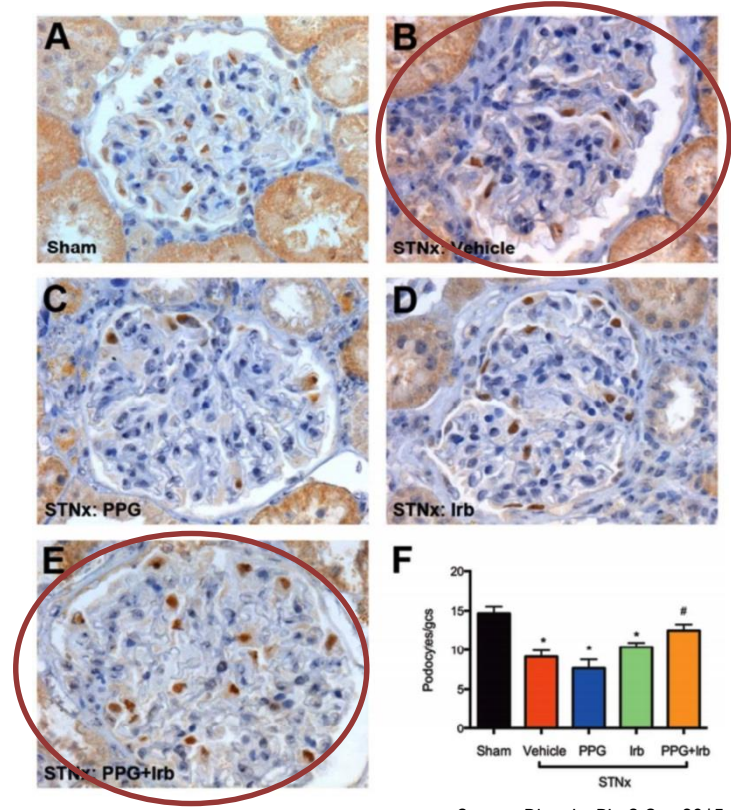
# DMX200 – Improves disease pathology in STNx rats

## ↓ Macrophage infiltration



Source: Dimerix, PLoS One 2015

## ↑ Podocyte numbers



Source: Dimerix, PLoS One 2015

Pathology strongly supports physiology and pharmacology

# DMX200 – Phase 2 Clinical Trial

- ⊙ Treatment of Proteinuria in CKD patients
- ⊙ Study design: Fixed dose combination of Irbesartan + Propagermanium
  - ⊙ Enrolment: Up to 60 patients in two Parts
  - ⊙ Part A: Dose escalation – Up to 5 doses x 1 month, then 2 further months at maximal dose
  - ⊙ Part B: “Best dose” combination - 3 months
- ⊙ Endpoint: Safety and complete or partial remission of proteinuria @24 weeks of treatment
- ⊙ Trial duration: ~12 – 18 months with interim data at 6 – 9 months

## Status

- ⊙ Ethics approval and site initiation completed achieved at Austin Hospital. Patient screening commenced
- ⊙ Ethics proceeding through local governance at 2 additional Melbourne sites



# Dimerix Bioscience – Sector Activity and Precedent Transactions

# Sector Activities



## February 2015 Sosei acquires Heptares for US\$400M and US\$175M upfront

- ⊙ 1 product in Phase 1 and 7 pre-clinical leads
- ⊙ GPCR platform based on structure determination for drug discovery

| Development programme                      | Indication   | Development Stage |
|--|--|-------------------|
| M <sub>1</sub> agonist                     | Cognitive impairment in Alzheimer's disease/ Schizophrenia/others)               | Phase Ib          |
| A <sub>2A</sub> antagonist                 | ADHD   | IND open          |
| M <sub>4</sub> agonist                     | Psychosis (Schizophrenia/ Alzheimer's disease/others)                            | Pre-clinical      |
| M <sub>1</sub> M <sub>4</sub> dual agonist | Cognitive impairment and psychosis in Schizophrenia/ Alzheimer's disease/others) | Pre-clinical      |
| CGRP antagonist                            | Migraine   | Pre-clinical      |
| GLP-1 agonist peptide                      | Diabetes   | Pre-clinical      |
| GLP-1 antagonist                           | Congenital hyperinsulinism   | Pre-clinical      |
| Orexin OX <sub>1</sub> antagonist          | Addiction  | Pre-clinical      |

# Sector Activities

## Chemocentryx (NASDAQ: CCXI, MCap US\$315M)

⊙ Biopharmaceutical company targeting chemokine receptor targets

- ~> Lead program CCX140 targeting chemokine CCR2 receptor
- ~> Phase II clinical trial for diabetic nephropathy
- ~> Dec 2014: The trial met its primary endpoint
- ~> Treatment with 5 mg of CCX140 added to a standard of care regimen of angiotensin converting enzyme (ACE) inhibitor or angiotensin receptor II (AT1) antagonist treatment resulted in a statistically significant ( $p=0.0148$ ) reduction in urinary albumin creatinine ratio (UACR), beyond that achieved with control
- ~> Second generation compound in Phase 1 clinical trial for other renal disease indications.
- ~> Market cap almost doubled on release of headline data from PII study

# Sector Activities

## Questcor Acquired by Mallinckrodt Pharmaceuticals – Marketing Acthar® for Proteinuria in Nephrotic Syndrome

- ~> Acthar gel (injection only, steroid).
- ~> Acthar being repositioned for new indications including applications of chronic kidney disease (proteinuria in nephrotic syndrome).
- ~> Significant unmet need and few treatment options has enabled headline pricing of \$100,000 per treatment for the orphan indication.
- ~> First sales for nephrotic syndrome in Jan 2011. In 2012 FY Net sales \$509 million – ~50% from nephrotic syndrome. 2013: \$761 million
- ~> Acquired by Mallinckrodt in August 2014 for US\$5.6B



# Dimerix Key Value Drivers (0-18 months)

- i. ***Ethics*** approval for additional clinical sites
- ii. ***Australian patent*** for lead candidate granted
- iii. Fast track of the ***US patent*** under Pathway Prosecution Highway
- iv. ***First patient in*** Phase 2 Part A study treated
- v. Patients at ***new clinical sites*** recruited in Phase 2
- vi. ***Orphan designation*** application
- vii. Second program animal ***PoC completed***
- viii. Phase 2 Part A ***data out*** (1H 2016)
- ix. ***US patent allowed***
- x. Research ***agreements and collaborations*** around the GPCR-HIT assay
- xi. Pre-IND meeting
- xii. ***Second*** program start of ***Phase 2*** (NASH or diabetic retinopathy)

