AdAlta
next generation protein therapeutics

ASX Announcement

Fibrosis symposium presentation material

MELBOURNE Australia 21st February 2017: AdAlta Limited (ASX: 1AD), the biotechnology company advancing AD-114, its lead i-body candidate for the treatment of idiopathic pulmonary fibrosis (IPF) and other human fibrotic diseases towards clinical development, is pleased to release the material that will be presented in Melbourne today at an R&D briefing meeting on fibrosis for analysts and investors.

Fibrosis accounts for 45% of all diseases globally in the developed world and represents a large unmet medical need.

Speakers and topics on the agenda at the symposium include:

- Dr Robert Peach, Non-Executive Director, AdAlta's Board, Receptos story – From NZ to the US, a Phase III antibody and an $8B acquisition
- Associate Professor Michael Foley, La Trobe University, AD-114 a novel i-body for the treatment of fibrosis
- Associate Professor Glen Westall, Alfred Hospital, Pulmonary fibrosis – current state of play in Idiopathic Pulmonary Fibrosis (IPF)
- Dr Muh Geot Wong, Kolling Institute Renal fibrosis and chronic kidney disease
- Professor Erica Fletcher, University of Melbourne, eye fibrosis, causes, diseases and treatments
- A closing panel chaired by Stuart Roberts, including Dr Brian Richardson, Dr John Westwick and Dr Robert Peach
- Sam Cobb, CEO of AdAlta will provide an update on company activities

Highlights from the symposium will be made available to shareholders during the coming week.

To find out more about AdAlta, contact Sam Cobb, CEO, Tel: (03) 9479 5159 or email enquiries@adalta.com.au.

Notes to editors

AdAlta Limited (ASX:1AD) is an Australian based drug development company headquartered in Melbourne. The Company is focused on using its proprietary technology platform to generate i-bodies, a new class of protein therapeutics, with applications as therapeutic drugs to treat diseases. AdAlta is developing its lead i-body candidate, AD-114, for the treatment of idiopathic pulmonary fibrosis (IPF) and other human fibrotic diseases, for which current therapies are sub-optimal and there is a high-unmet medical need. AD-114 has strong pre-clinical results for IPF, demonstrating both anti-fibrotic and anti-inflammatory activity in human lung tissue and indicating greater efficacy than existing approved IPF drugs. The i-body is a human analogue of the antigen binding domain of the shark antibody, which combines the advantages of monoclonal antibodies (high target specificity and affinity) with the beneficial stability features of small molecules. In addition to stability, the i-body has a long binding loop that is a feature of shark antibodies not present in either human or next generation antibodies. This feature enables the i-body to recognise and bind to a diverse range of different therapeutically-relevant drug targets, including those that are difficult/intractable to access by current antibody therapies. These include clinically important targets such as G-protein coupled receptors (GPCRs) and ion channels.

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next generation protein therapeutics

Analyst and investor fibrosis briefing

A new class of protein therapeutics to treat human disease

February 2017

Analyst & investor fibrosis briefing

- AdAlta's inaugural investor and analyst briefing aims to educate analysts and investors on our R&D technology platform as it relates to the science and the commercial opportunity to deliver value to shareholders
- AD-114 for idiopathic pulmonary fibrosis remains a core priority for the business
- AdAlta's focus is the completion of Phase I clinical studies and securing a global licensing deal for our lead i–body candidate
- Additional applications for the i-body platform in a range of other fibrotic diseases will also be discussed in detail

Analyst & investor fibrosis briefing

- Recent international partnerships and collaborations have independently assessed and validated our technology
- Expert presentation by non-executive Director Dr Robert Peach will outline what it takes to get an antibody to Phase III and an $8B acquisition
- AdAlta Chief Scientific Officer Mick Foley will outline AD-114 data in various therapeutic areas of fibrosis
- Presentations by leading researchers in lung, kidney and eye fibrosis will provide an overview of the clinical and commercial opportunities in this therapeutic area
- AdAlta's world class SAB John Westwick and Brian Richardson and AdAlta's non-executive Director Robert Peach will be available to answer specific questions and to discuss what it takes to get a fibrosis drug to the clinic and a deal

Agenda

	Robert Peach	From NZ to the US, a Phase III antibody and an $8B acquisition Robert will discuss the Receptos story and what it takes to get an $8B acquisition
	Mick Foley	AD-114 a novel i-body for the treatment of fibrosis Mick will provide a summary of AD-114 data in therapeutic areas of lung, liver and eye fibrosis
	Glen Westall	Pulmonary fibrosis – current state of play in Idiopathic Pulmonary Fibrosis Glen will discuss what is IPF, how it is diagnosed, what the current treatments and their limitations and the drug development pipeline
	Muh Geot Wong	Renal fibrosis and chronic kidney disease Muh Geot will discuss what happens with chronic kidney disease, how it is diagnosed, what the current treatments and their limitations and the drug development pipeline

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Agenda

Erica Fletcher	**Eye Fibrosis, causes, diseases and treatments** Erica will discuss eye fibrosis and the various diseases including wet-AMD, what the current treatments and the drug development pipeline
PANEL DISCUSSION: Brian Richardson John Westwick Robert Peach	**Getting a fibrosis drug to the clinic and a deal** The panel includes a number of drug development experts who have significant experience taking a drug from the research bench, through the clinic and providing to patients. The panel will discuss what it takes to get a fibrosis drug to the clinic. They will also discuss what it takes to get a deal with a pharmaceutical company.
Sam Cobb	**AdAlta Investor Update** Sam will provide investors an update on AdAlta's achievements since the oversubscribed IPO in August and upcoming milestones

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next generation protein therapeutics

Receptos story – From NZ to the US, a Phase III antibody and an $8B acquisition

Robert Peach

Dr Robert Peach

- Dr Peach has over 25 years of drug discovery and development experience in the pharmaceutical and biotechnology industry. In 2009 he co-founded Receptos, becoming Chief Scientific Officer and raising $59M in venture capital and $800M in an IPO and three subsequent follow-on offerings.
- In August 2015 Receptos was acquired by Celgene for $7.8B. His extensive drug discovery and development experience in autoimmune and inflammatory diseases, and cancer has resulted in multiple drugs entering clinical trials and 3 registered drugs. He currently serves on the Board of Directors of Innate Immunotherapeutics and Avalia Immunotherapies and is a consultant for several other biotechnology companies.
- Robert is the co-author of 70 scientific publications and book chapters, and 17 patents. He was educated at the University of Canterbury and the University of Otago, New Zealand.

receptos

Receptos Story – From NZ to the US, and an $8B Acquisition

Robert Peach, Ph.D.

from
Groundbreaking Science
to the Clinic

Presentation Outline

- Receptos experience
  - Starting a biotechnology company in San Diego
    - Licensing assets
    - Raising venture capital
    - Hiring staff and building a productive culture
  - Ozanimod: a small molecule drug for treating relapsing multiple sclerosis and inflammatory bowel diseases
    - Clinical data
    - Market analyses
  - Strategies that lead to an $8B acquisition

The Path Towards Receptos – Key Roles

- 1991-2000 Discovery and development of Orencia and Nulojix at Bristol-Myers Squibb; Seattle and Princeton
- 2000-2003 Director Antibody Discovery at IDEC. Rituxan (anti-CD20) for autoimmune diseases
- 2003-2007 Senior Director, Oncology Discovery at merged Biogen Idec. Multiple programs advanced into clinic. In-licensing, acquisition, VC investments
- 2007-2009 Co-founder and VP Biology at Apoptos. Oncology assets licensed from Burnham Institute
- 2009-2015 Co-founder and Chief Scientific Officer of Receptos

Receptos Start-Up: 2009

- Starting with a failure: Apoptos
- Receptos was founded in 2009 with technology licenses from The Scripps Research Institute™
- Focus primarily on autoimmune disease drug discovery and development, and a structure-based drug design technology platform
- 2009: A tough time raising $25M in venture capital
  - Venrock, Arch, Lilly, Flagship
- $34M in 2010
  - Polaris, Venrock, Arch, Lilly, Flagship
- 20 scientists, 1 business development, 1 accountant, 1 admin
  - Deep experience, multiple skill sets, cultural “fit”
  - No CEO, CMO, CFO etc

Receptos Location: Torrey Pines Mesa in San Diego

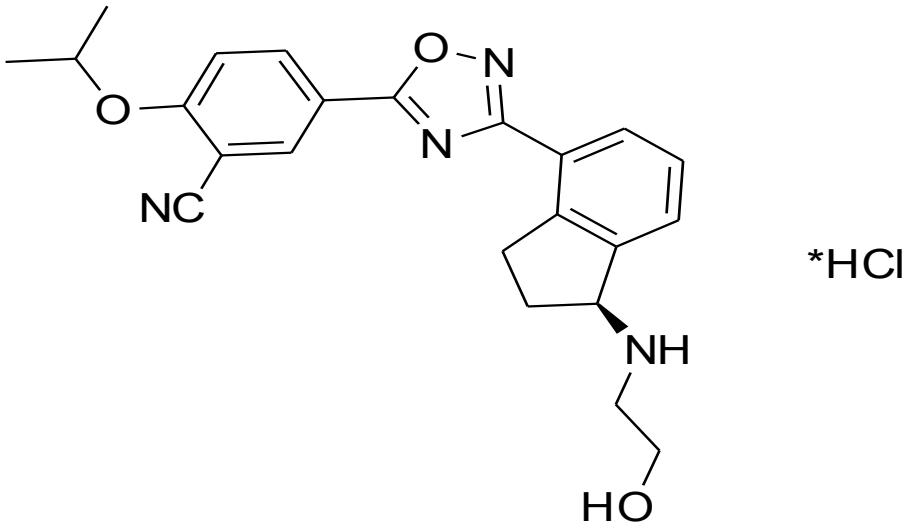
What did we License from Scripps?

- GPCR structural biology technology platform
  - Established industry partnerships that raised $20M in non-dilutive capital
- Small molecule compound “hits” identified in a high through-put screen targeting the activation of a protein called sphingosine 1-phosphate 1 receptor (S1P1R)
- Receptor is expressed on lymphocytes and is involved in controlling the trafficking of these cells out of lymphoid tissues
- Biological rationale suggested an ability to impact pathology associated with multiple autoimmune diseases, including multiple sclerosis and inflammatory bowel diseases (ulcerative colitis, Crohn’s disease)
- Clinical proof of concept established for this mechanism of action

Drug Discovery Goals: Best in Class and Rapid Development

- Develop an oral daily pill that could be dosed chronically and had a superior safety profile to "same class" multiple competitor drugs, including Gilenya, that was close to completing clinical development
  - Cardiac toxicity including 1st dose heart rate monitoring
  - Prolonged drug activity
  - Induction of fibrosis
- Rapid preclinical development
  - 1 year to identify clinical candidate
  - 10 months to file an IND (November 2010)
  - Phase 1 SAD/MAD began 1 month after IND approved (January 2011)

RPC1063 (Ozanimod)

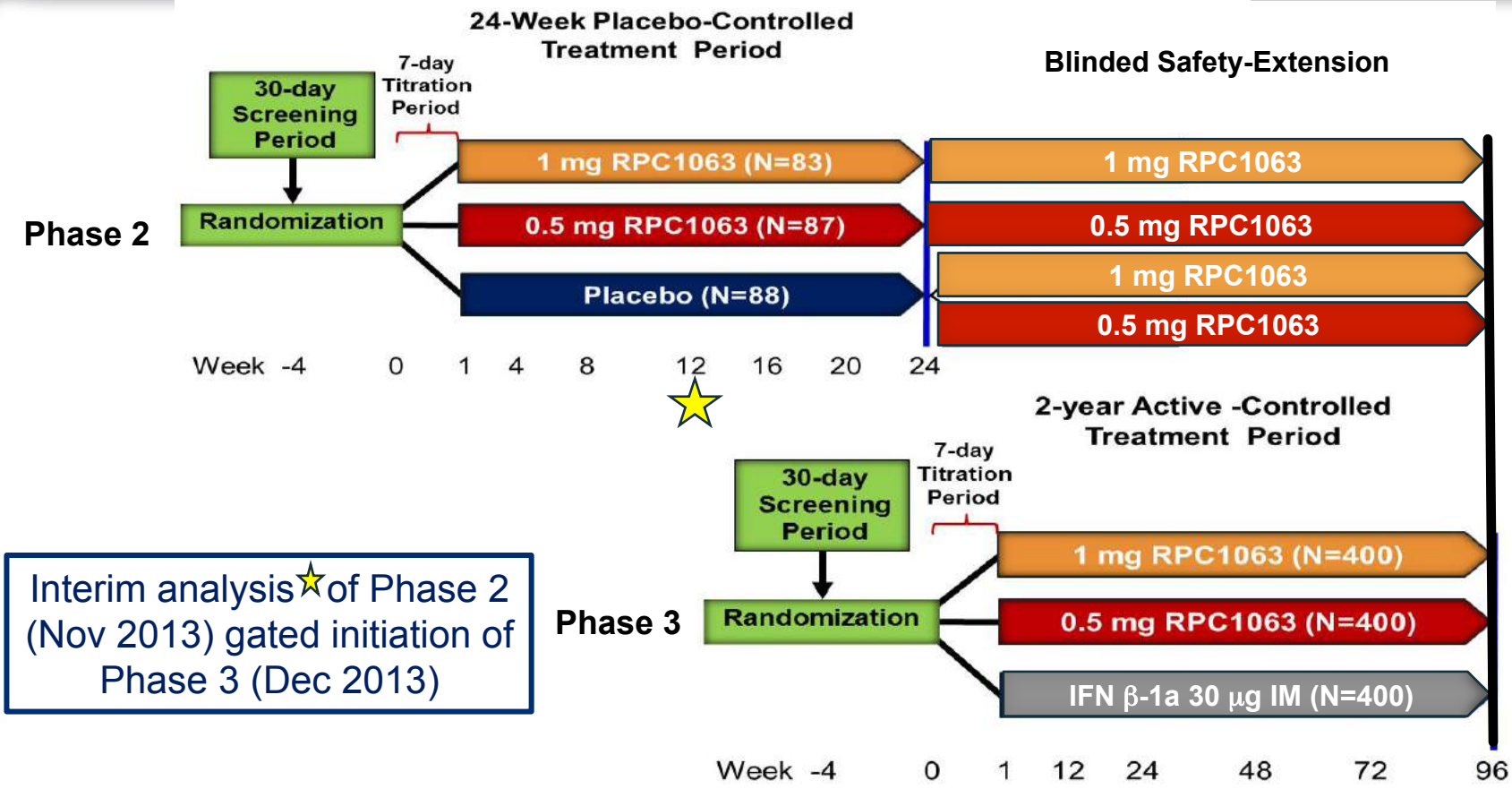


- Optimal potency, selectivity, oral bioavailability, absorption, distribution, metabolism, excretion, toxicity, pharmacokinetic and pharmacodynamic properties

RADIANCE Phase 2/3 Trial Overview

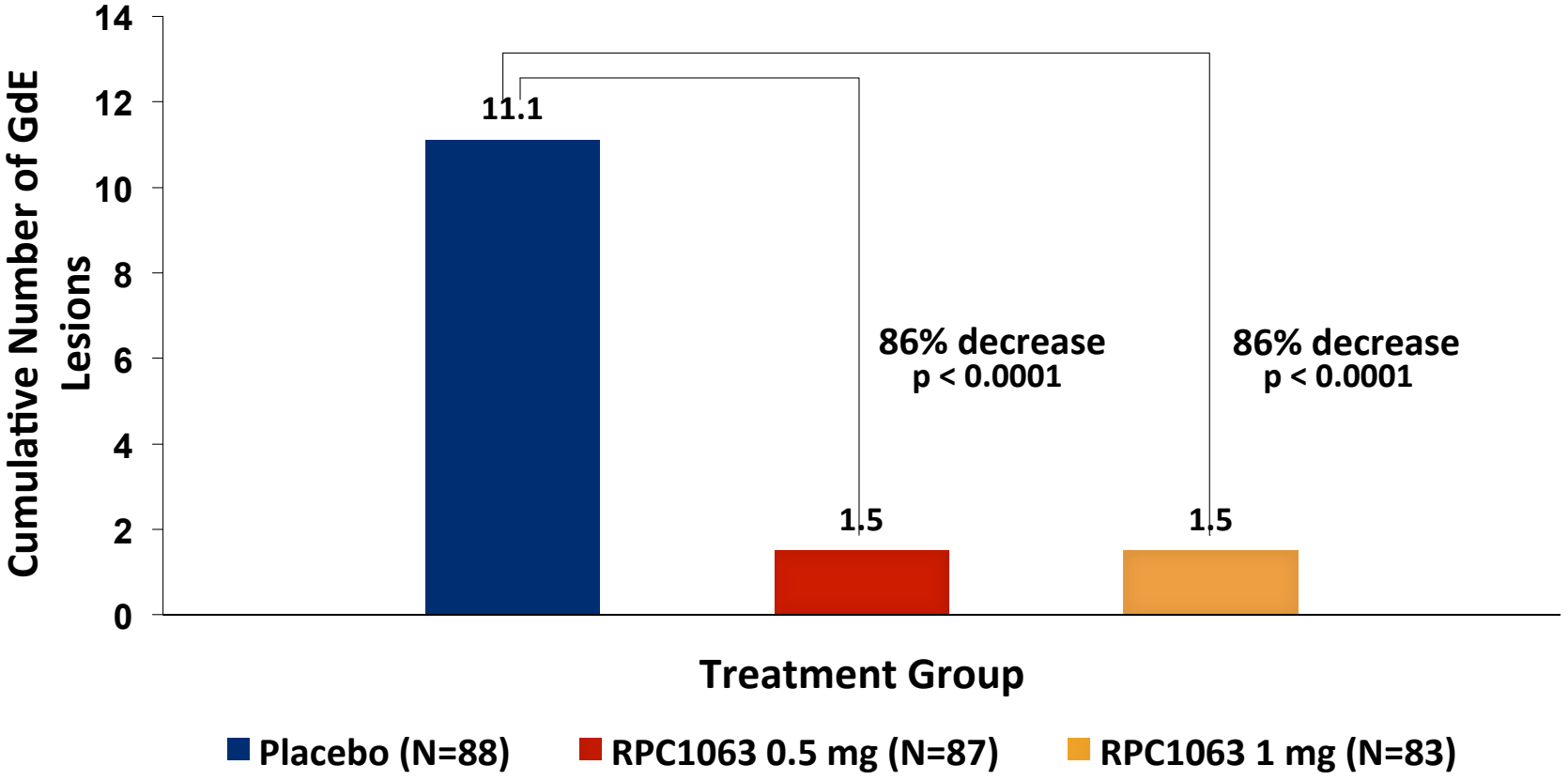
Relapsing Multiple Sclerosis

SPA Agreement with FDA

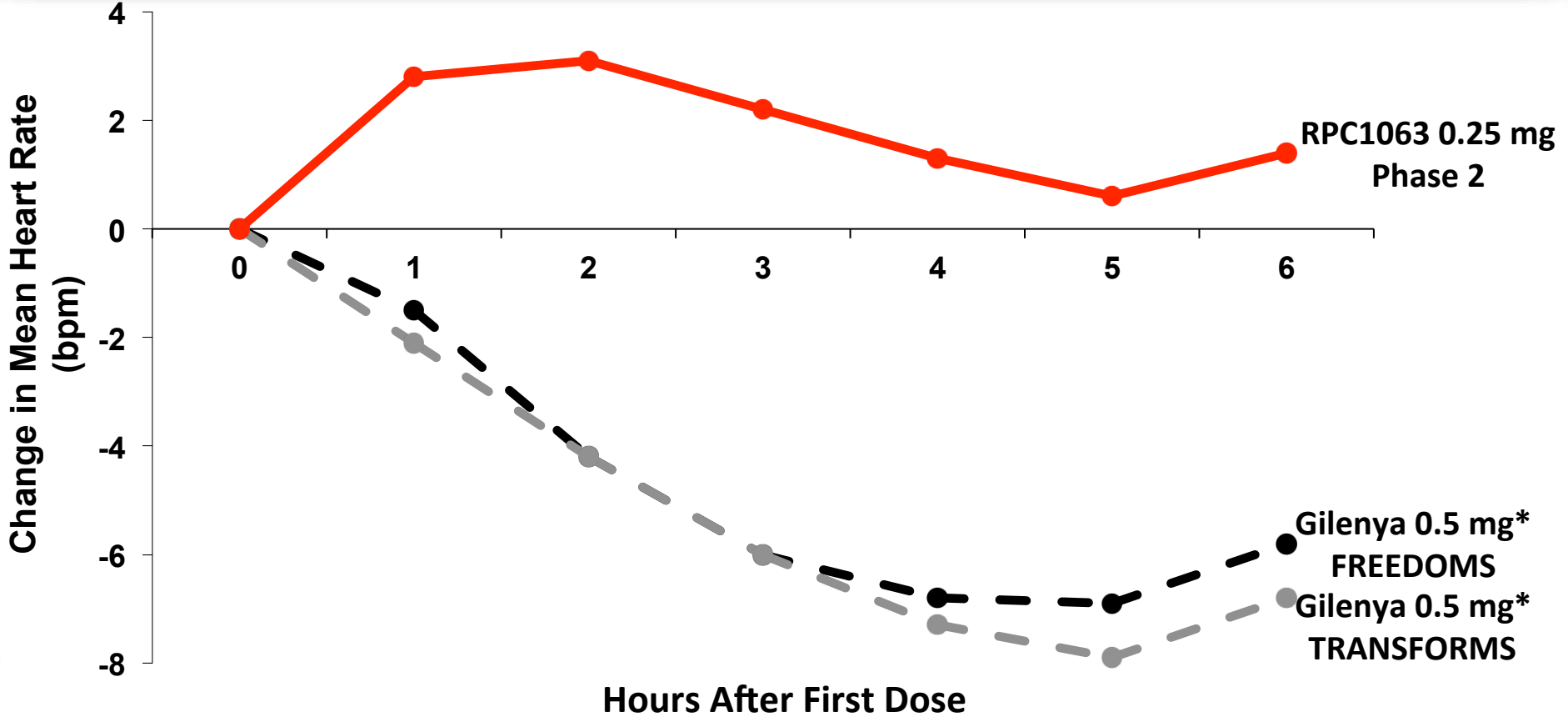


Interim analysis ☆ of Phase 2 (Nov 2013) gated initiation of Phase 3 (Dec 2013)

Phase 2 Primary Endpoint: Mean Cumulative Number of GdE Lesions From Wk 12 to Wk 24



First Dose Effect on Mean Heart Rate Hours 1 to 6: Comparison to Gilenya*



*Data estimated from Novartis material at MSBoston2014; not a head to head comparison

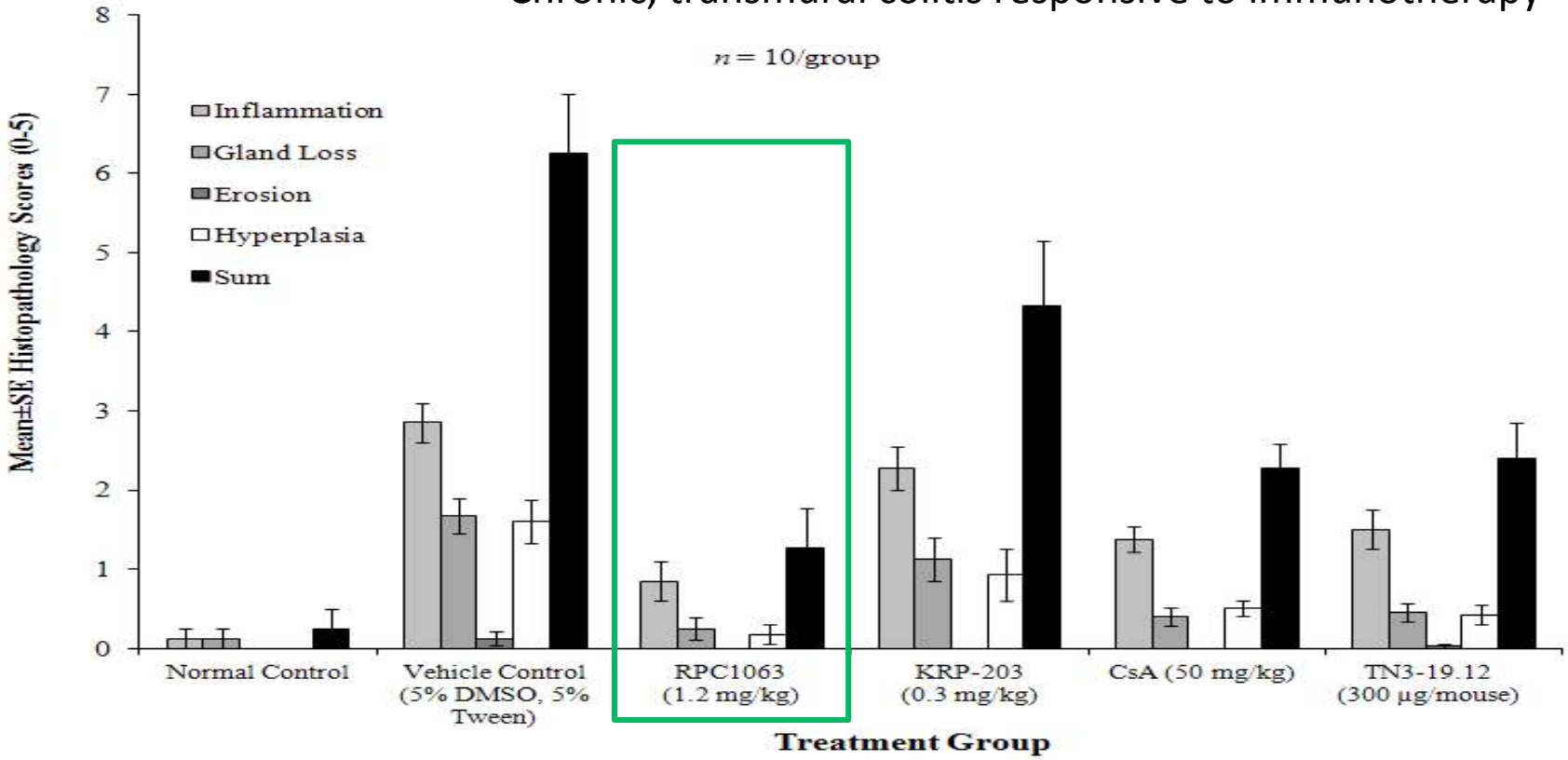
Current Clinical Trial Status in Relapsing Multiple Sclerosis

- Two large phase 3 registrational trials ongoing
  - Worldwide
  - 1,300 patients per trial
  - 1 year of dosing
  - 2 years of dosing
  - Compared to Avonex, a currently approved drug
  - $100,000/patient; $130M/trial
  - Clinical development completed in 2017
  - New Drug Application and approval with FDA/Europe in 2018

RPC1063 is Active in a Therapeutic SCID Mouse Model of Inflammatory Bowel Disease

CD4^{+} CD45RB^{high} T-Cell Adoptive Transfer: Histopathology

Chronic, transmural colitis responsive to immunotherapy



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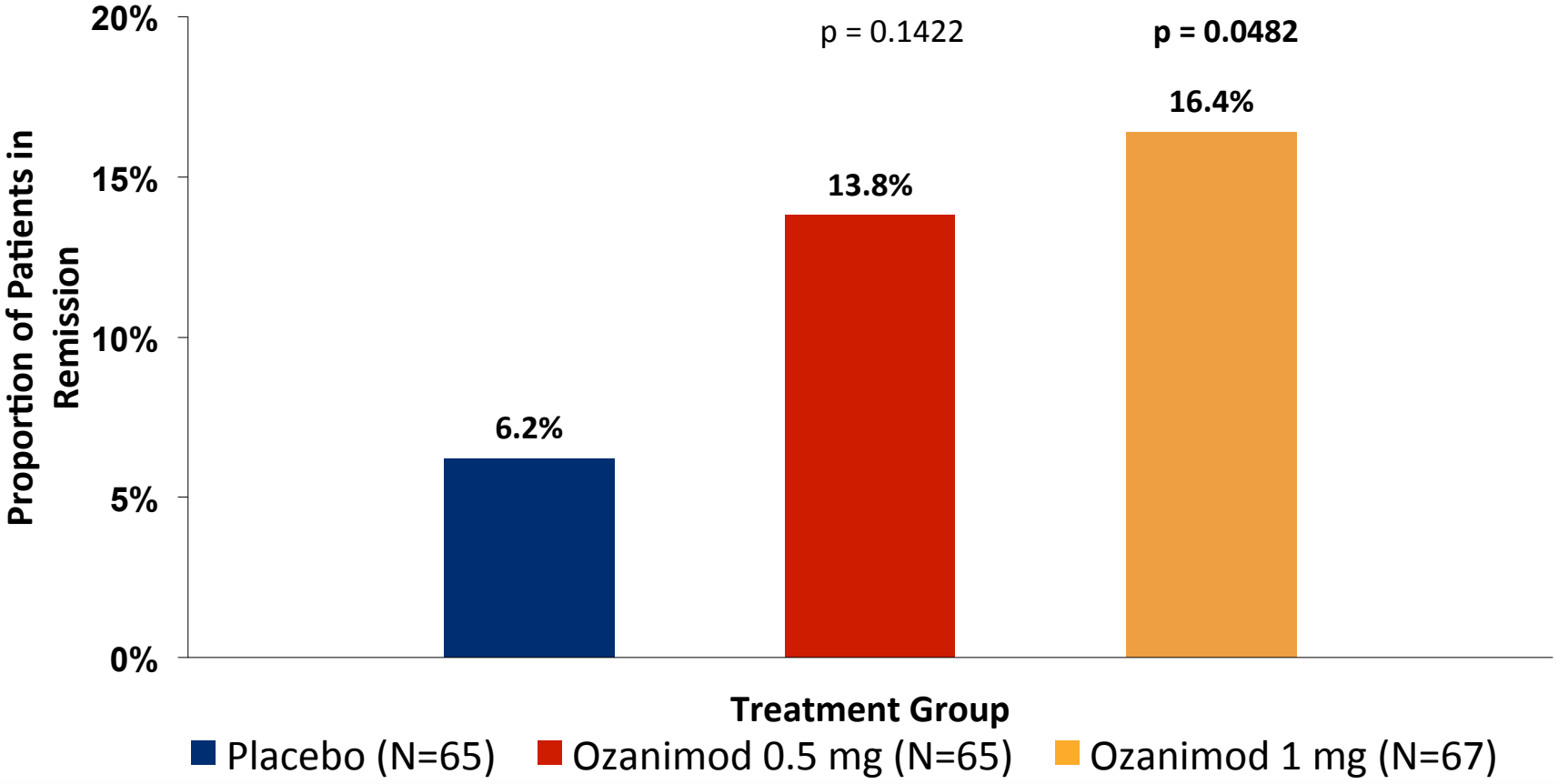
Phase 2 Ulcerative Colitis: Proportion of Patients in Remission at Week 8 (April 2015)

Primary Endpoint



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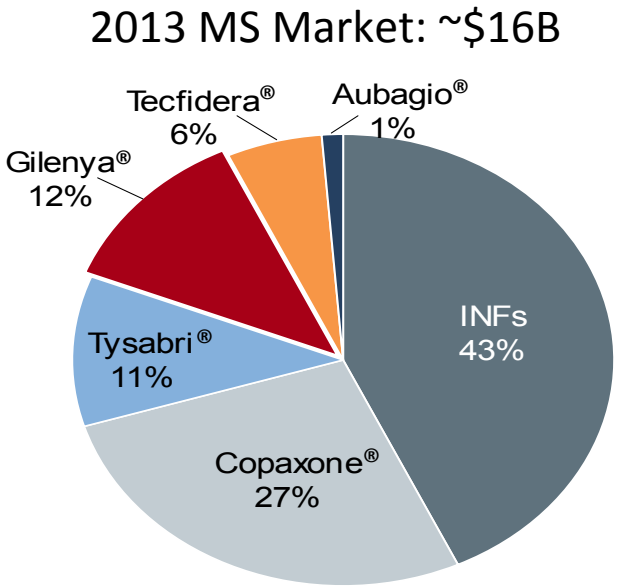
The Relapsing Multiple Sclerosis Market is Valued at ~$16B



MARKET SIZE

- 11% CAGR (2009 – 2013)

CURRENT THERAPIES*

- **Interferon-b ($6.8B)** characterized by flu-like symptoms and injections from weekly to every-other day
- **Copaxone® ($4.3 B)** is similar in efficacy to INFs; trades off flu-like symptoms for daily injections
- **Tysabri® ($1.7B)** has superior efficacy but PML risk limit uptake
- **Gilenya® ($1.9B)** *first oral* with significant improvement in ARR reduction compared to ABCRs (launched 3Q10)
- **Tecfidera® ($0.9B)** newest oral to RMS market (launched 2Q13)

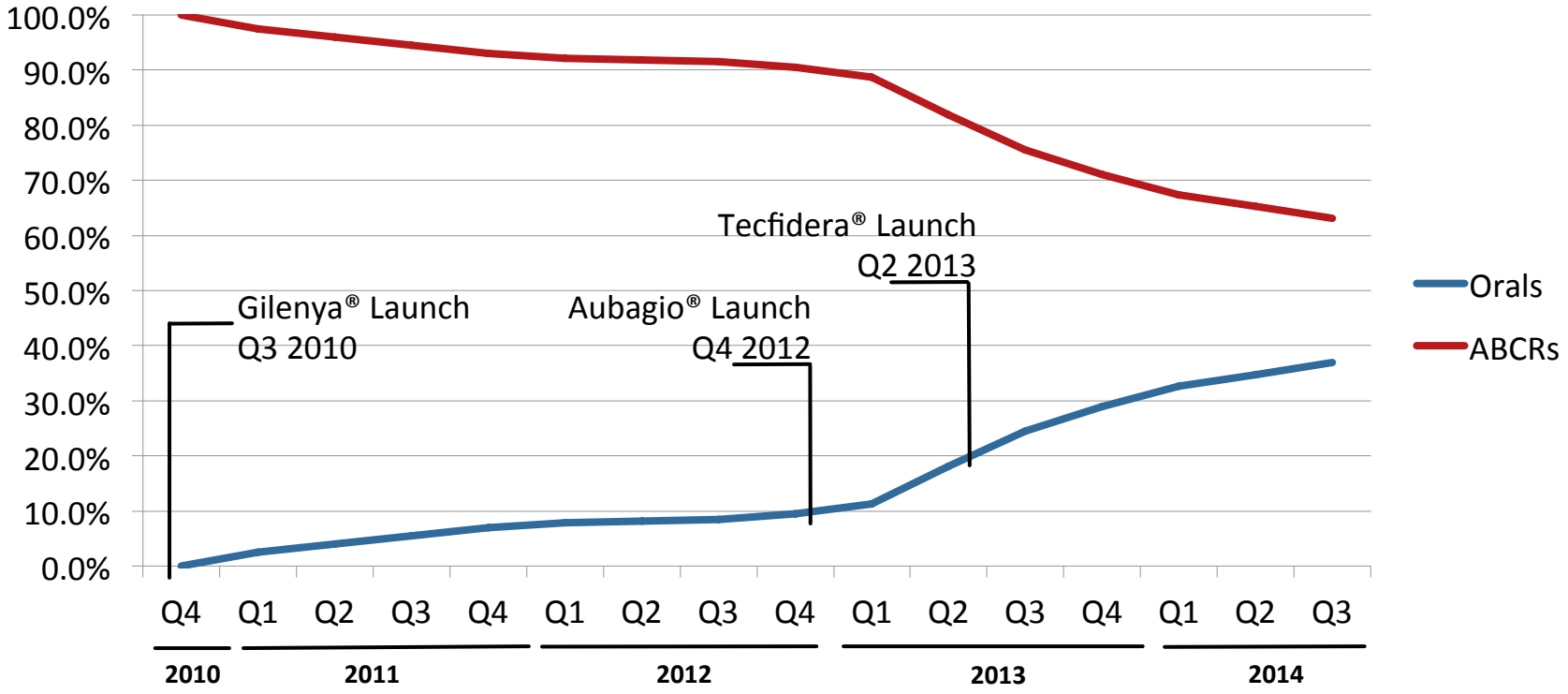
UNMET NEEDS

- Safe and efficacious therapies
- More tolerable & convenient therapies
- Agents that halt or reverse damage

Source: Datamonitor, Credit Suisse Analyst Reports, Company Annual Reports and Q4 2013 Reports

Oral Share of RMS IMS Scripts Rapidly Increasing

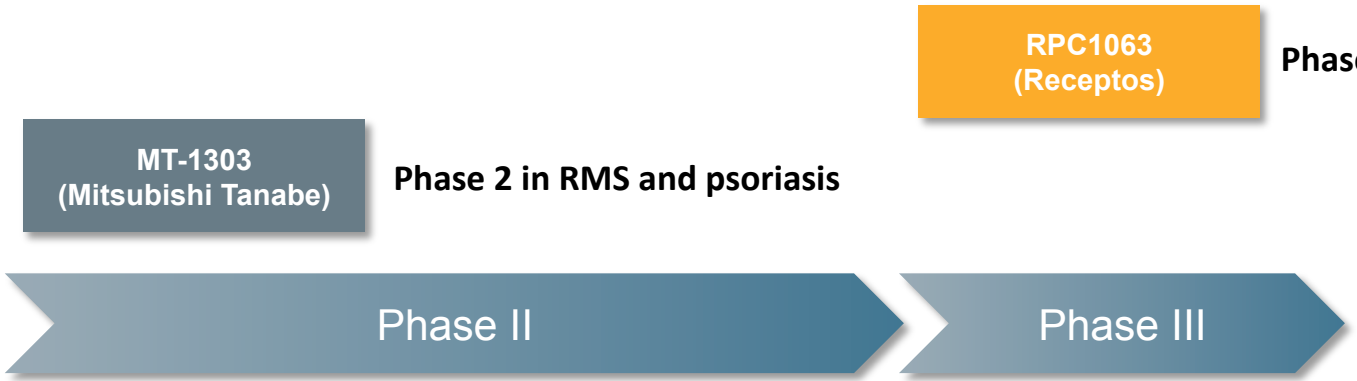
Gilenya® and Tecfidera® drive rapid increases in oral market share gains



Note: RMS Therapies Include Avonex®, Betaseron®, Copaxone®, Rebif®, Gilenya®, Aubagio® & Tecfidera®;
Orals = Gilenya®, Aubagio® & Tecfidera®; ABCRs = Avonex®, Betaseron®, Copaxone® & Rebif®

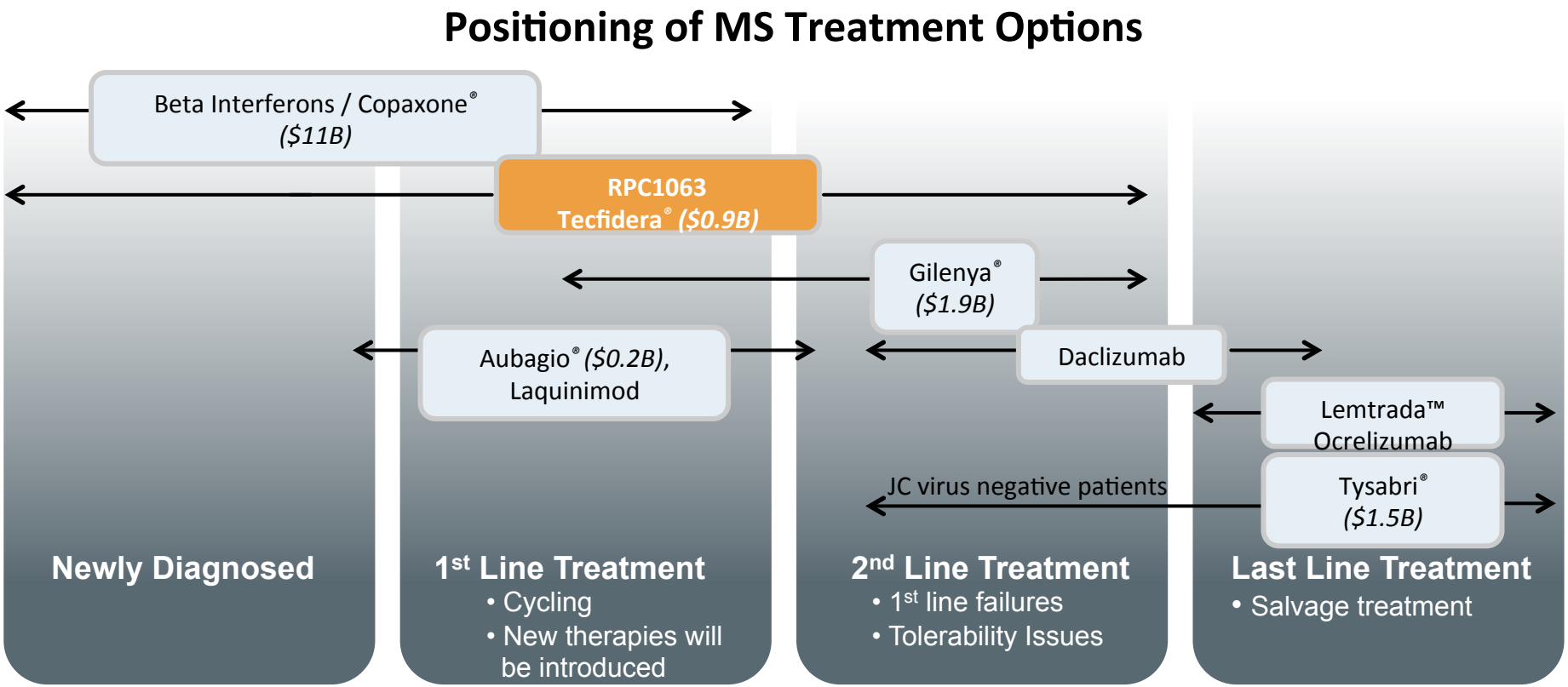
Source: IMS Scripts NPA

RPC1063 Poised to be Next $S1P_{1,5}R$ Modulator into RMS Market

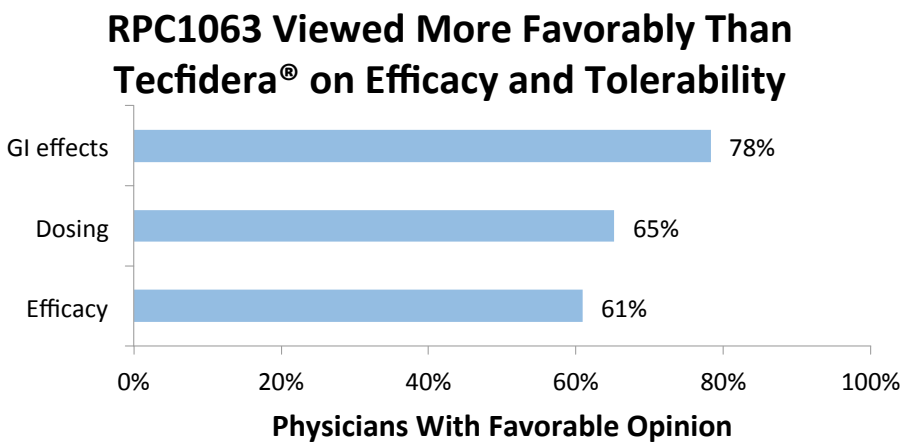


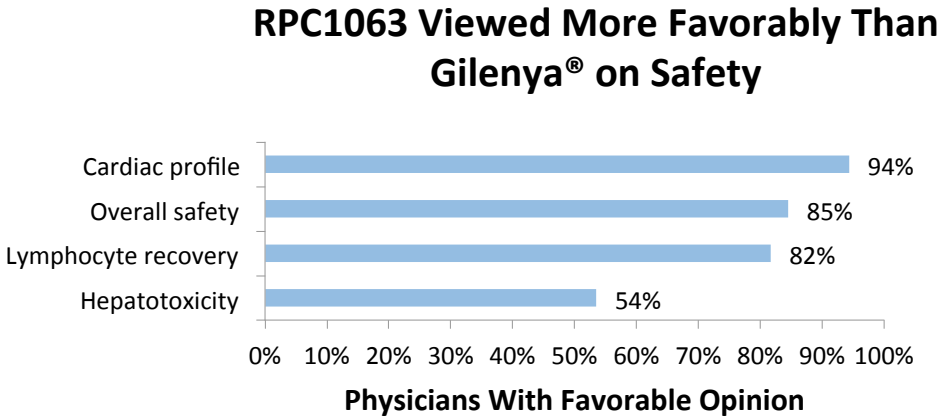
RMS Market Valued at $16B and Growing

Marketing Strategy for RMS Includes Competing Head to Head with Tecfidera® in Front Line While "Beating" Gilenya® in Later Lines



In Market Research, RPC1063 Profile Viewed More Favorably Than Tecfidera® on Efficacy and Tolerability and Gilenya® on Safety





- Majority of physicians had a positive view of RPC1063 on all metrics tested compared to currently marketed orals
- When shown patient profiles, physicians selected RPC1063 more frequently than any marketed RMS therapy

Note: For purposes of the survey, respondents were provided with a product profile for RPC1063 that assumed efficacy equal to Gilenya® with specified improvements in safety profile; Actual clinical results for late stage trial and the FDA marketing label for RPC1063, if approved, may be different than the profile that was assumed for market research; Pricing and reimbursement were assumed to be equal among RPC1063 and all other RMS treatments

Source: ZS Associates, Neurologist Survey, N = 75; ZS Associate, Neurologist Interview Study, N = 21; Market research was sponsored by Receptos

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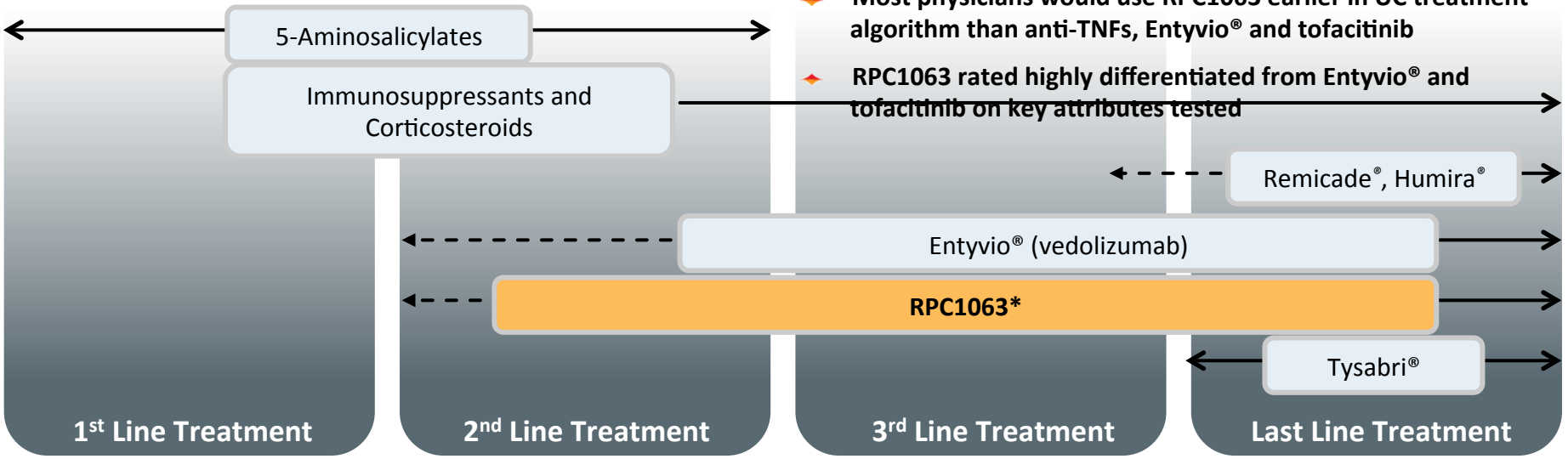
The UC Market Opportunity for RPC1063 in the US: Gastroenterologists Position RPC1063 in Early Lines Against Immunosuppressants *as well as* Last Line Against Anti-TNFs

Positioning of UC Treatment Options in Market Research Outcomes

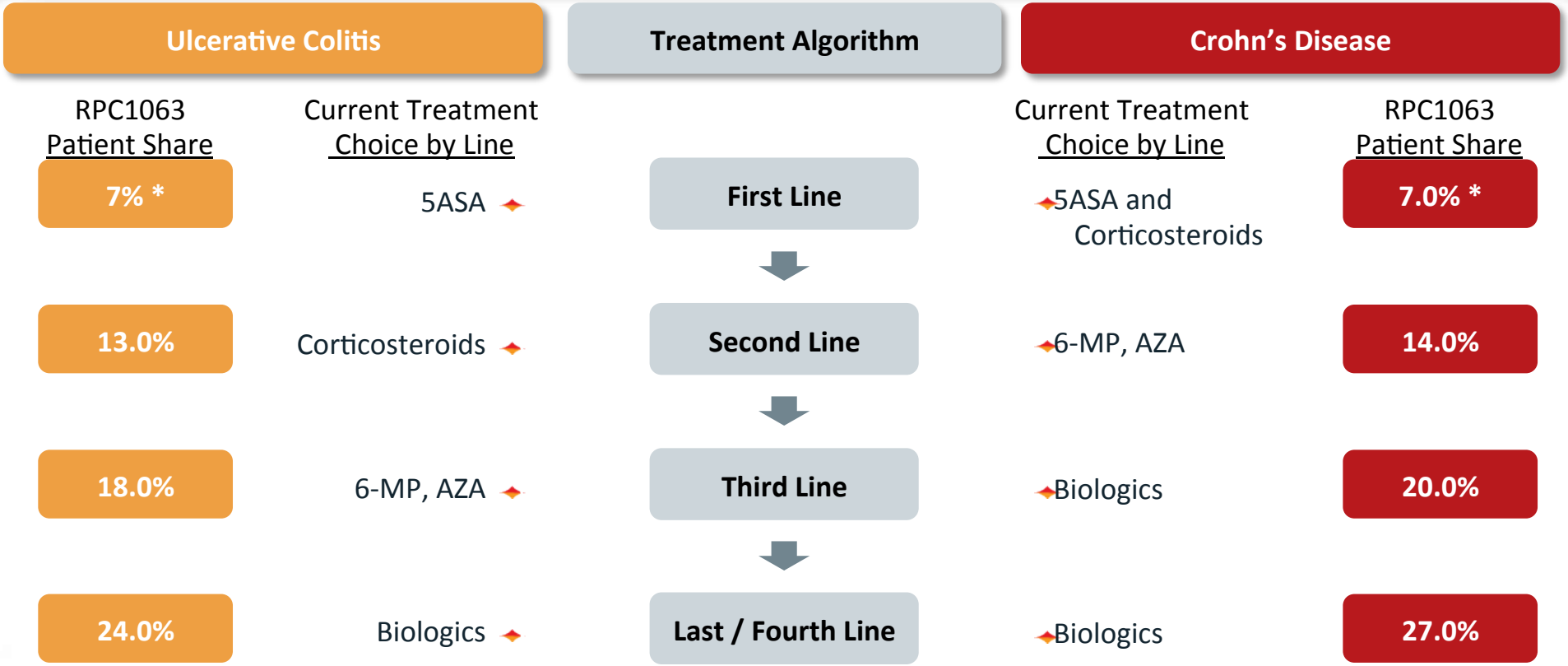
- **RPC1063 scored higher on key safety attributes than anti-TNFs**
- **Most physicians would use RPC1063 earlier in UC treatment algorithm than anti-TNFs, Entyvio® and tofacitinib**
- **RPC1063 rated highly differentiated from Entyvio® and tofacitinib on key attributes tested**



Positioning based on Receptos sponsored market research. Respondents were provided with a product profile for RPC1063 and vedolizumab that assumed comparable efficacy improved to anti-TNFs with specified improvements in safety profile. Actual clinical results for late stage trial and the FDA marketing label for RPC1063, if approved, and vedolizumab, approved in May 2014, may be different than the profile that was assumed for market research; pricing and reimbursement were assumed to be equal among RPC1063 and all other UC treatments

Source: Kantar 2013, US Gastroenterologist Quantitative Survey (N = 101)

Market Research Results:
US Gastroenterologist Estimated RPC1063 Patient Share in IBD



Note: * Physicians were asked to estimate first line RPC1063 peak patient share IF clinical trial data was available demonstrating improvement to 5-ASAs. Receptos applies appropriate discounts to market research results for the purposes of financial modeling.

Source: Kantar 2013, US Gastroenterologist Quantitative Survey (N = 101)

Receptos: 2015

- IPO (NASDAQ: RCPT) in May 2013. $83M raised. $14/share
- Additional 3 capital raises in 2014, totaling ~$700M. Each raise over-subscribed
- 110 employees and growing
- Phase 3 clinical trials in relapsing multiple sclerosis and phase 2 in inflammatory bowel diseases (UC and Crohn's disease)
- Phase 2 in EoE
- Preclinical program in T2D/NASH
- Discovery chemokine receptor program
- Acquired July 2015 for $7.8B
  - $232/share

Key Strategies and Lessons Learnt

- Hire the “right” people and on an “as needed” basis. Wear lots of hats and preserve $$
- Build a productive, creative, rewarding culture
- Focus, don’t waste time or money. Understand the critical path activities
- Do rigorous science
- Don’t partner early
- Enact bold (but not reckless) clinical development plans
- Understand the competition and where your drug might fit in the market place
- Under promise and over deliver
- Build relationships: FDA, CRO’s, consultants, KOL’s, investors, pharma/biotech
- Raise money when you can
- Maintain optionality

Kaikoura

AD-114 a novel i-body for the treatment of fibrosis

Mick Foley, CSO AdAlta Limited

m.foley@adalta.com.au

A/Prof Mick Foley

- Mick is the founding scientist of AdAlta and a key inventor of AdAlta's lead i-body candidate AD-114.
- Upon completion of his PhD he was awarded a Wellcome Training Fellowship and worked at the Walter and Elisa Hall Institute. In 1995 Mick was awarded an ARC QEII Fellowship where he established the phage display of antibodies and peptide technology as a means of answering fundamental questions of immunity to infectious diseases.
- Mick is an internationally recognized leader in phage display, the technology used to screen the i-body library to identify new drug candidates. Having published over 70 scientific publications Mick has received funding from ARC, NHMRC and NIH (US).

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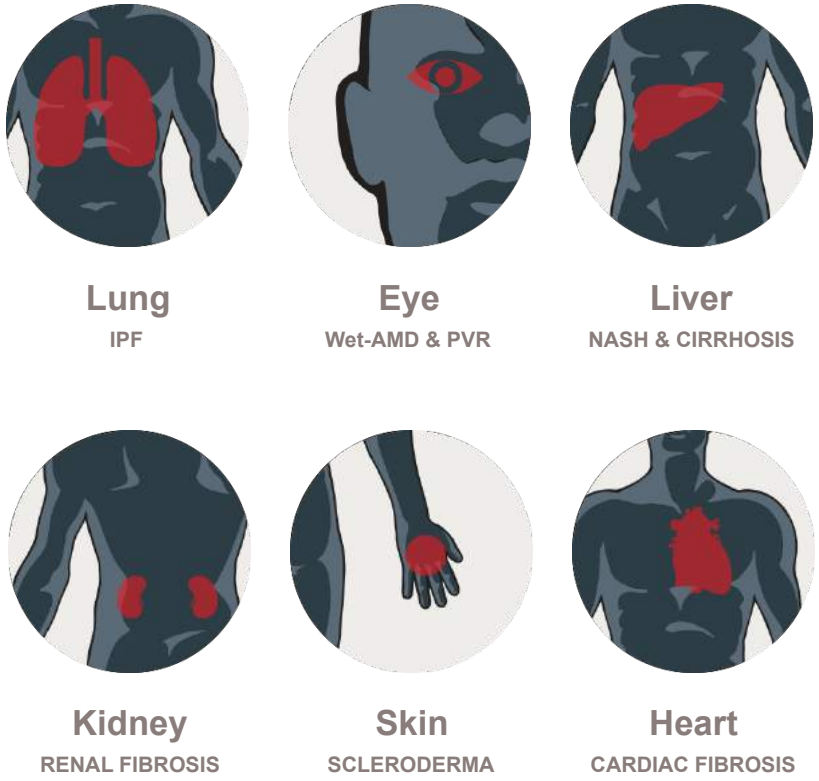
Fibrosis: unmet medical need with multiple indications

- Developing i-bodies as improved therapies for the treatment of fibrosis
  - a condition that is prevalent in 45-50% of all diseases
- Fibrosis can occur in many tissues of the body as a result of inflammation or damage
  - it can result in scarring of vital organs causing irreparable damage and eventual organ failure
- AdAlta's initial focus is on lung fibrosis

Collectively fibrosis represents a large unmet clinical need



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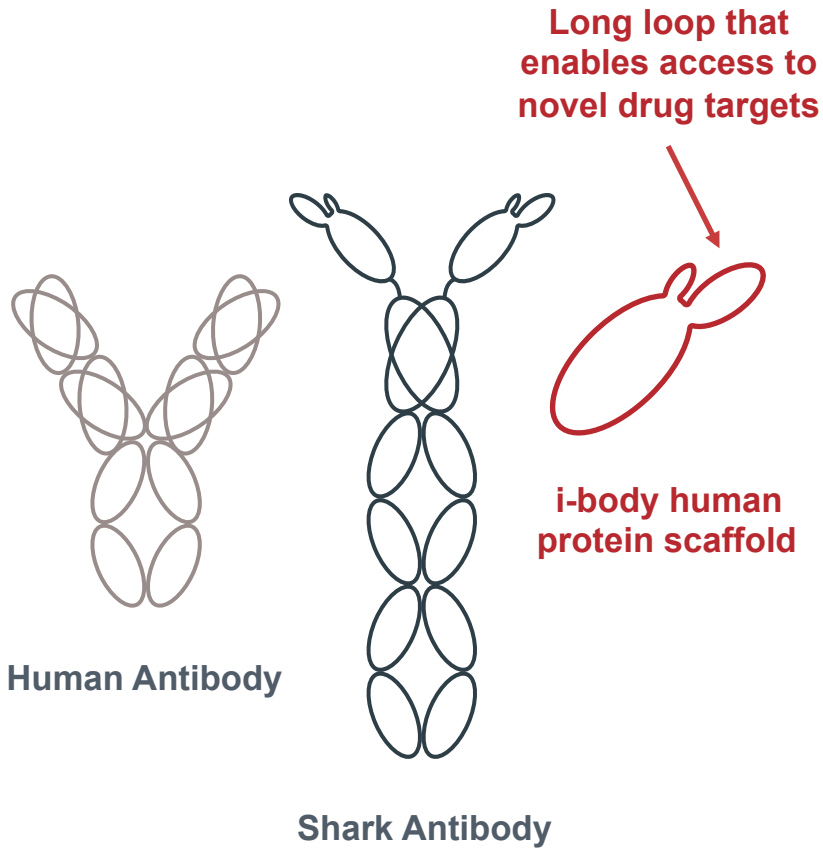
i-body technology

AdAlta is developing a new technology platform that produces unique proteins known as i-bodies, that mimic the shape of shark antibody binding domain and engineers their key stability features into a human protein, for therapeutic intervention in disease.

The single domain antigen binding region of shark antibodies is extremely stable and has a long binding loop not present in either human or next generation antibodies.

Advantages of i-bodies

- High target specificity and high affinity for their target
- Small proteins; 10% the size of a typical human antibody
- Highly stable to proteases, high temperatures and low pH
- Long loop that can bind to a diverse range of therapeutically relevant targets including those that are difficult for current antibody therapies
- **Human protein** – reduced risk of immune response



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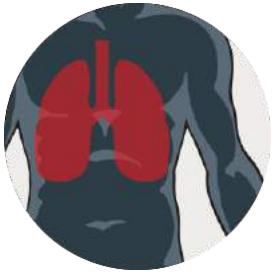
AD-114 lead program in Idiopathic Pulmonary Fibrosis (IPF)

- AD-114 is lead i-body candidate in pre-clinical development
  - Demonstrates both anti-fibrotic and anti-inflammatory activity in the lung
  - Important for arresting and modifying the disease and tackling the treatment of idiopathic pulmonary fibrosis (IPF); this is the primary indication



Lung

IPF

Idiopathic Pulmonary Fibrosis
A chronic, highly lethal and rare disease.
50-70% mortality rate
>135,000 people in US alone
World wide sales ~$4.2B by 2020

Source: Evaluate Pharma, Orphan Drug Report 2015

CXCR4 and idiopathic pulmonary fibrosis (IPF)

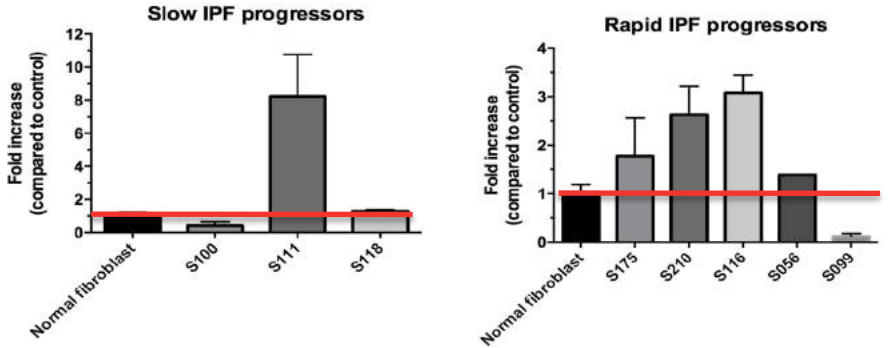
Patients that rapidly progress express more CXCR4 compared to slow IPF progressors

CXCR4 +ve cells (fibrocytes) significantly elevated in stable IPF patients, and further increased during acute exacerbations

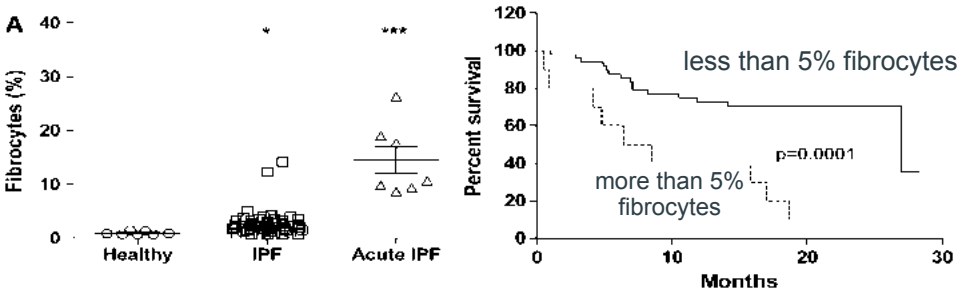
Fibrocytes not correlated with lung function but an independent predictor of early mortality

- 7.5 months with more than 5% fibrocytes
- 27 months with less than 5% fibrocytes

CXCR4 expression increased in fast progressing IPF patient tissue



Fibrocyte numbers predict mortality



REF: Moeller, et al. Am J Respir Crit Care Med Vol 179. pp 588–594, 2009

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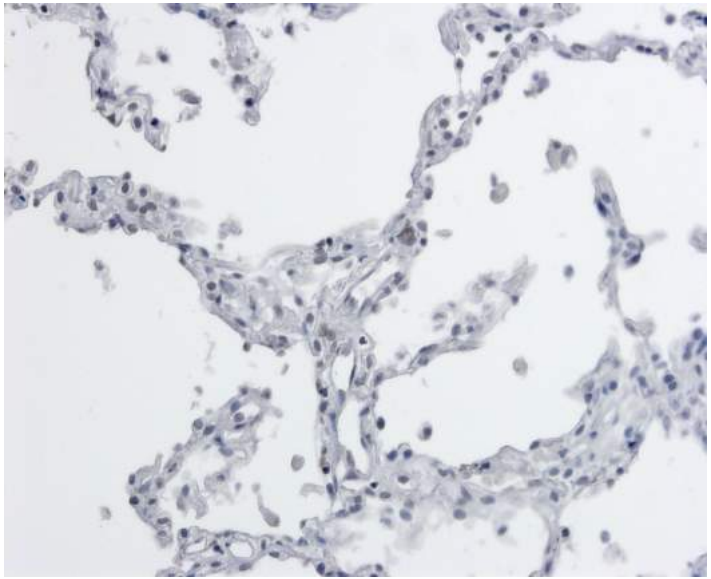
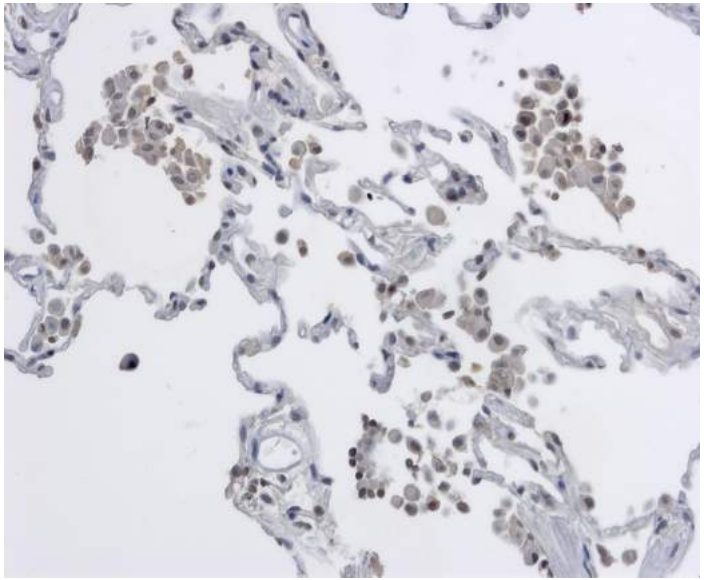
AD-114 binds to lung tissue from patients with fibrosis

AD-114 was used for Immunohistochemical (IHC) staining of normal and diseased lung tissues to verify expression of CXCR4 *in situ*



AD-114 does not bind lung tissue from normal lungs



AD-114 binds to lung tissue from lungs with fibrosis

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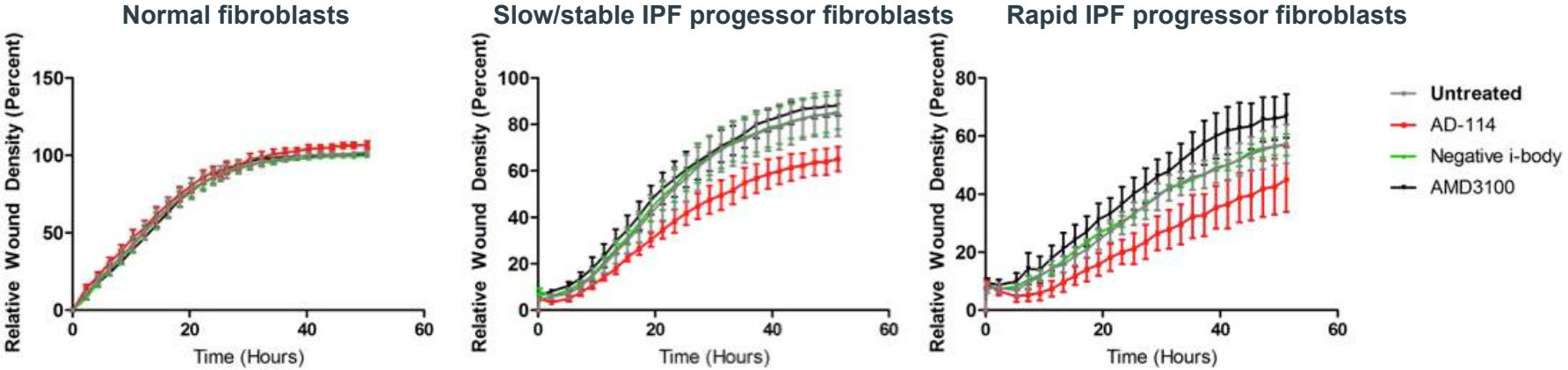
Migration/invasion specifically reduced with IPF lung fibroblasts

AD-114 specifically inhibited migration of slow and rapid IPF fibroblast migration but did not have any effect on normal fibroblasts.

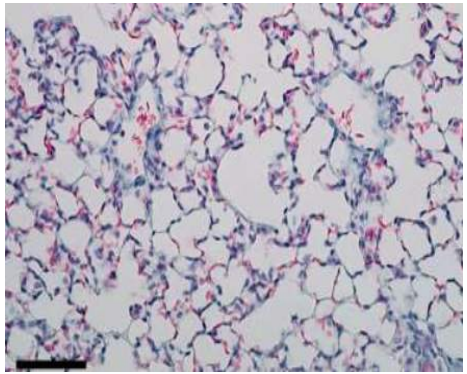
AD-114 has greater *in vitro* efficacy compared to the only approved therapies Nintedanib and Pirfenidone for IPF treatment.

MIGRATION	No effect on normal fibroblasts	Inhibits slow IPF progressors	Inhibits fast IPF progressors
i-body AD-114	✔	✔	✔
Nintedanib (Boehringer)	✗	✔	✔
Pirfenidone (Roche)	✔	✗	✗
Other CXCR4 drug (Sanofi)	✔	✗	✗

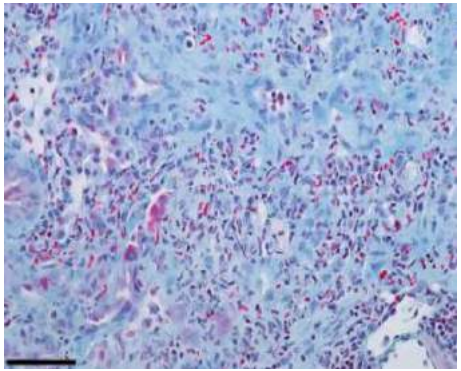


AD-114 prevents fibrosis in Bleomycin-induced mouse model of lung fibrosis

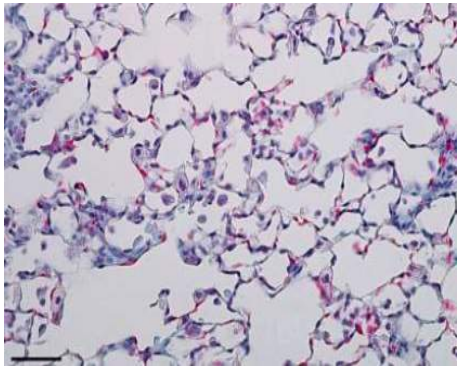
Prophylactic or Preventative setting



Normal lung tissue



IPF lung tissue
(lung disease mouse model)



IPF lung tissue + AD-114 dosed for 21 days
(lung disease mouse model)

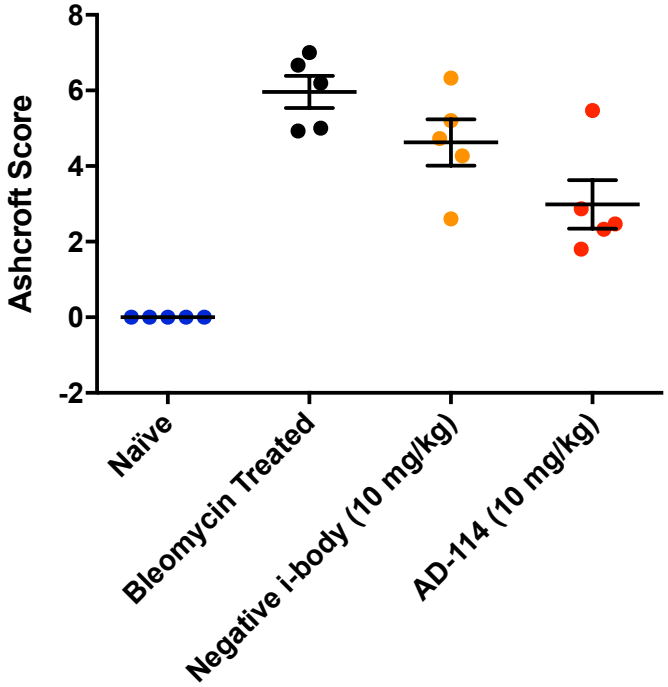
AD-114 reduces collagen content and inflammatory cell infiltration in the Bleomycin mouse model and demonstrates a similar architecture to that of the normal lung

AD-114 prevents fibrosis in Bleomycin-induced mouse model of lung fibrosis

Prophylactic or Preventative setting

- AD-114 significantly reduced the Ashcroft score compared to the Bleomycin treated mice

- The negative i-body at the same dose as AD-114 had no effect on preventing fibrosis



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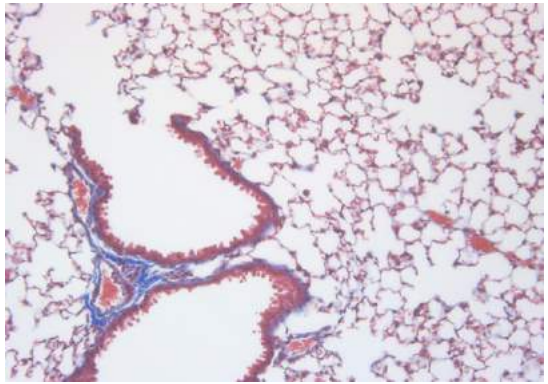
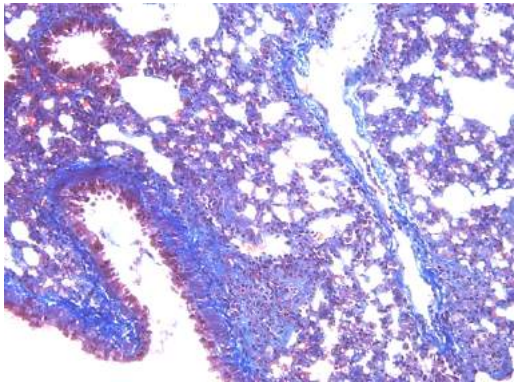
AD-114 prevents fibrosis in Bleomycin-induced mouse model of lung fibrosis

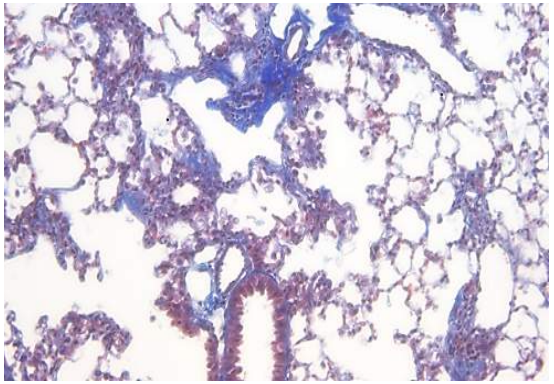
Therapeutic setting



Normal lung tissue



IPF lung tissue
(lung disease mouse model)



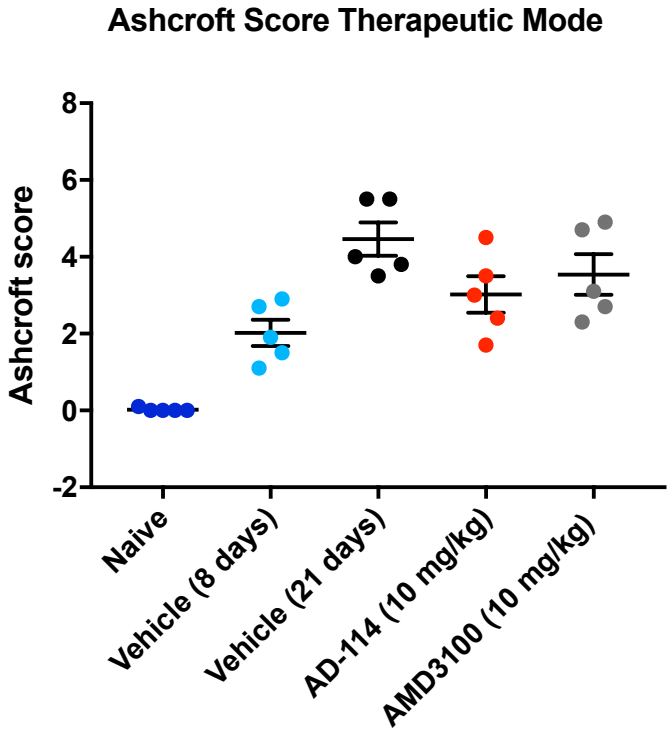
IPF lung tissue + AD-114 dosed for 13 days
(dosing started at day 8 in lung disease model)

AD-114 reduces collagen content and inflammatory cell infiltration in the Bleomycin mouse model and demonstrates a similar architecture to that of the normal lung

AD-114 prevents fibrosis in Bleomycin-induced mouse model of lung fibrosis

Therapeutic setting

- AD-114 significantly reduced the Ashcroft score compared to the Bleomycin treated mice
- AMD3100 (CXCR4 antagonist) also reduced the the Ashcroft score compared to the Bleomycin treated mice



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AD-114 and non-alcoholic steatohepatitis (NASH)

- Non-alcoholic steatohepatitis (NASH) is a pandemic, metabolic disease which has both inflammatory and fibrotic components
- AD-114 is lead i-body candidate in pre-clinical development
  - Demonstrates both anti-fibrotic and anti-inflammatory activity in the liver
  - Important for arresting and modifying the disease and tackling the treatment of NASH

Liver

NASH & CIRRHOSIS

NASH

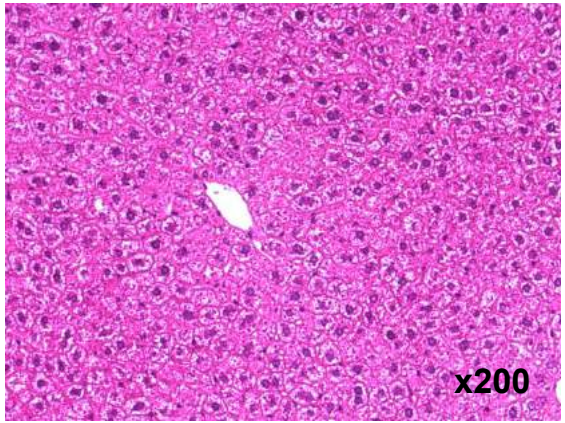
A chronic disease with high levels of morbidity and mortality

About 3-5% of adults in the United States have NASH

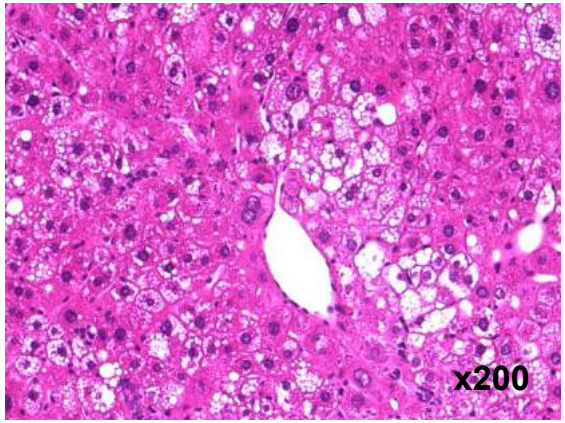
Sales of drugs for the treatment of fibrosis caused by NASH are estimated to be US$1.6 billion by 2020.

AD-114 prevents fibrosis in a mouse model of liver fibrosis

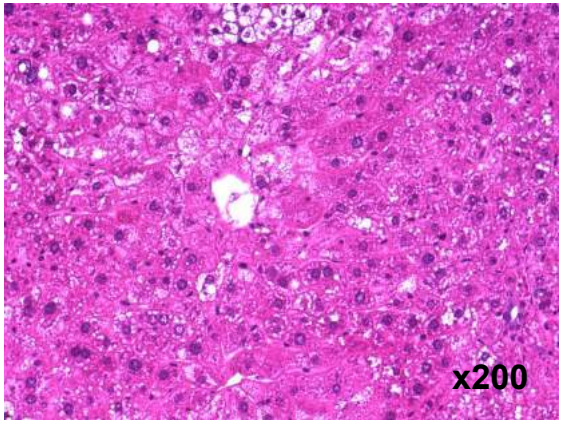
Therapeutic setting



Normal liver tissue



NASH liver tissue
(liver disease mouse model)



NASH liver tissue + AD-114 dosed for 21 days
(liver disease mouse model)

AD-114 significantly reduces hepatocellular ballooning, a key feature required for the diagnosis of NASH

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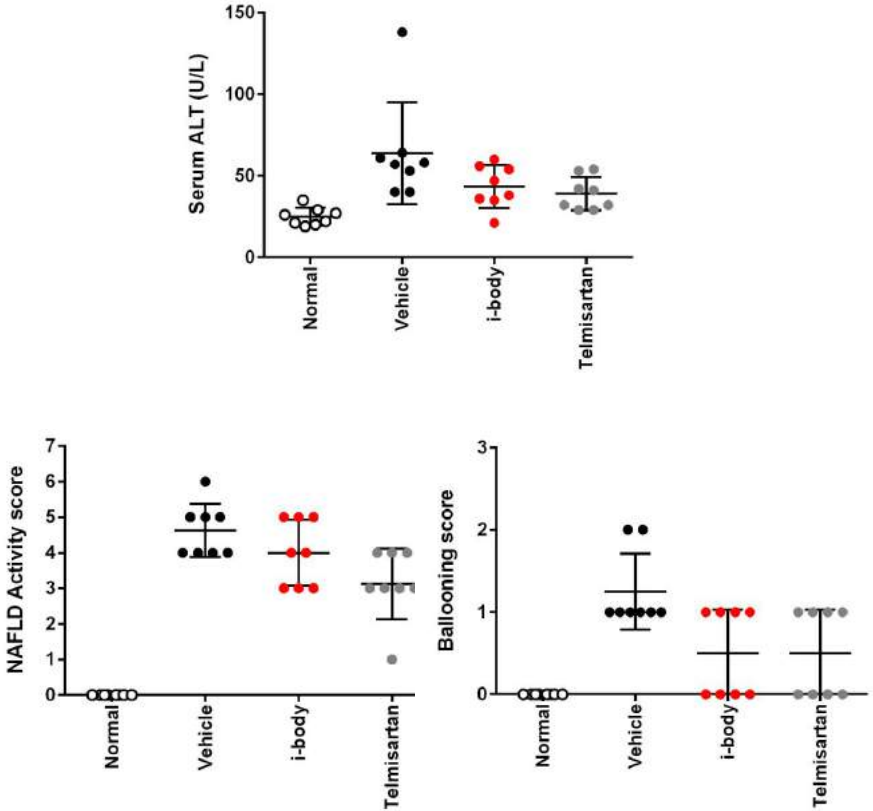
AD-114 prevents fibrosis in a mouse model of liver fibrosis

- AD-114 decreased serum ALT levels and non-alcoholic fatty liver disease (NAFLD) score compared with the vehicle or disease model group
- The improvement in serum ALT levels suggests that i-body ameliorated hepatocellular injury and inflammation preventing progression of disease
- Hepatocyte ballooning was significantly decreased compared with the vehicle or diseased group
- AD-114 possess hepatoprotective and anti-NASH effects



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AD-114 and eye fibrosis

- Infections or inflammation in the eye result in impairment of visual function and can ultimately lead to fibrosis. Complications from common eye diseases that can result in fibrosis occur in age related macular degeneration (AMD) and diabetic retinopathy.
- AD-114 is lead i-body candidate in pre-clinical development
  - Demonstrates both anti-fibrotic and anti-leakage activity in the eye
  - Important for arresting and modifying the disease and tackling the treatment of eye fibrosis

Eye

Wet-AMD & PVR

Eye Fibrosis

AMD is the commonest cause of severe visual impairment in people over the age of 50 years in the developed world

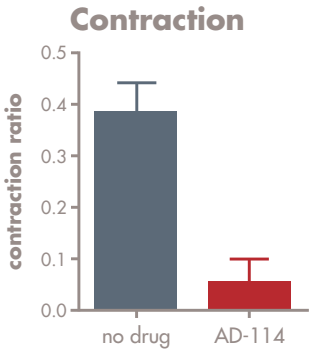
>1m in AU and 2m in USA with AMD

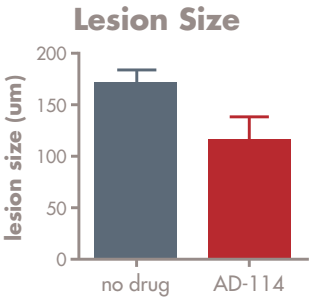
Market research estimates that the market size for AMD will be over US$10 billion by 2023 while the market size for diabetic retinopathy will be US$10 billion in 2022.

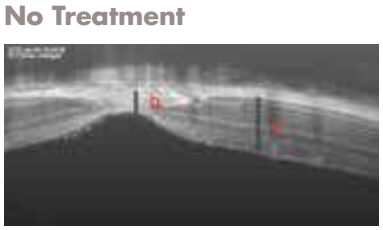
AD-114 prevents eye fibrosis

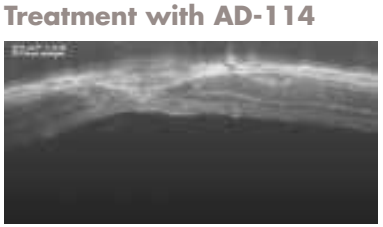
- Mouse chorodial neo-vascularization model(CNV): laser burn to the retina
  - Induces subretinal haemorrhage
  - Contraction of retinal tissue
  - Alteration in microglia and glial response
  - Alteration in gene expression
- IVT injection of single dose of i-body
  - Improves retinal retraction and reduces lesion size
  - Fibrosis gene expression reduced

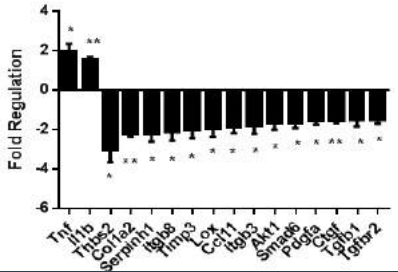
AD-114 reduces contraction and lesion size in eye fibrosis mouse model











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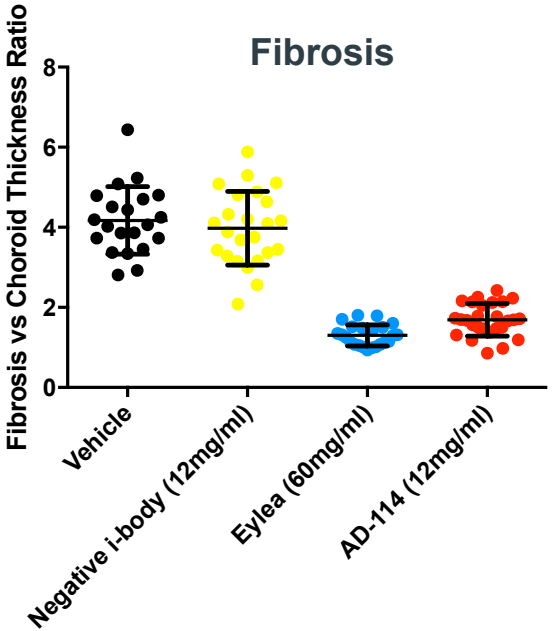
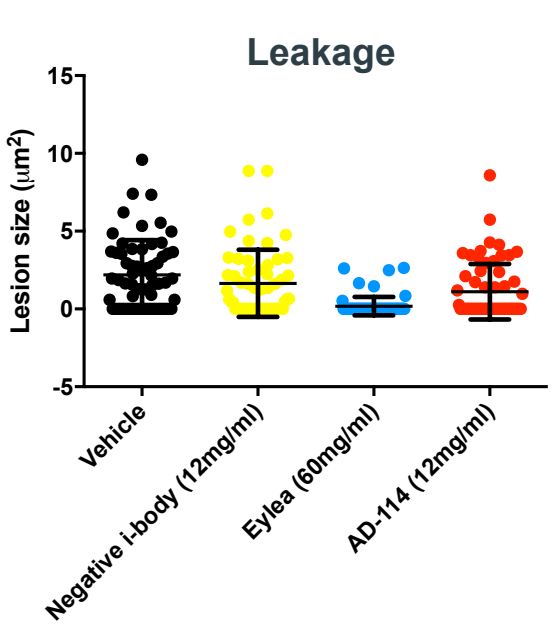
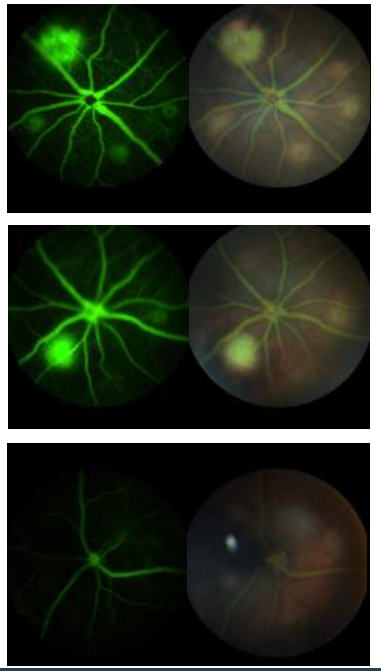
AD-114 reduces lesion size and number

- AD-114 is able to reduce the number and size of the lesion in both preventative and therapeutic models of wet-AMD (CNV)
- AD-114 is able to significantly reduce fibrosis as measured by trichrome staining in both preventative and therapeutic models of wet-AMD (CNV)







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AdAlta summary

- **Powerful proprietary technology platform to develop a pipeline of i-bodies for the treatment of a wide range of human diseases**
  - Extreme stability of i-body similar to single domain shark antibody
  - Long loop of i-body binds deep in GPCR pocket and has functional activity
- **Advanced lead candidate AD-114 with significant pre-clinical validation**
  - has specificity for diseased human tissue with effects only shown on IPF tissue and no effects displayed on normal lung tissue nor any evidence of off target effects;
  - is more effective than existing IPF approved drugs showing greater *in vitro* efficacy compared to the only approved therapies Nintedanib and Pirfenidone;
  - demonstrates both anti-fibrotic and anti-inflammatory effects in multiple animal models in multiple areas of fibrosis; and
  - is a novel mechanism of action for fibrosis making AD-114 a potential “first in class” therapy.

Pulmonary fibrosis – current state of play in Idiopathic Pulmonary Fibrosis

A/Prof Glen Westall

Lung Fibrosis Service, Alfred Hospital

NHMRC Centre of Research Excellence: Lung Fibrosis

A/Prof Glen Westall

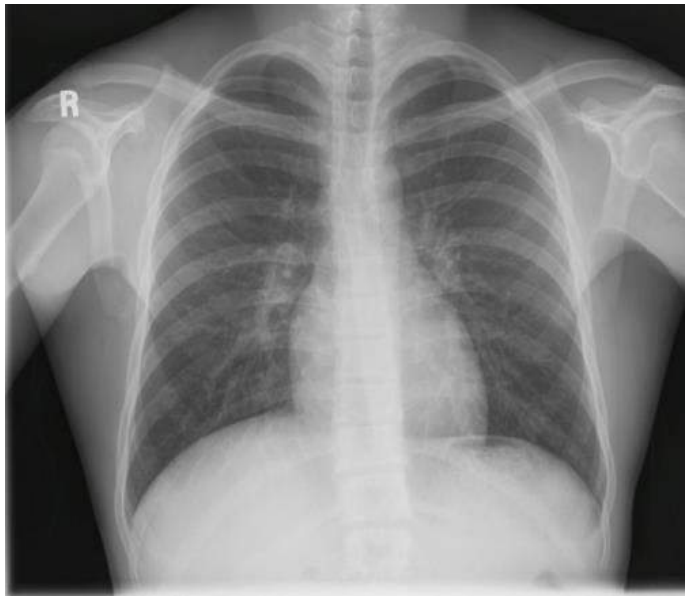
- Dr Glen Westall received his undergraduate medical training at King's College Medical School in London, UK, before training in general and respiratory medicine at the Royal Brompton Hospital in London and the Alfred Hospital in Melbourne. His clinical interests include advanced lung disease, bronchoscopy and lung transplantation. He is physician-in-charge of the Paediatric Lung Transplant program at the Alfred.
- Glen's research interests parallel his clinical expertise in advanced lung disease and lung transplantation. He has subsequently developed a wider interest into how activation of the innate immune system early post-lung transplant influences clinical outcomes. Establishing a research platform in pulmonary xenotransplantation has resulted in the award of an internationally competitive Career Development Award. Clinically, Glen is a principal and co-investigator on numerous studies in lung transplantation and bronchoscopic lung volume reduction.

Lung Fibrosis

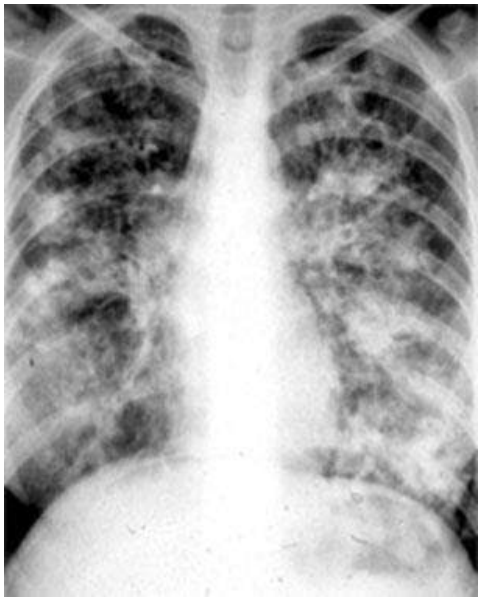
Scaring of the Lung

Lungs become stiff

Lungs shrink in size

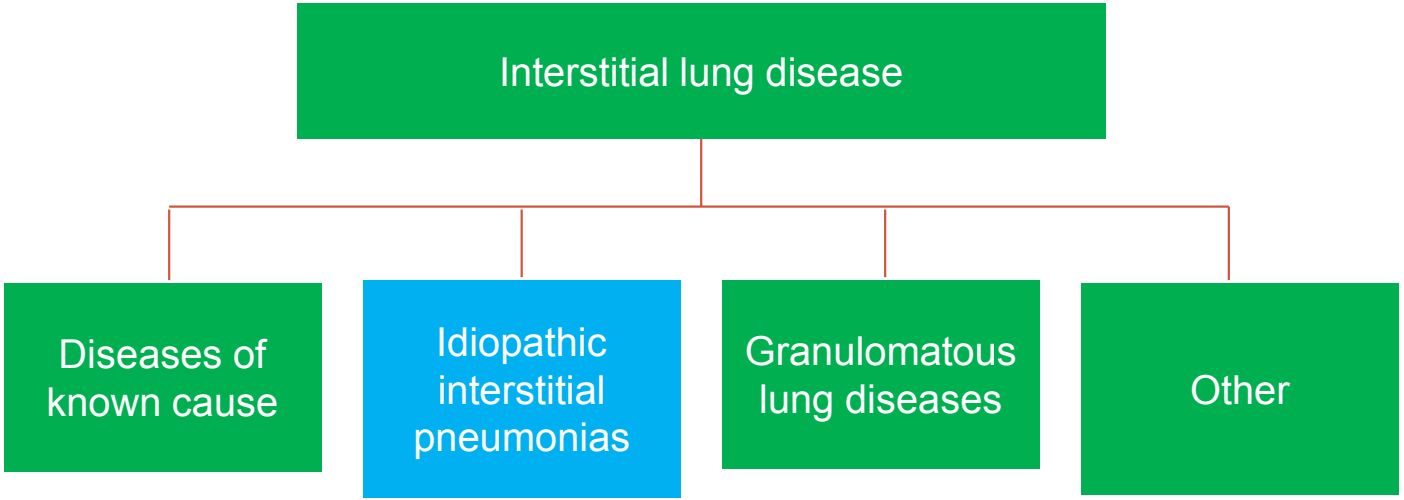


Normal CXR



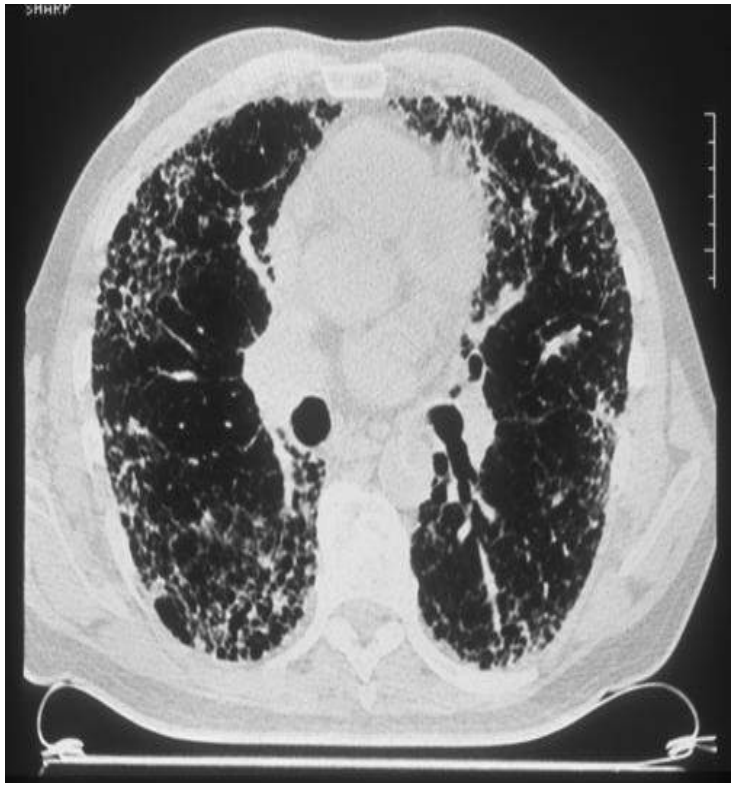
Lung Fibrosis

Interstitial lung disease (ILD) classification



Multiple subtypes – over 200 types of disorder in total!

Idiopathic Pulmonary Fibrosis (IPF)



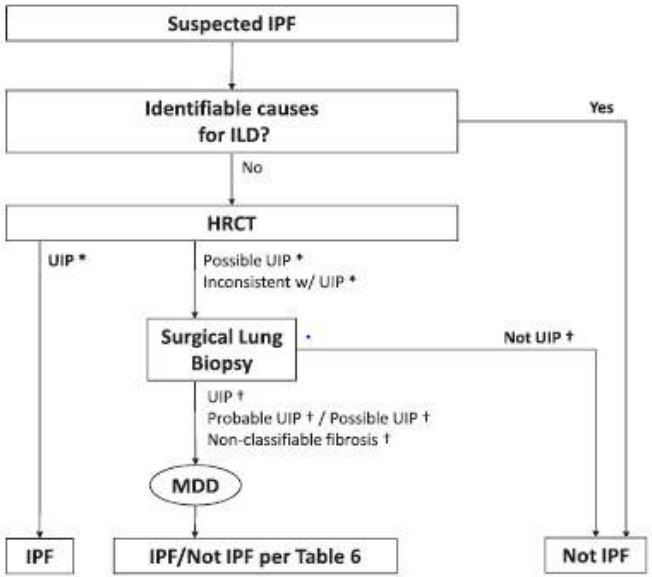
Represents 50% of all Fibrotic Lung Conditions

Male:Female	1.5:1
Age of Presentation	66 yrs
Smoking history	70%
Australian IPF Cases	5000-10,000

Diagnosed by MDT Meeting

IPF Diagnosis: Multi-Disciplinary Team (MDT) meeting

- Communication between clinician, radiologist and when appropriate pathologist
- Clinical data
  - Presentation, Exposures, Smoking status, Associated disease, Lung function and Radiologic findings



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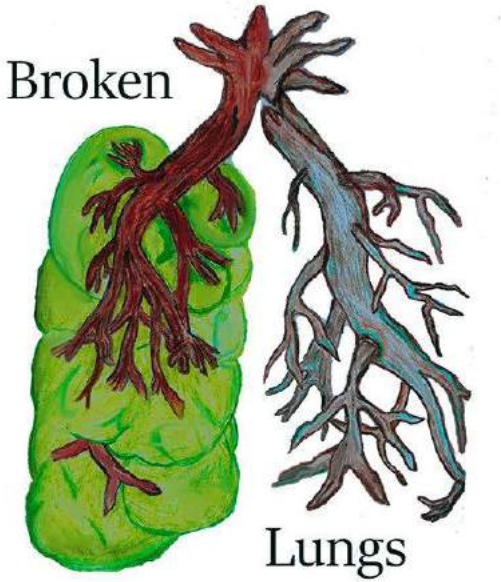
Traditional Therapy for IPF: historical view

- Uncontrolled Chronic Inflammation
  - Corticosteroids
  - Cyclophosphamide
  - Azathioprine

  - N-acetylcysteine (NAC)



2011 Evidence Based Guidelines: Treatment recommendations

Agent	For	Against
Corticosteroids		**Strong +**
Colchicine		**Strong +**
Cyclosporine A		**Strong +**
Corticosteroid and imm-mod		**Strong ++**
Interferon gamma		**Strong ++++**
Bosentan		**Strong +++**
Etanercept		**Strong +++**
NAC, predisolone, azathioprine		**Weak ++**
NAC monotherapy		**Weak ++**
Anticoagulation		**Weak +**
Pirfenidone		**Weak ++**

Raghu et al. Am J Respir Crit Care Med Vol 183. pp 788–824, 2011

2011 Evidence Based Guidelines: Treatment recommendations

Agent	For	Against
Corticosteroids		**Strong +**
Colchicine		**Strong +**
Cyclosporine A		**Strong +**
Corticosteroid and imm-mod		**Strong ++**
Interferon gamma		**Strong ++++**
Bosentan		**Strong +++**
Etanercept		**Strong +++**
NAC, predisolone, azathioprine		**Weak ++**
NAC monotherapy		**Weak ++**
Anticoagulation		**Weak +**
Pirfenidone		**Weak ++**

Raghu et al. Am J Respir Crit Care Med Vol 183. pp 788–824, 2011

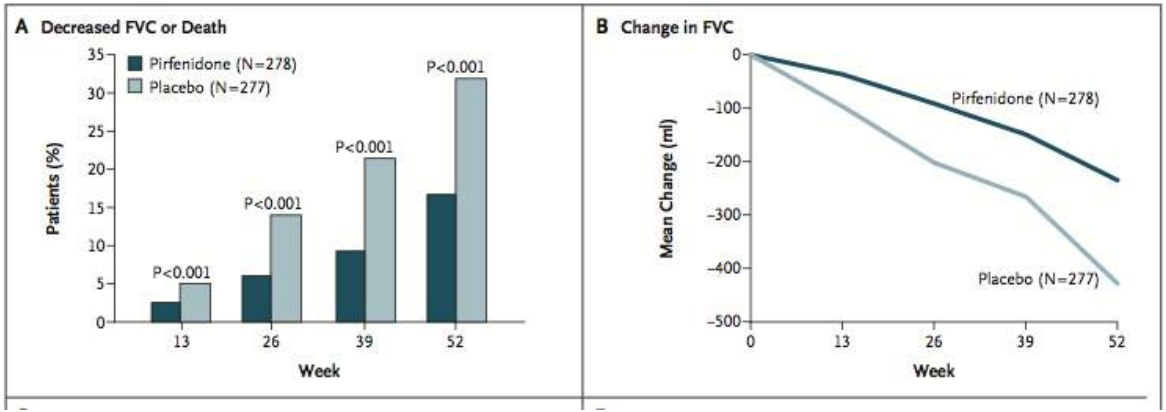
2014: A big year for lung fibrosis!

Pirfenidone approved by FDA

Roche

InterMune® Leader in IPF

Reduction in mortality and decreased FVC



47% reduction in proportion of patients with a decline in FVC

Pooled data: Ascend & Capacity studies

All cause mortality ↓ 48%

IPF deaths ↓ 68%

NEJM 2014; 370: 2083

Adverse Events

Table 3. Adverse Events.*

Adverse Event	Pirfenidone (N=278)	Placebo (N=277)
	no. of patients (%)	
Cough	70 (25.2)	82 (29.6)
Nausea	100 (36.0)	37 (13.4)
Headache	72 (25.9)	64 (23.1)
Diarrhea	62 (22.3)	60 (21.7)
Upper respiratory tract infection	61 (21.9)	56 (20.2)
Fatigue	58 (20.9)	48 (17.3)
Rash	78 (28.1)	24 (8.7)
Dyspnea	41 (14.7)	49 (17.7)
Dizziness	49 (17.6)	36 (13.0)
Idiopathic pulmonary fibrosis†	26 (9.4)	50 (18.1)
Bronchitis	39 (14.0)	36 (13.0)
Constipation	32 (11.5)	38 (13.7)
Back pain	30 (10.8)	37 (13.4)
Dyspepsia	49 (17.6)	17 (6.1)
Nasopharyngitis	33 (11.9)	30 (10.8)
Anorexia	44 (15.8)	18 (6.5)
Vomiting	36 (12.9)	24 (8.7)
Decrease in weight	35 (12.6)	22 (7.9)
Gastroesophageal reflux	33 (11.9)	18 (6.5)
Insomnia	31 (11.2)	18 (6.5)

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2014: A big year for lung fibrosis!

Nintedanib approved by FDA

Boehringer Ingelheim

Reduction in mortality and decreased FVC

Adverse Events

Intracellular inhibitor of multiple tyrosine kinases

NB: Not curative

Secondary end points not achieved

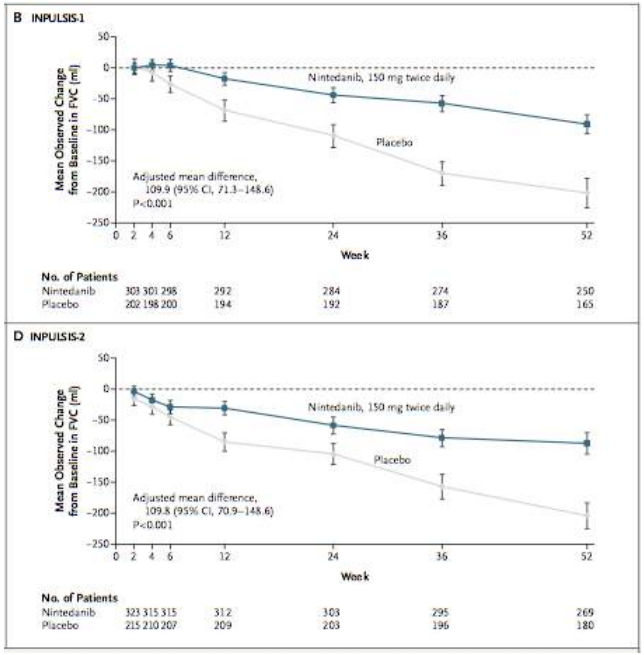


Table 3. Adverse Events.

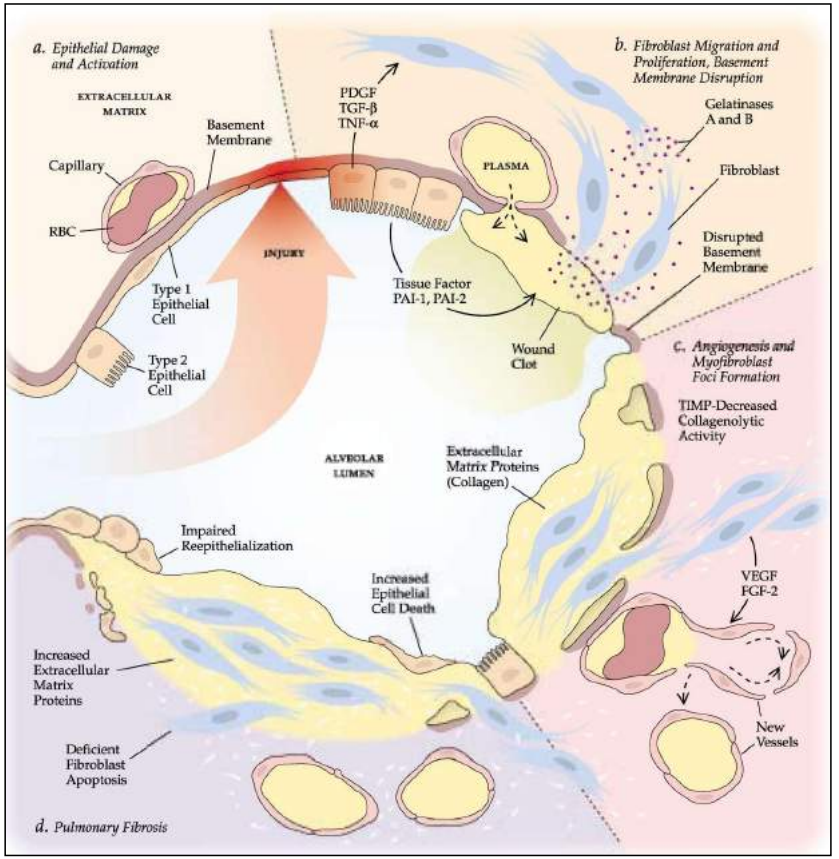
Event	INPULSIS-1		INPULSIS-2	
	Nintedanib (N=309)	Placebo (N=204)	Nintedanib (N=329)	Placebo (N=219)
	number of patients (percent)			
Any adverse event	298 (96.4)	181 (88.7)	311 (94.5)	198 (90.4)
Any adverse event, excluding progression of idiopathic pulmonary fibrosis*	296 (95.8)	179 (87.7)	311 (94.5)	197 (90.0)
Most frequent adverse events†				
Diarrhea	190 (61.5)	38 (18.6)	208 (63.2)	40 (18.3)
Nausea	70 (22.7)	12 (5.9)	86 (26.1)	16 (7.3)
Nasopharyngitis	39 (12.6)	34 (16.7)	48 (14.6)	34 (15.5)
Cough	47 (15.2)	26 (12.7)	38 (11.6)	31 (14.2)
Progression of idiopathic pulmonary fibrosis*	31 (10.0)	21 (10.3)	33 (10.0)	40 (18.3)
Bronchitis	36 (11.7)	28 (13.7)	31 (9.4)	17 (7.8)
Upper respiratory tract infection	28 (9.1)	18 (8.8)	30 (9.1)	24 (11.0)
Dyspnea	22 (7.1)	23 (11.3)	27 (8.2)	25 (11.4)
Decreased appetite	26 (8.4)	14 (6.9)	42 (12.8)	10 (4.6)
Vomiting	40 (12.9)	4 (2.0)	34 (10.3)	7 (3.2)
Weight loss	25 (8.1)	13 (6.4)	37 (11.2)	2 (0.9)
Severe adverse events‡	81 (26.2)	37 (18.1)	93 (28.3)	62 (28.3)
Serious adverse events‡	96 (31.1)	55 (27.0)	98 (29.8)	72 (32.9)
Fatal adverse events	12 (3.9)	10 (4.9)	25 (7.6)	21 (9.6)
Adverse events leading to treatment discontinuation§	65 (21.0)	22 (10.8)	58 (17.6)	33 (15.1)
Gastrointestinal disorders	26 (8.4)	3 (1.5)	21 (6.4)	2 (0.9)
Respiratory, thoracic, and mediastinal disorders	12 (3.9)	10 (4.9)	8 (2.4)	18 (8.2)
Investigation results¶	10 (3.2)	1 (0.5)	8 (2.4)	1 (0.5)
Cardiac disorders	5 (1.6)	4 (2.0)	2 (0.6)	3 (1.4)
General disorders and conditions involving site of study-drug administration‖	8 (2.6)	3 (1.5)	2 (0.6)	1 (0.5)

Study discontinuation 5%

AdAlta

Unmet clinical need: drugs in development

- Current drugs have limited efficacy and substantial side effects
- Other anti-fibrotic and anti-angiogenic agents currently in development with multiple targets
  - Inhaled Pirfenidone
  - WNT signaling
  - FG-3019
  - Zileutin
  - ACE inhibitors
  - Anti-vβ6 integrin
  - Anti-IL13
  - Anti-IL13/IL4
  - Imatanib
  - LOXL-2



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Clinical trials.gov

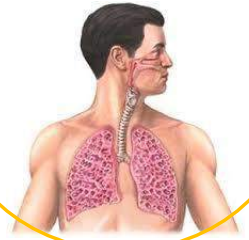
Phase 1	Dasatinib (oral Bcr-Abl TK inhibitor, BMS) + Quercetin
	Vismodegib (hedgehog signalling pathway) + perfinidone (Genentech, Roche)
	CC-90001 (Celgene, JNK inhibitor)
	Mesenchymal stem cells
Phase 2	Rituximab
	Tipelukast (medicnova)
	STX-100 ($\alpha v\beta 6$ integrin inhibitor, Biogen)
	GBT440 (oxygen carrying capacity, Global blood therapeutics)
	KD0125 (ROCK2 signalling inhibitor, Kardmon)
	Lebrikizumab and perfinidone (Roche)
	GLPG1690 (autotaxin inhibitor)
Phase 3	Bactrim
	Cyclophosphamide (acute exacerbations)
	Nintedanib and sildenafil (BI)
	Perfinidone and sildenafil (Roche)
	ART-123 (acute exacerbations) thrombomodilin
Phase 4	perfinidone + nintedanib

Drug Discovery and translational research

In-vitro science

Animal model

Human IPF Tissue



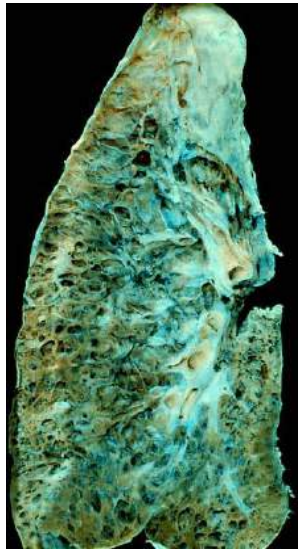
Clinical Trials

Assessment of human IPF tissue provides additional evidence of efficacy prior to clinical trials

AdAlta

Alfred Tissue Bank

- National resource
- Collaborations (Academic and Commercial entity)
- Creation of pilot data
- Conduit: Alfred Lung Transplant Program (n=90)

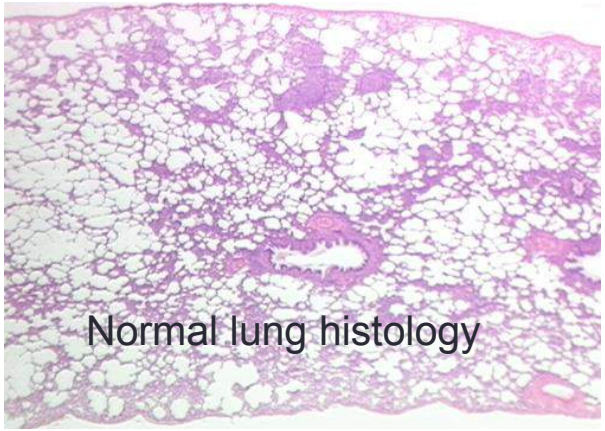


→ ***ILD Explant Lungs***

→ ***Normal Lungs donated for research (Donate Life)***

CXCR4 Role in IPF

Very limited expression in normal or non-diseased tissues



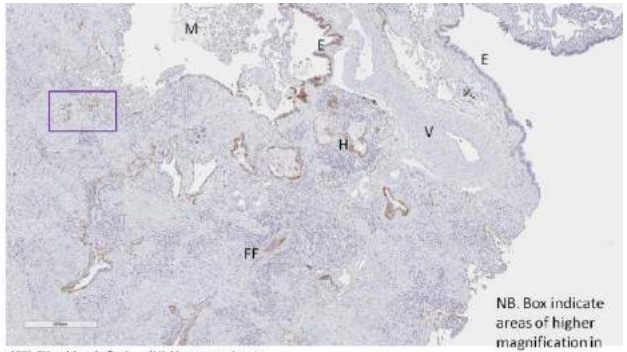
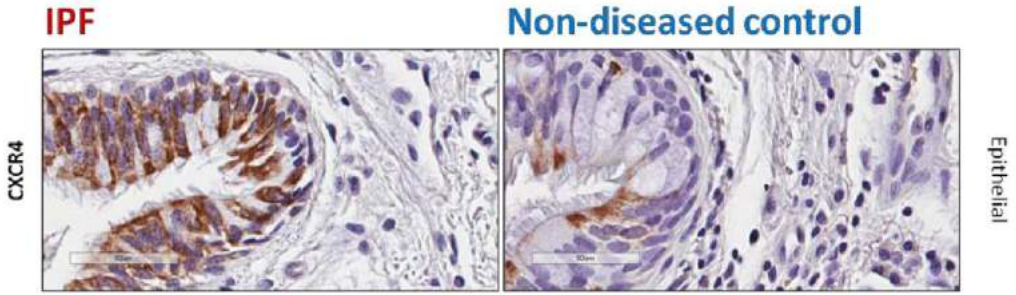


Figure 5. Immunohistochemical staining of IPF lung tissue for CXCR4 (brown). 8x magnification, scale bars are 500 µm.

CXCR4 is upregulated in IPF tissue



AdAlta

Summary

- Increasing understanding of the pathophysiology
- Treatments (albeit limited)
- Many Lung Fibrosis services/clinics

Need better therapies for a terminal disease!!

AdAlta

Renal fibrosis and chronic kidney disease

Novel therapeutic targets for kidney fibrosis

Professor Muh Geot Wong

Royal North Shore Hospital, University of Sydney Australia

George Institute for Global Health

Dr Muh Geot Wong

- Dr Wong is Renal Physician at the Royal North Shore hospital, Sydney, Australia. He is also a senior research fellow at the George Institute of Global Health and a senior clinical lecturer at the University of Sydney. His PhD entitled “Novel therapeutic options in models of nephropathy” was awarded in 2011.
- His main area of research is in understanding the pathomechanisms of kidney tubulointerstitial fibrosis and biomarkers in predicting progression of chronic kidney disease particularly in diabetic kidney disease.
- **DISCLOSURES**
  - Speaker fees; Astra Zeneca
  - The George Institute for Global Health holds research contracts for trials in cardiovascular and/or kidney disease with several organization including Boehringer Ingelheim, Merck, AbbVie, Roche, AstraZeneca, Servier, Astellas, Baxter, BMS, GSK, Janssen and Pfizer

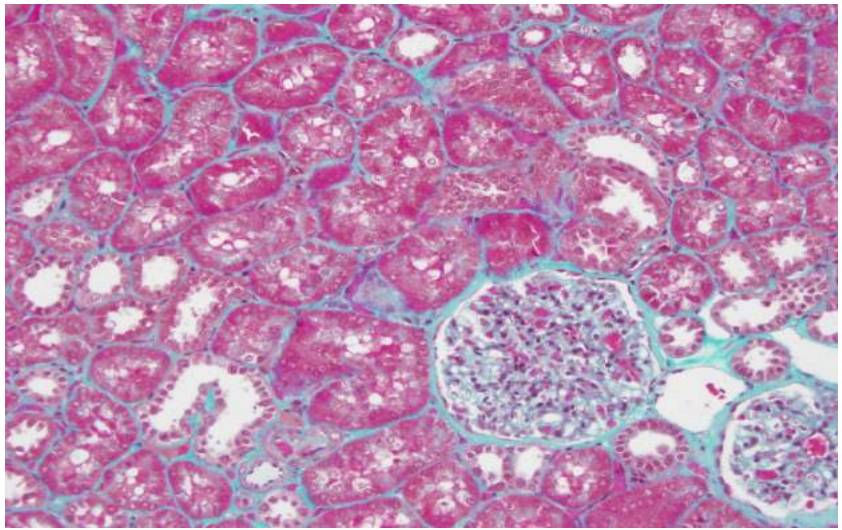
Overview

- Residual risk of standard of care
- Mechanism of kidney fibrosis
- Novel therapies for kidney fibrosis
- Global market potential

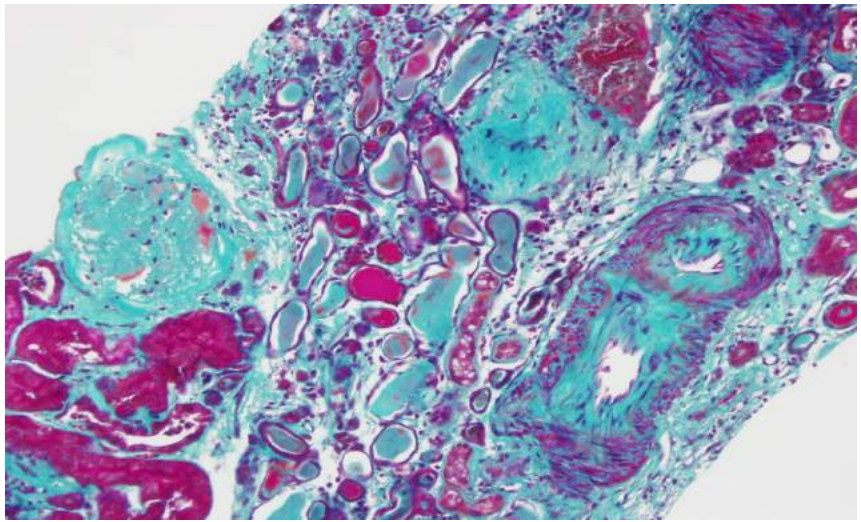
AdAlta

Kidney Fibrosis

Kidney or renal fibrosis is seen in virtually all progressive kidney diseases including diabetic nephropathy, allograft nephropathy or aging



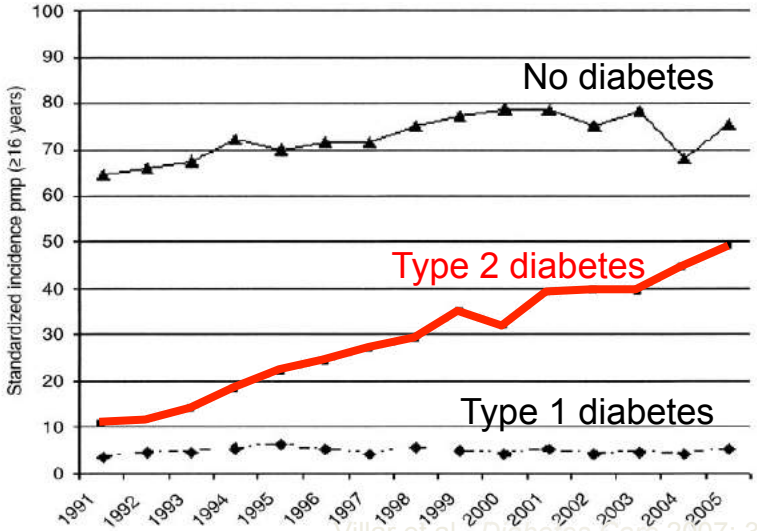
Normal Kidney



CKD

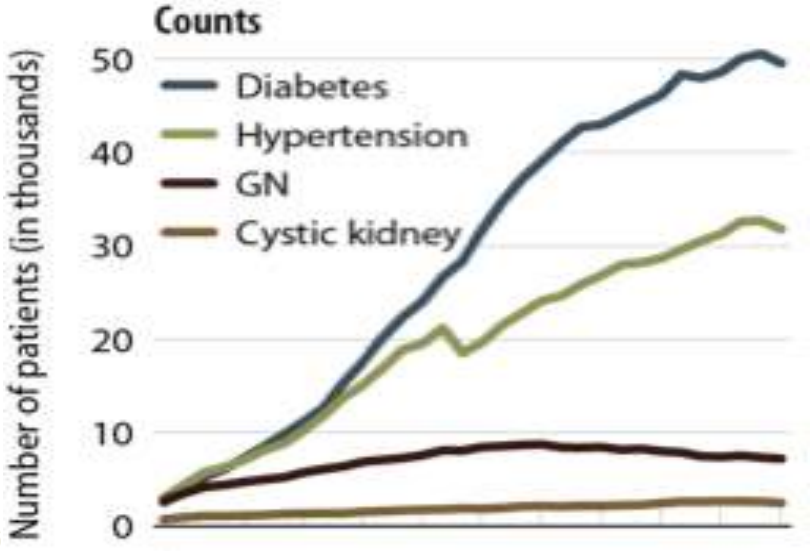
Causes of end stage kidney disease over time

AUSTRALIA

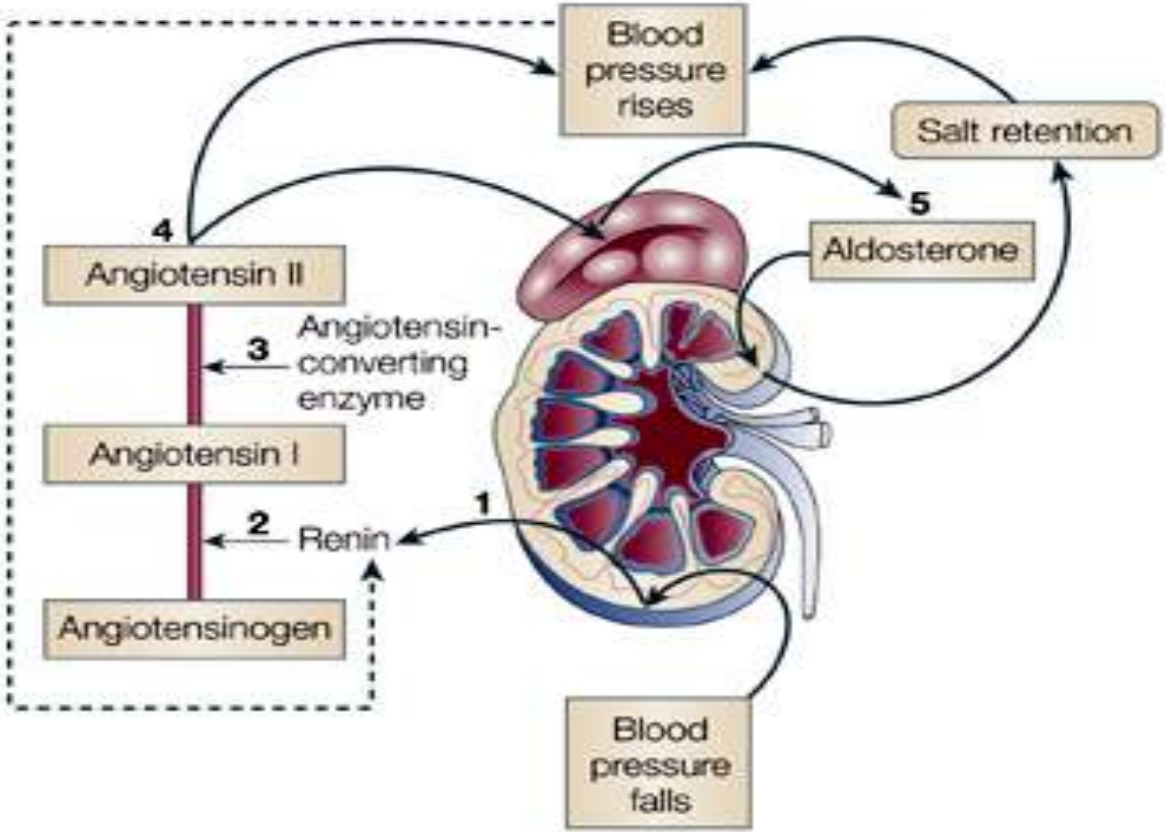


Villar et al.; *Diabetes Care* 2007; 30: 3070-6

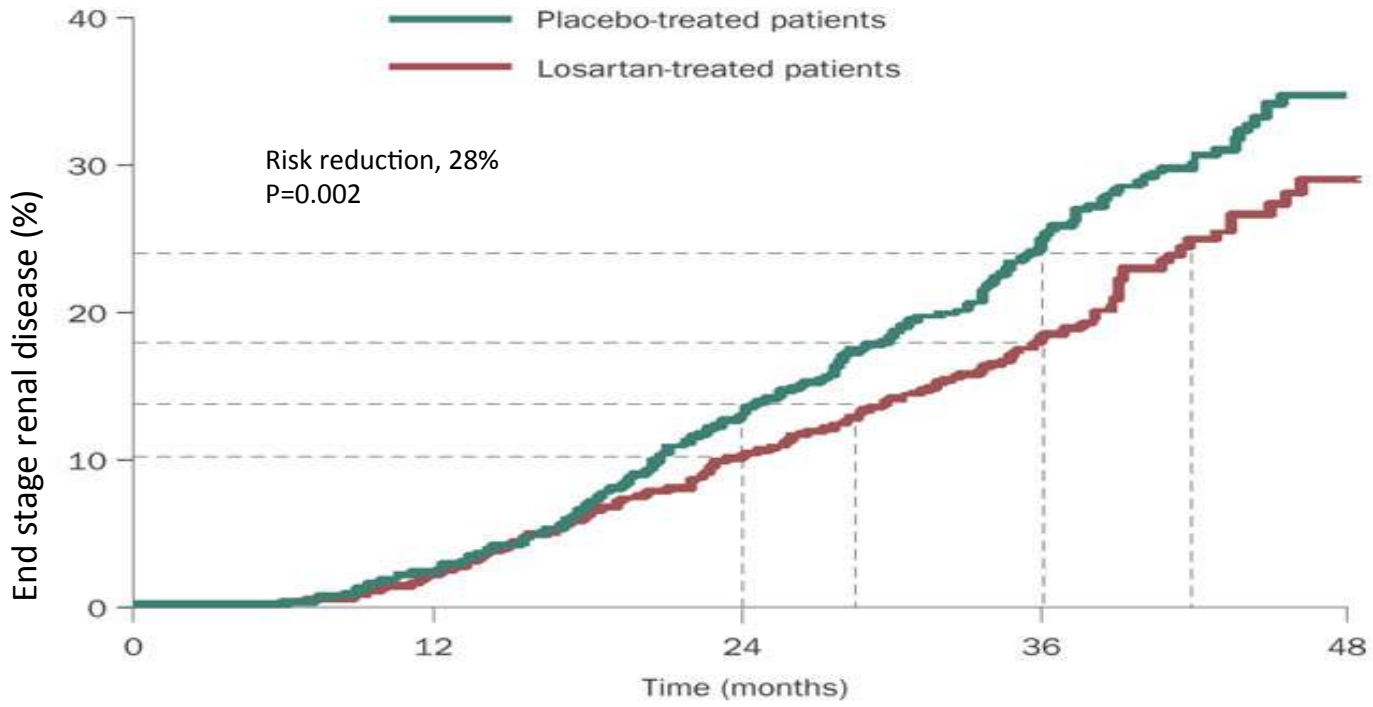
USA



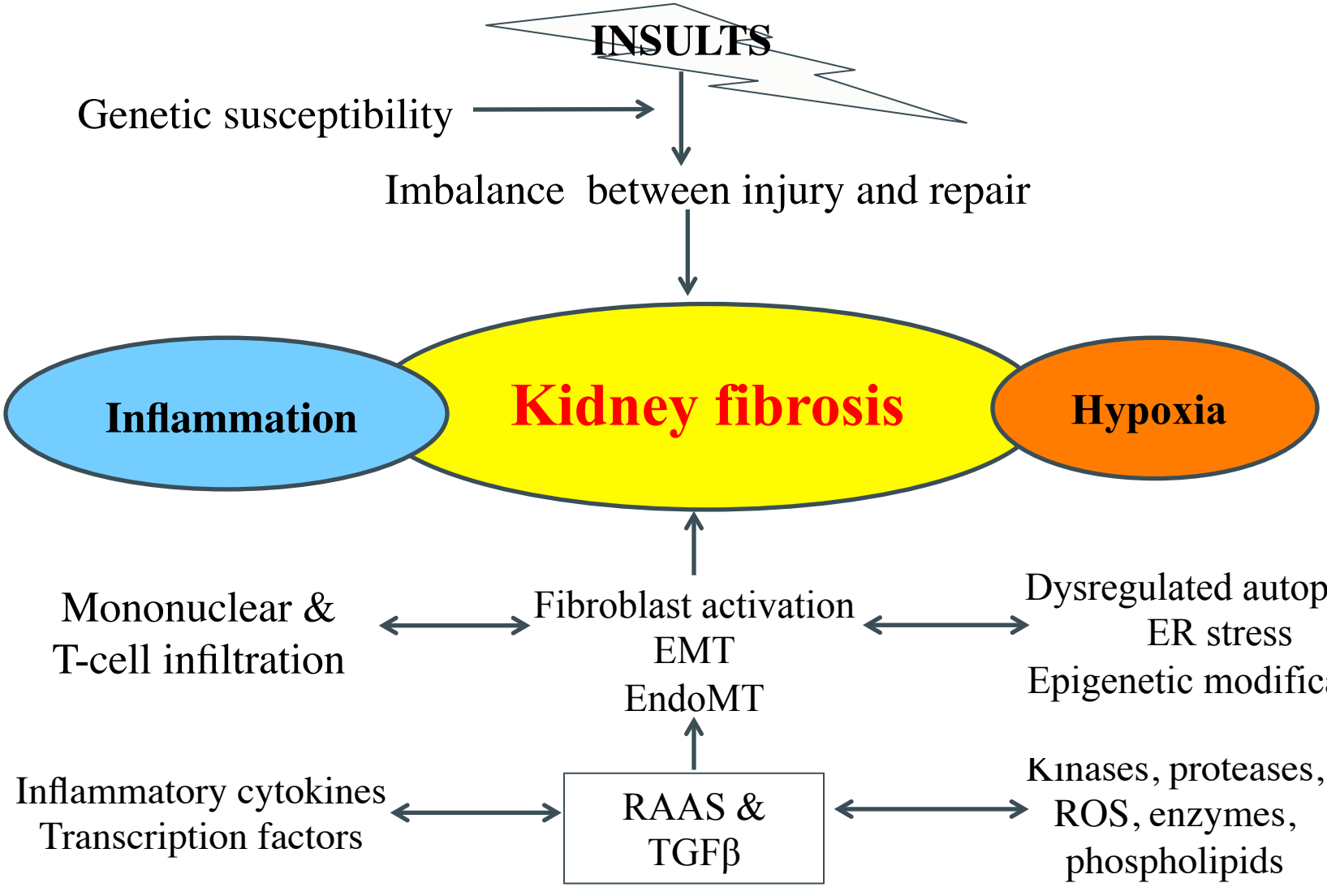
Renin Angiotensin Aldosterone system



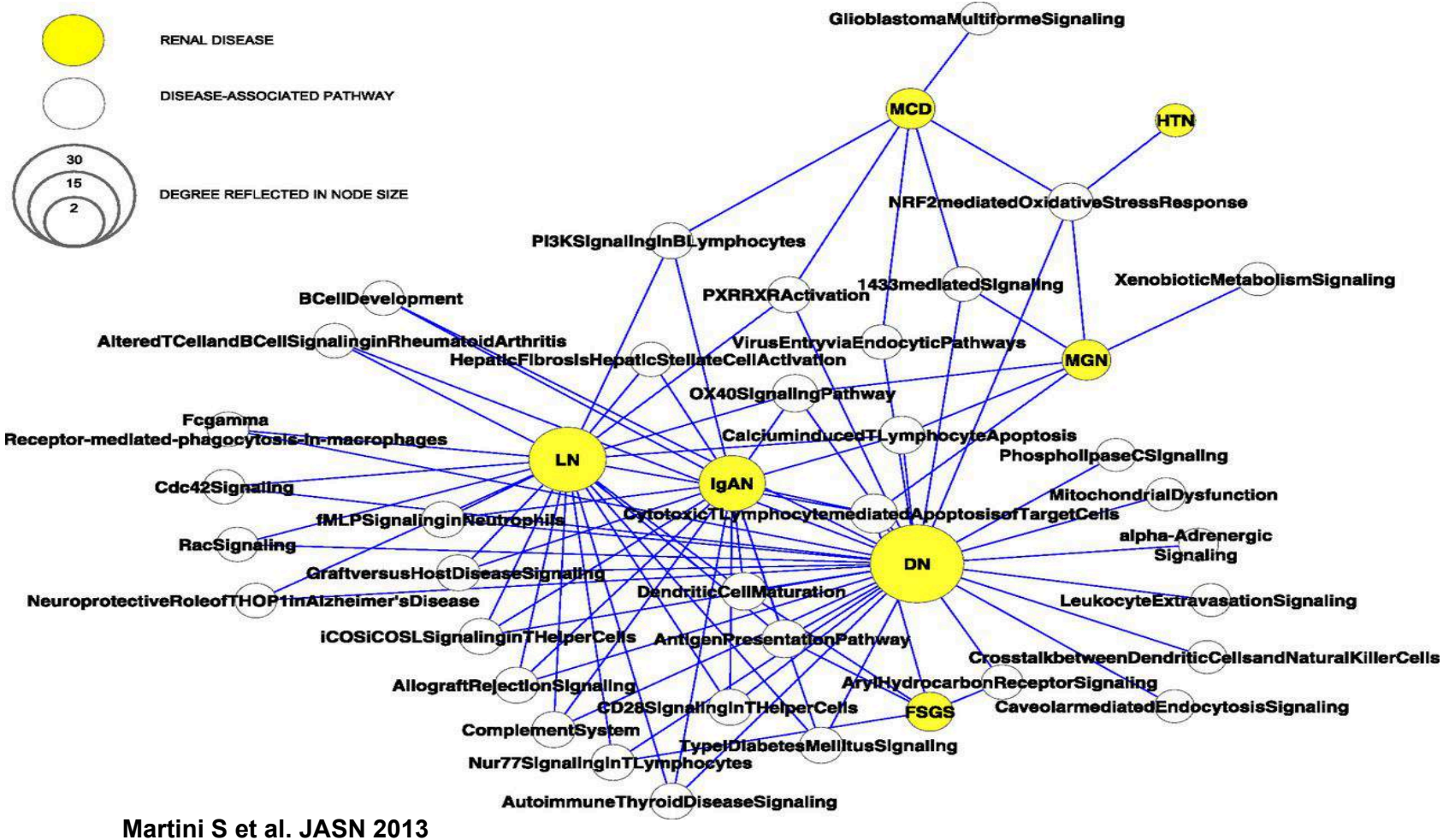
Residual risk of end stage renal disease on conventional therapy



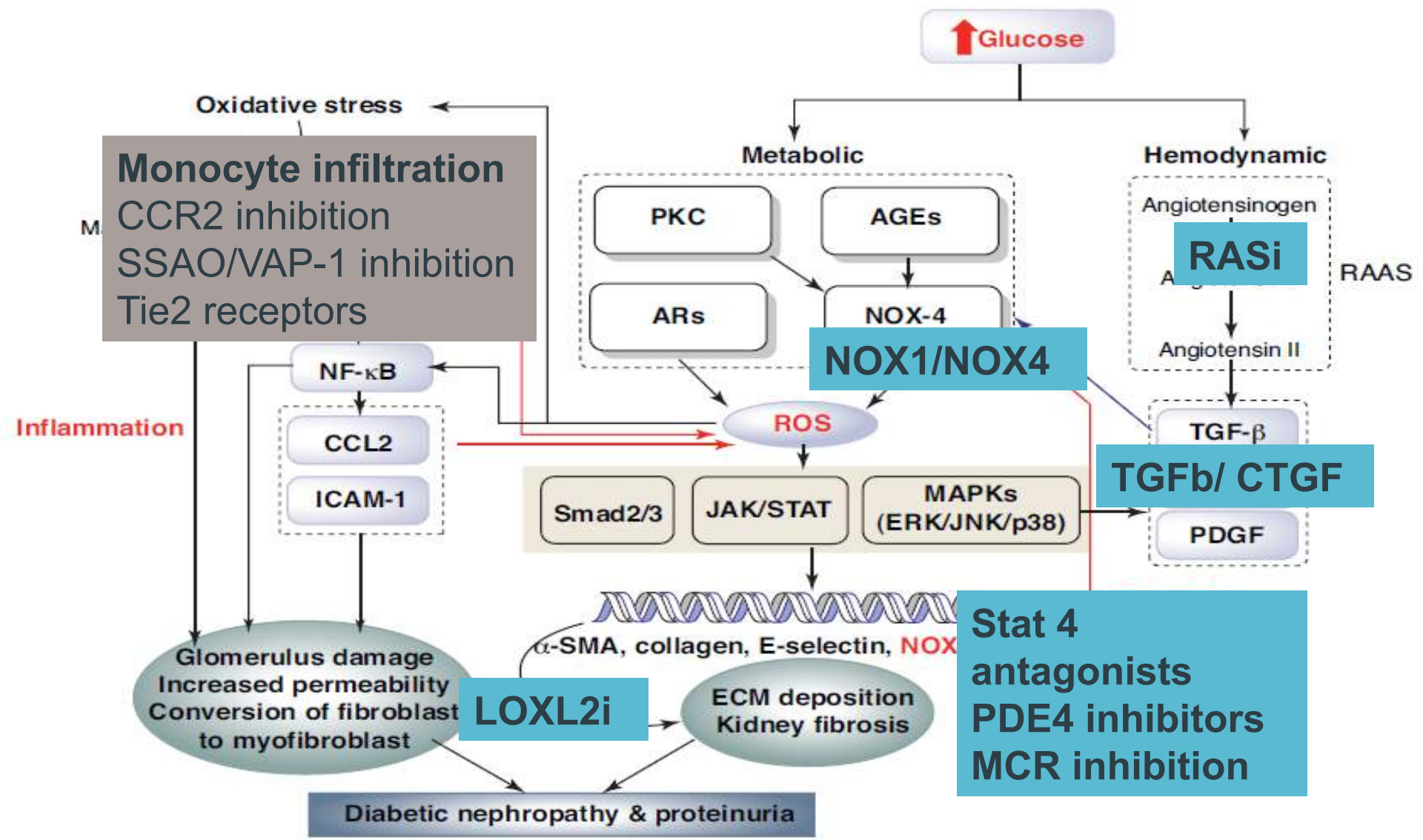
Brenner B, et al. N Engl J Med 2001
Vilayur et al.Nat Rev Nephrol (2009)


INSULTS
Genetic susceptibility
Imbalance between injury and repair
Inflammation
Kidney fibrosis
Hypoxia
Mononuclear &
T-cell infiltration
Fibroblast activation
EMT
EndoMT
Dysregulated autophagy
ER stress
Epigenetic modification
Inflammatory cytokines
Transcription factors
RAAS &
TGFβ
Kınases, proteases,
ROS, enzymes,
phospholipids

Chronic kidney disease associated pathways are shared between renal diseases



Martini S et al. JASN 2013



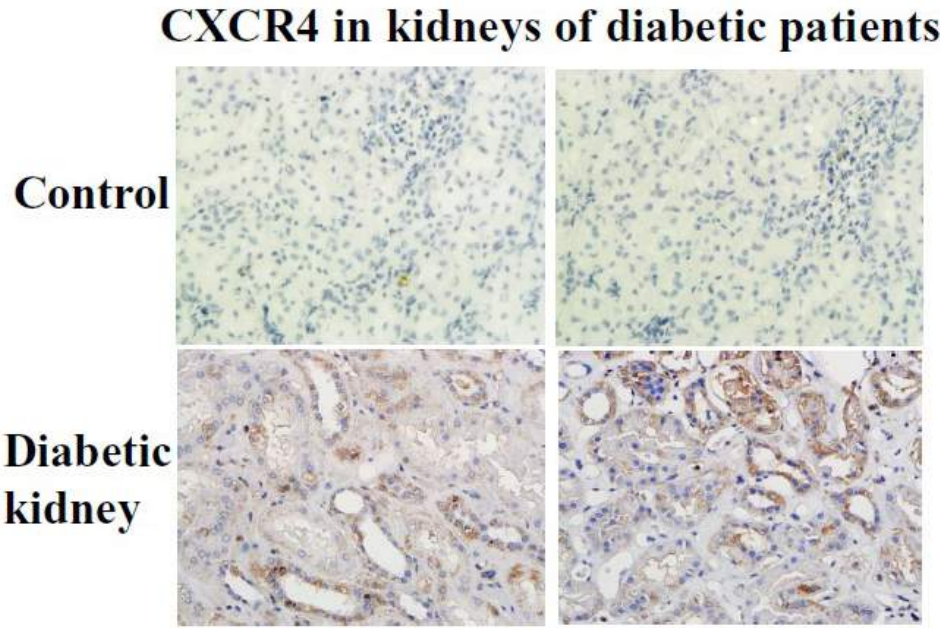
Drug Discovery Today. March 2015

Novel therapies and status

- Anti TGFB antibody (LY2382770): Negative Study
- Pirfenidone: Study withdrawn
- Nox1/4 inhibitor: negative trial
- Tranilast and analogues FT011: In Phase 1b Clinical Trial
- Anti-CTGF Antibodies FG3019: Studies terminated
- CCR2/MCP1 inhibition: Larger clinical trial with hard renal endpoints needed
- SSAO/ VAP1 inhibitors: Phase 1 Clinical Trial concluded. ? Results
- Tie2Rec activator: angiopoietin receptor, tyrosine kinase inhibitor - in development
- JAK-STAT inhibitors: in development
- LOX inhibitors: in development
- CXCR4 and AdAlta's i-body?

CXCR4 promising therapeutic strategy for treatment of kidney fibrosis

- CXCR4 expression was increased in disease state compared with normal tissue
- Collaboration between Kolling Renal Research and AdAlta i-body technology in exploring CXCR4 as therapeutic strategy to prevent the development of fibrosis



Challenges for clinical trial in CKD/Fibrosis

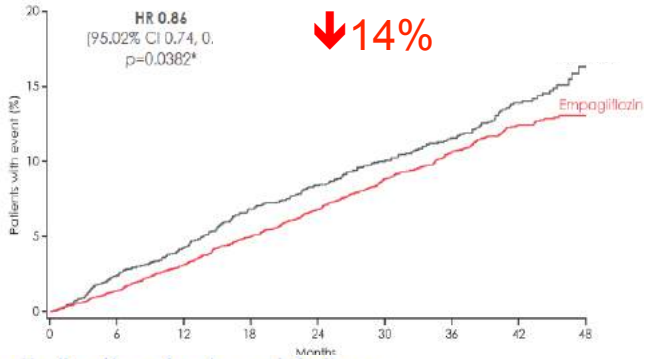
- Patients with CKD usually excluded from major trial
- Lack of intermediate endpoints/ biomarkers that regulatory agencies will accept for approval
- High trial failure rate
- Lack of coordination between scientists, investors, clinical trialists, pharma companies, regulatory authorities, policy makers and governments to develop novel strategies.

AdAlta

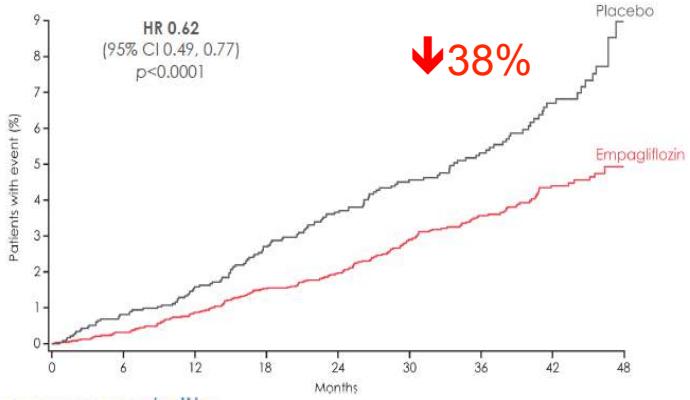
EMPA-REG

Zinman et al. N Eng J Med Sept 17 2015

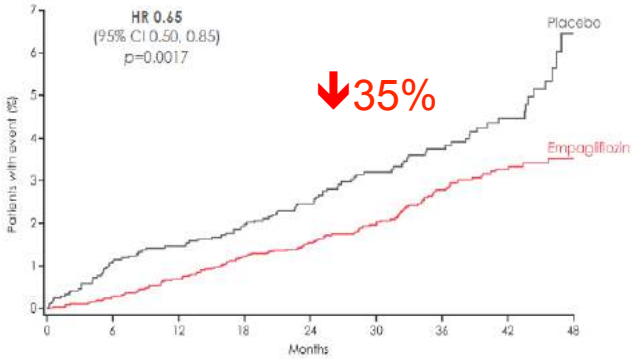
Primary outcome: 3-point MACE



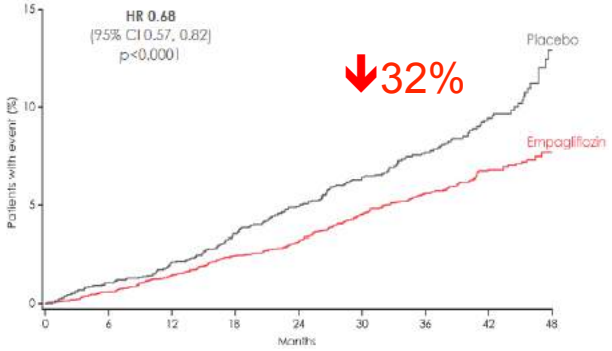
CV death



Hospitalisation for heart failure



All-cause mortality

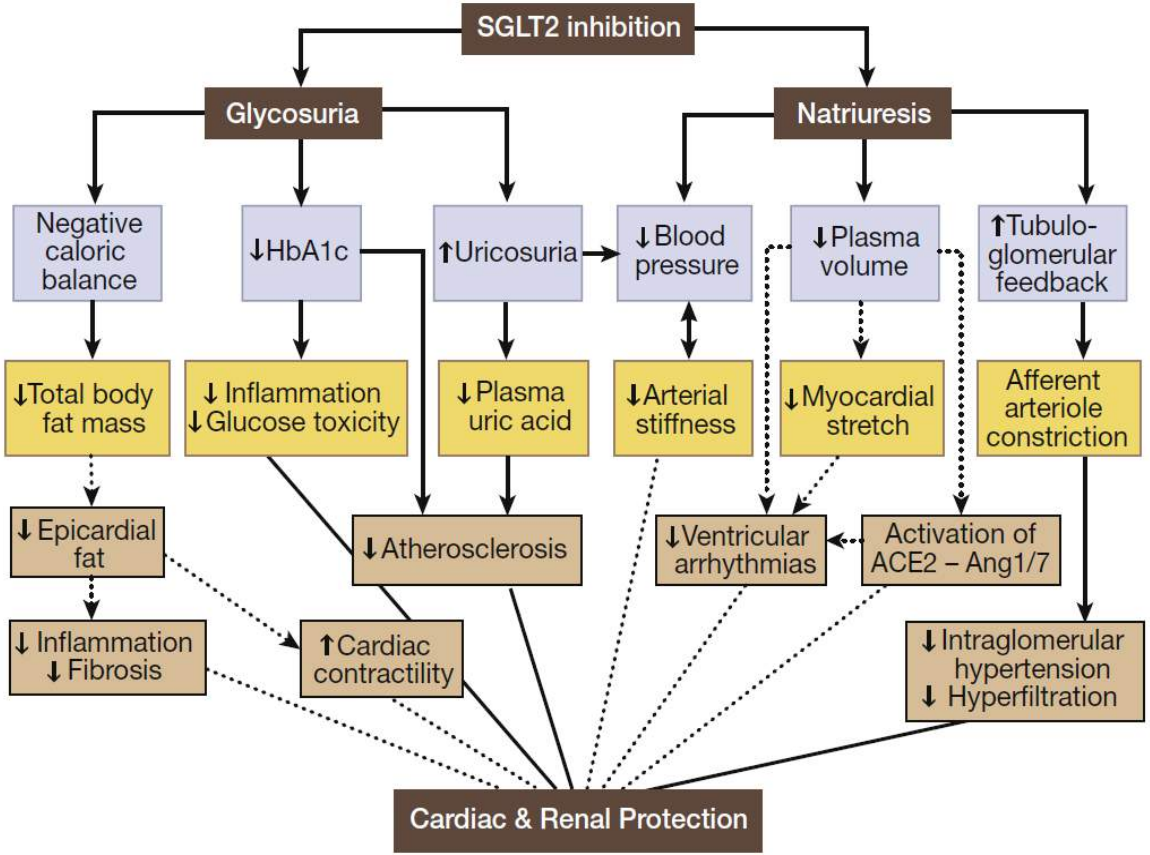


Effects of empagliflozin on renal outcomes

	Hazard ratio	95% Ci	p value
Incident/worsening of nephropathy	0.61	0.53 – 0.70	<0.001
New onset macroalbuminuria	0.62	0.54 - 0.72	<0.0001
Doubling creatinine or ESKD	0.54	0.40 - 0.75	0.0002
Doubling of serum creatinine	0.56	0.39 - 0.79	0.0009
ESKD	0.45	0.21 - 0.97	0.04

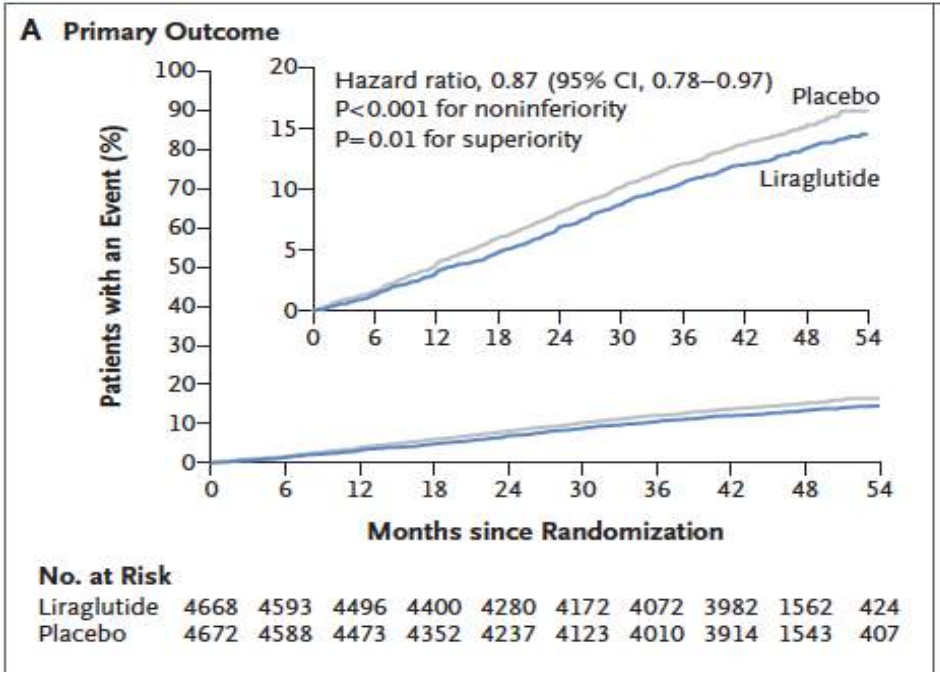
The impact of empagliflozin on the primary end-point was not diminished in patients with CKD compared to those without it (MACE HR 0.88, CV death HR 0.78, heart failure HR 0.59, all-cause mortality HR 0.80).

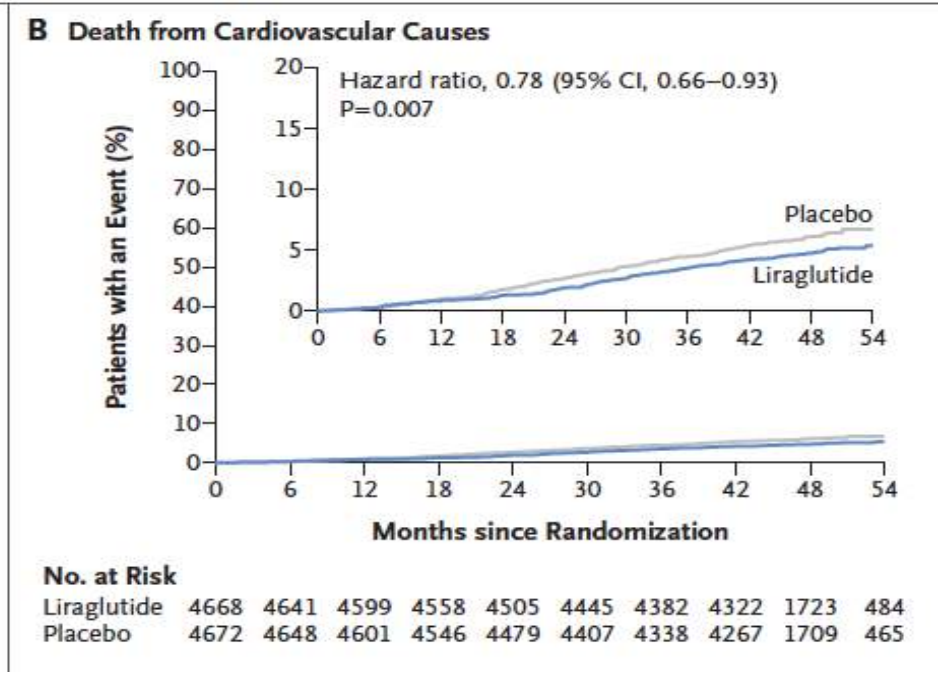
SGLT2 inhibition: glycosuria and natriuresis



Harindra Rajasekeran[1,3], Yuliya Lytvyn[1,2,3] and David Z.I. Cherney[1] *Kidney International* (2016) **89,** 524–526

LEADER study: Liraglutide in type 2 diabetes

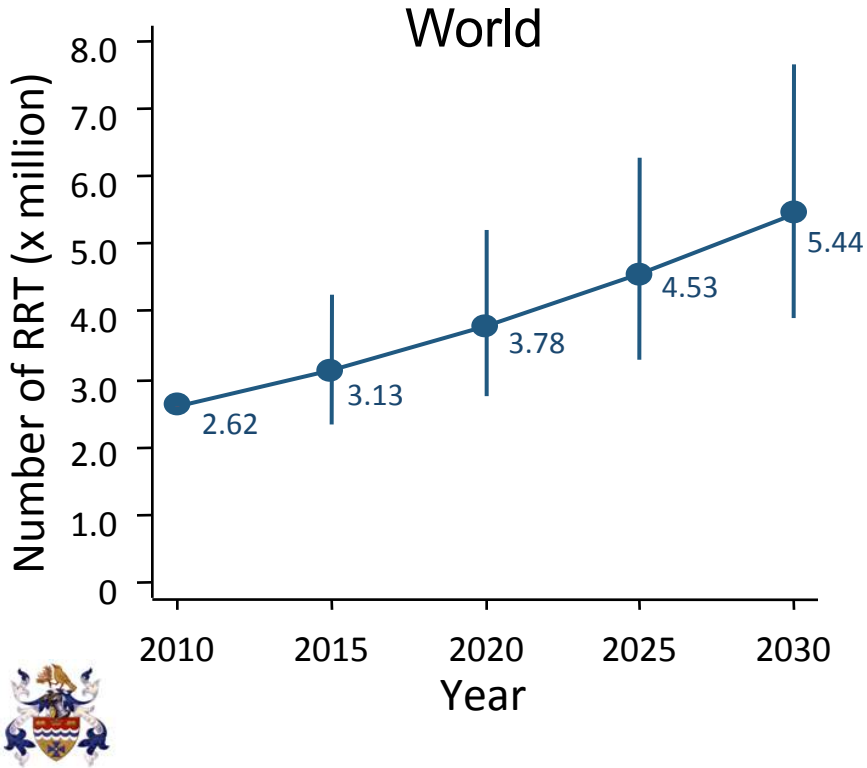


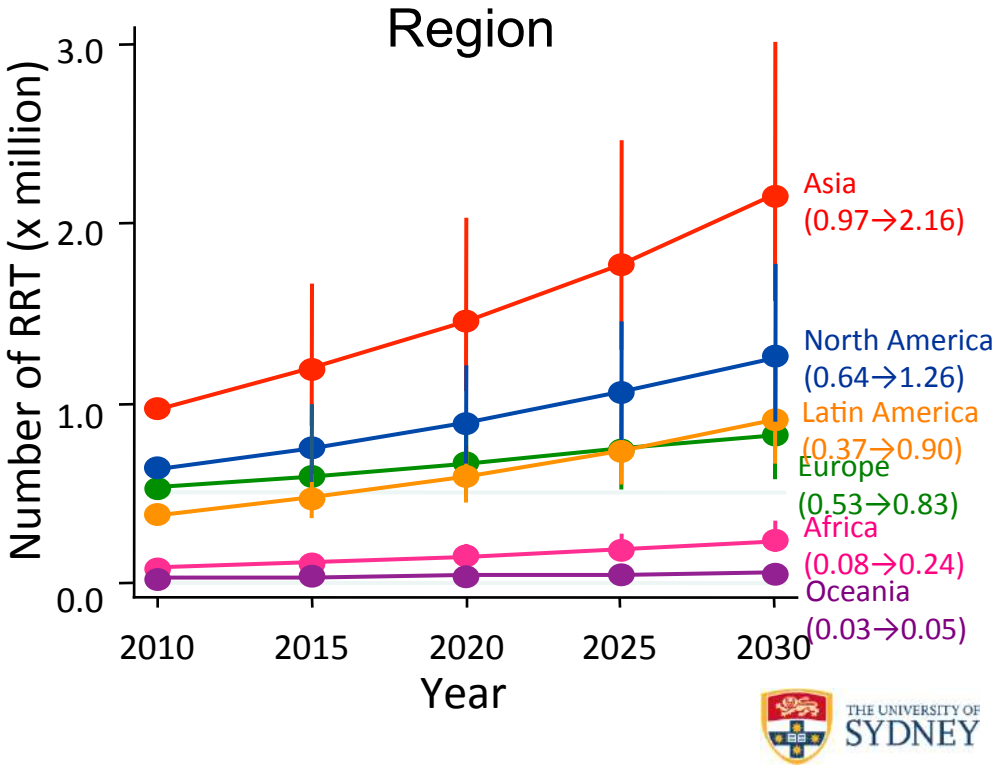


Number needed to treat (NNT) in 3 years to prevent primary outcome=66, and to prevent death from any cause=98

Marso et al NEJM July 2016

Projecting the estimated number of patients receiving RRT from 2010 to 2030





Global “push”

- International Society of Nephrology (ISN) established working groups to establish and validate novel therapeutic targets to retard progression of CKD.
- Four goals
  - Improve the identification of “druggable’”targets that are amenable to therapeutics
  - Enhance the capacity for pre-clinical and early clinical development
  - Broaden the availability of novel therapeutic approaches
  - Increase investment in the development of therapies to limit CKD

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Global Market Opportunity

- According to Decision Resources Group, the CKD market will achieve total sales of $11.7 billion in 2022.
- Erythropoietin-stimulating agents (ESAs), phosphate binders, calcium mimetics, active vitamin D analogues, antihypertensive agents, IV iron and emerging CKD therapies for the CKD non-dialysis and dialysis patient populations. This analysis takes into account the offset of increasing costs of new therapies by emerging availability of generic drugs
- The launch and uptake of novel drugs during the next ten years will be the largest driver of market growth.
- Of the emerging therapies with novel mechanisms of action, the hypoxia-inducible factor-prolyl hydroxylase (HIF-PH) inhibitors will likely have the biggest impact on the CKD market.

Late-Stage CKD: Key Metrics in Six Major Pharmaceutical Markets, 2012–2017	
2012 Patient Population	
Late-stage CKD Population[a]	2,356,913
Treated Population[b]	1,446,904
2012 Market Sales	
US	$1.48bn
5EU	$397m
Total	**$1.88bn**
Key events (2012–2017)	**Level of impact**
PA-21 launch in the US and EU – 2014	↑↑
Zerenex launch in the US and EU – 2014/2015	↑↑
Renagel/Renvela patent expiry in the US and EU – 2014	↓↓↓
Oral treatments included in the Medicare dialysis reimbursement bundle – 2016	↓↓
Velcalcetide launch in the US and EU – 2016/2017	↑↑
2017 Market Sales	
US	$1.27bn
5EU	$391m
Total	**$1.66bn**

Source: GlobalData.
For the purposes of this report, the six major pharmaceutical markets = US and 5EU (France, Germany, Italy, Spain, and UK).
a = Stage 4 and 5 CKD prevalence cases; b = patients treated for hyperphosphatemia and/or secondary hyperparathyroidism

Summary

- An unmet need for new therapeutic options of kidney fibrosis
- Global recognition, demand and commercial opportunity to develop new therapeutics in CKD
- Promising novel targets needs clinical translation and hard renal outcomes
- Collaborative effort among scientists, clinicians, investors, trialists, pharma companies, regulatory authorities, policy makers and governments needed

THE UNIVERSITY OF SYDNEY

AdAlta

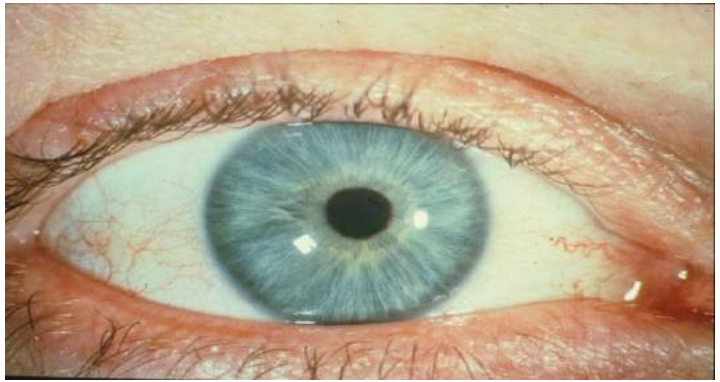
Eye Fibrosis, causes, diseases and treatments

Professor Erica L Fletcher
Department of Anatomy and Neuroscience
The University of Melbourne
Email: elf@unimelb.edu.au

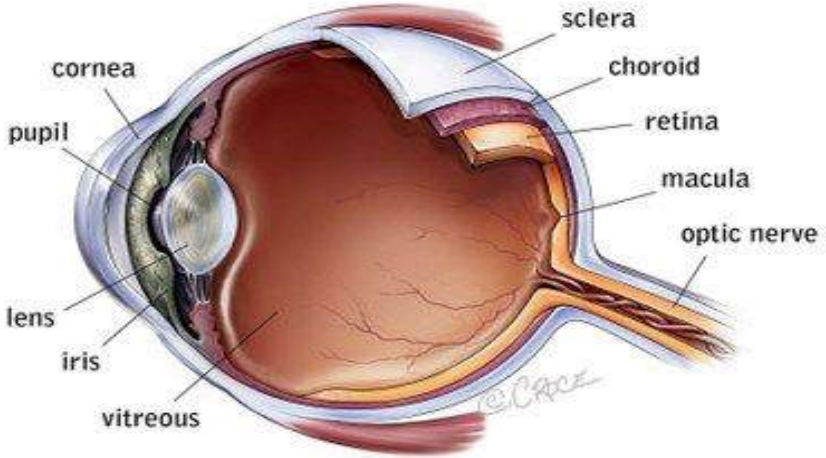
Prof Erica Fletcher

- Erica Fletcher is Professor in the Department of Anatomy and Neuroscience, at The University of Melbourne where she heads the Visual Neuroscience Laboratory.
- She is a clinically trained optometrist who holds both MSc and PhD degrees. She completed her PhD at The University of Melbourne and undertook postdoctoral training at the Max Planck Institute for Brain Research in Germany, funded by a CJ Martin Award from the NH&MRC.
- Prof Fletcher was appointed to an academic position in 2000 at The University of Melbourne. Prof Fletcher's research interests remain primarily focussed on understanding the causes of retinal disease.

The eye

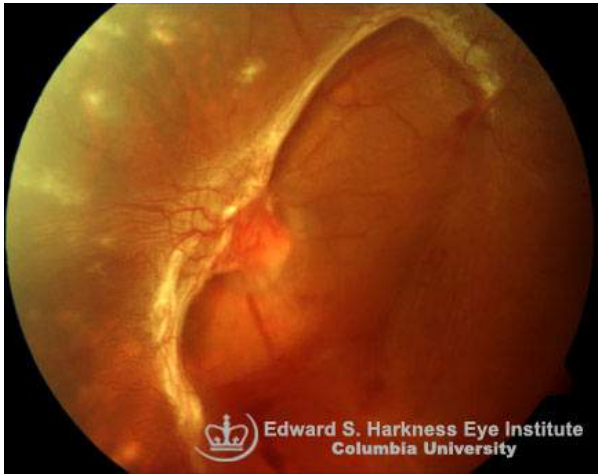



Nikon


sclera
cornea
choroid
pupil
retina
macula
optic nerve
lens
iris
vitreous

Fibrosis and the eye

- **Definition:**
  - Scarring of the retina leading to vision loss
- **Diseases of the retina associated with fibrosis:**
  - **Retinal vascular disease:**
    - Diabetic retinopathy and Age related macular degeneration.
  - **Retinal detachment:**
    - Fibrosis (PVR): 8-10% of all patients undergoing primary retinal detachment surgery



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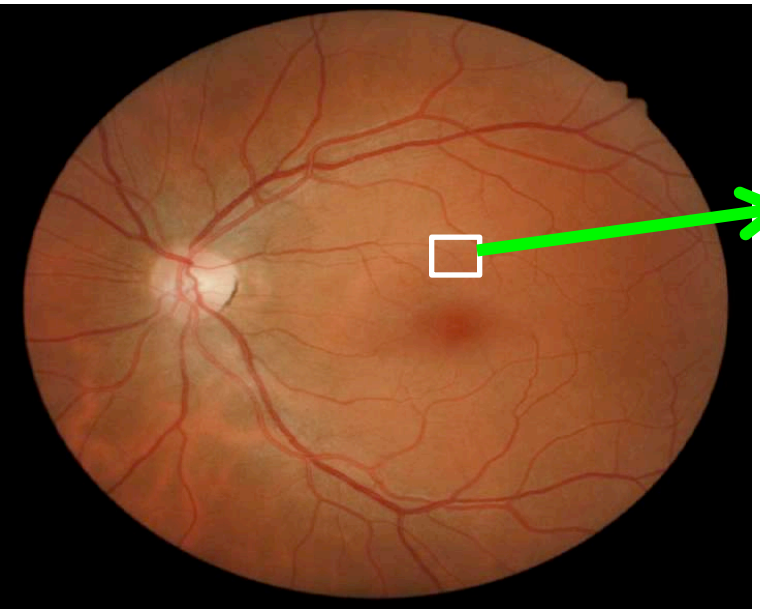
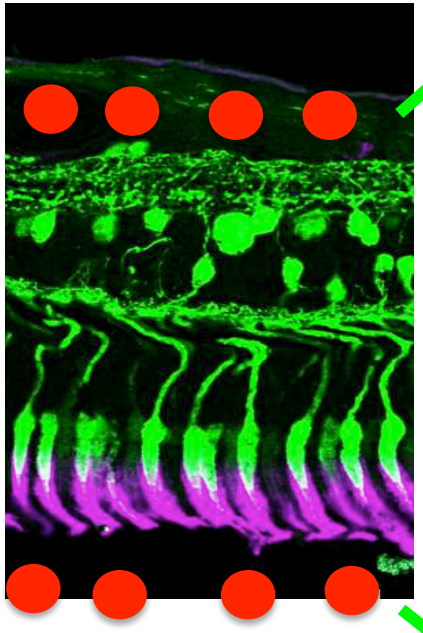
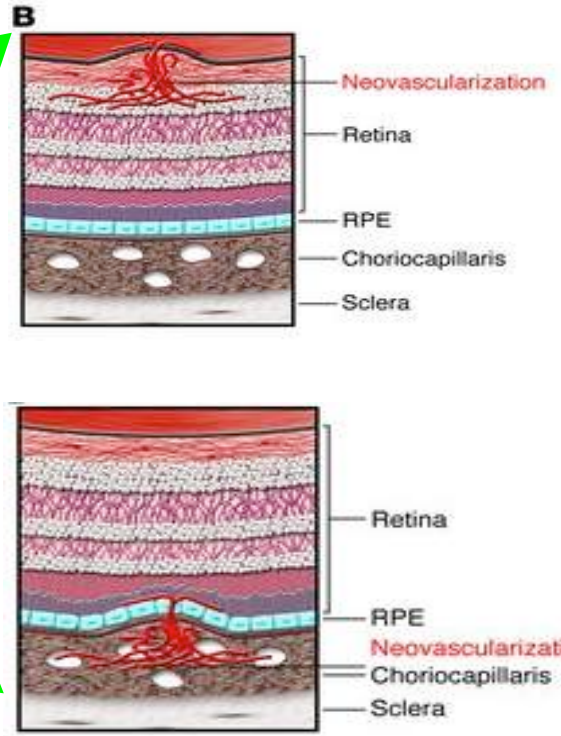
The retina and its vasculature







{Image: Prof Erica Fletcher Univ Melb}

{Image: Friedlander, 2007 J Clin Invest}

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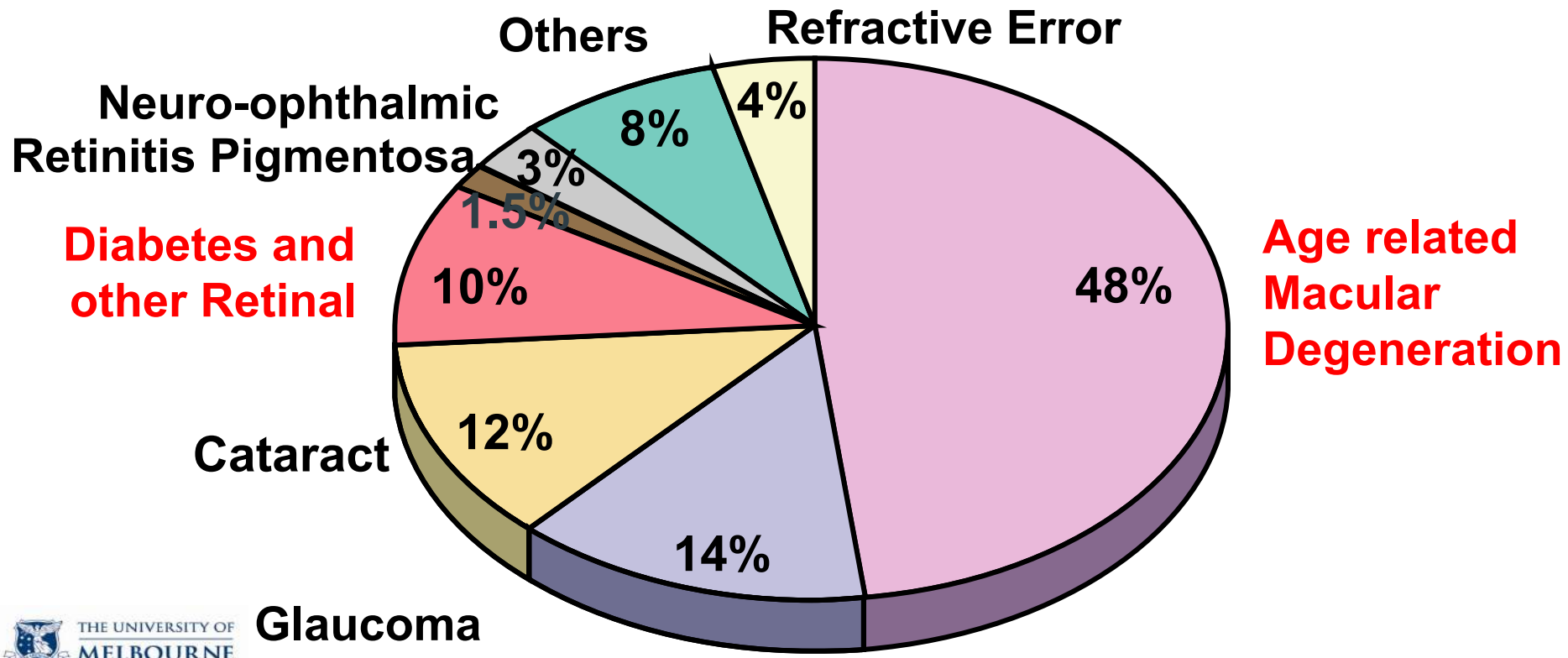
Blindness: 50-100,000 Australians



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{Image: Prof Robyn Guymer, CERA}

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Age related macular degeneration

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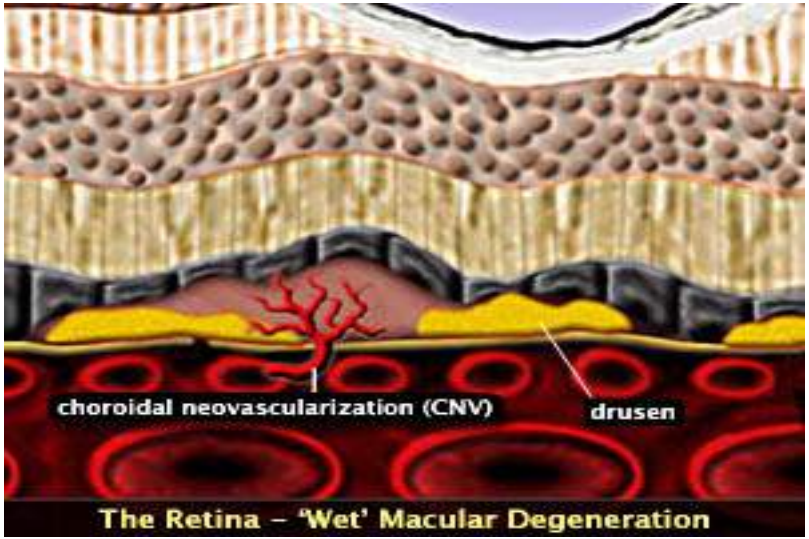


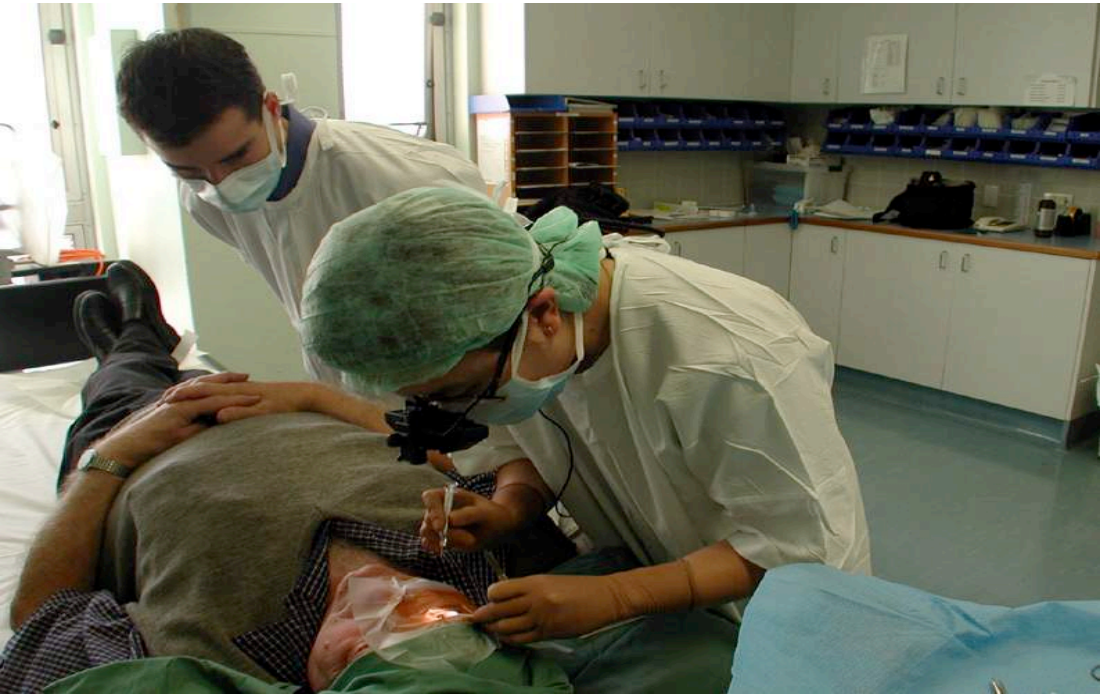
{Image: Prof Robyn Guymer, CERA}

AdAlta

{Image: Prof Robyn Guymer, CERA}

{Image: Prof Robyn Guymer, CERA}

First medical treatment for wet AMD 2002



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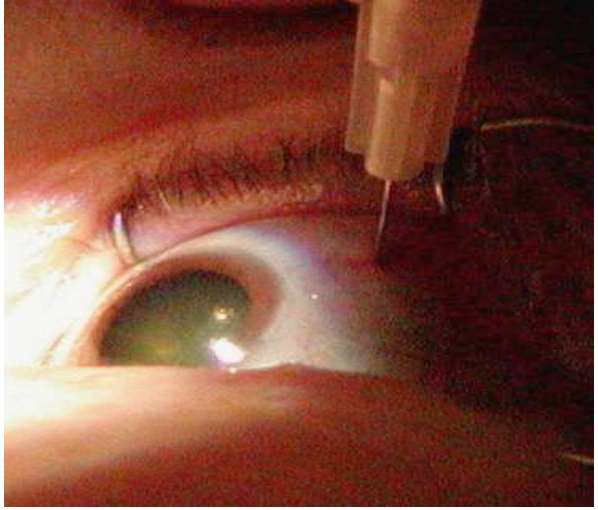
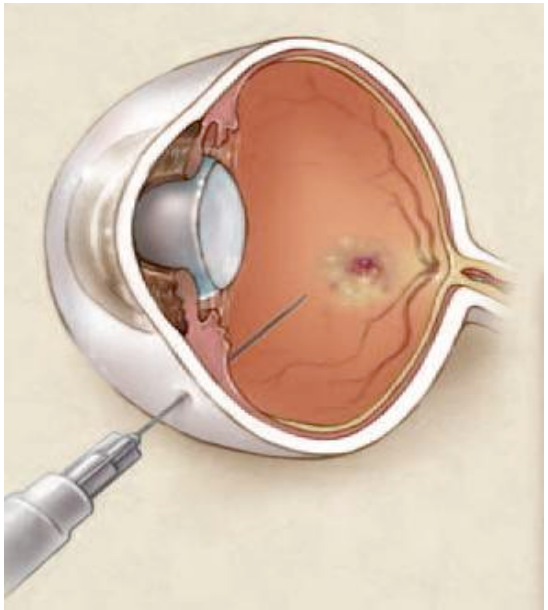
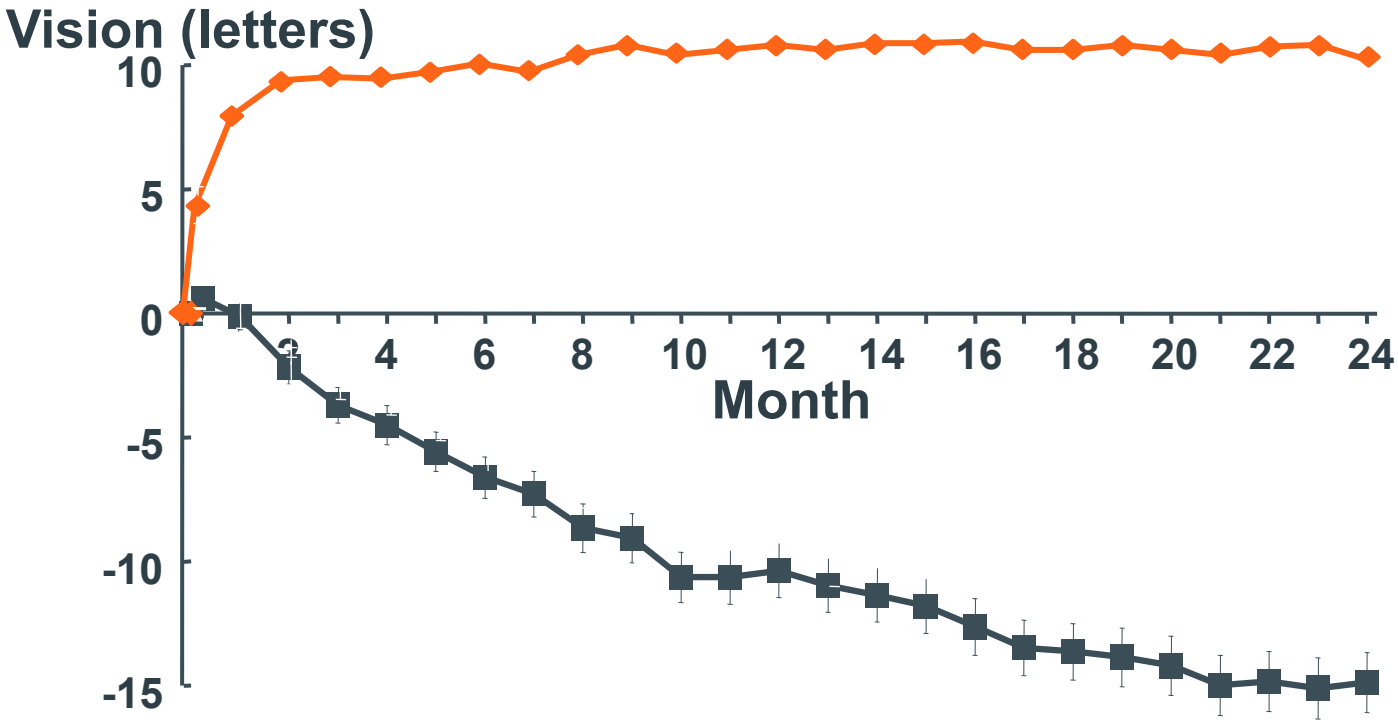




{Image: Prof Robyn Guymer, CERA}

Anti-VEGF treatments



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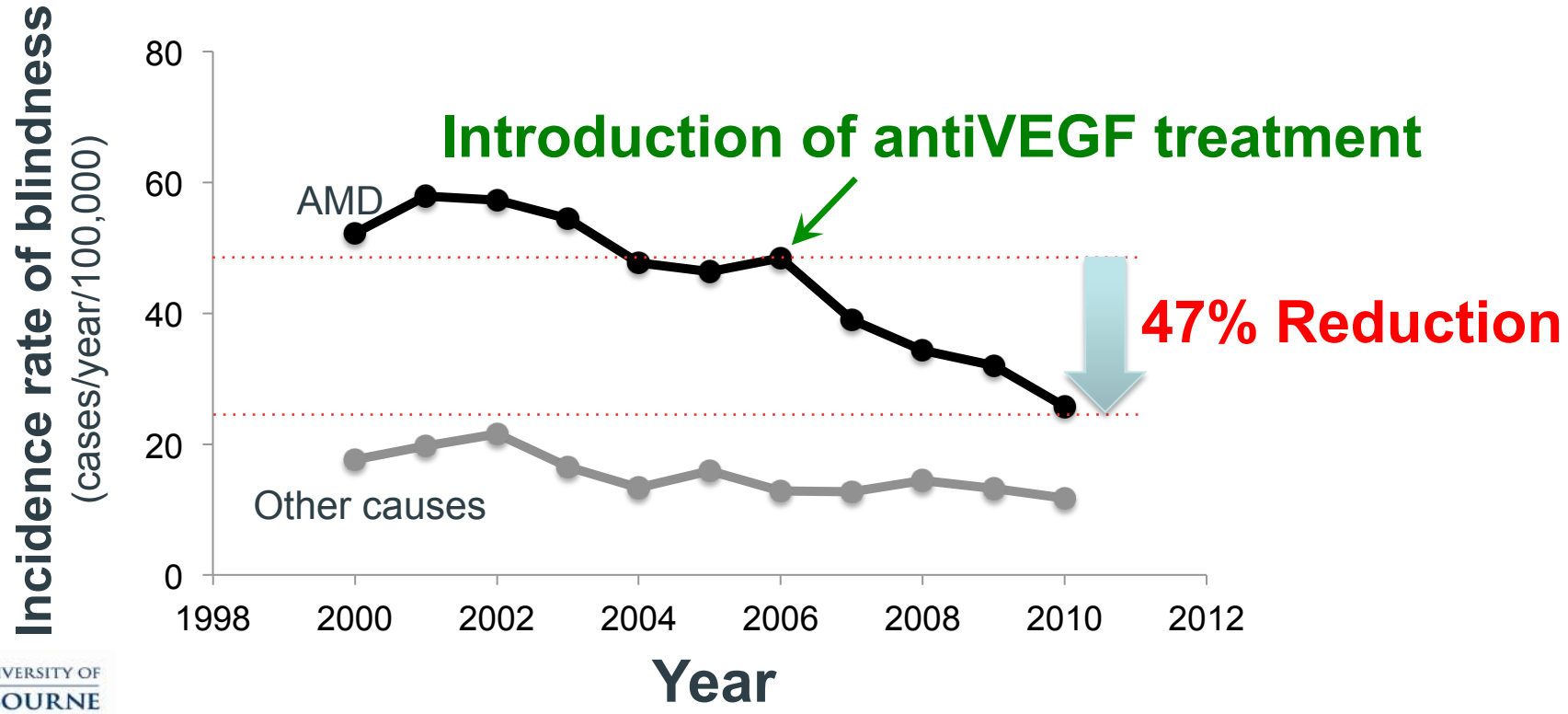
Adapted from: Rosenfeld et al, N Engl J Med 2006; 355(14): 1419.
Brown et al, N Engl J Med 2006; 355(14); 1432

AdAlta

Incidence rates of legal blindness from AMD

Denmark population based observational registry study



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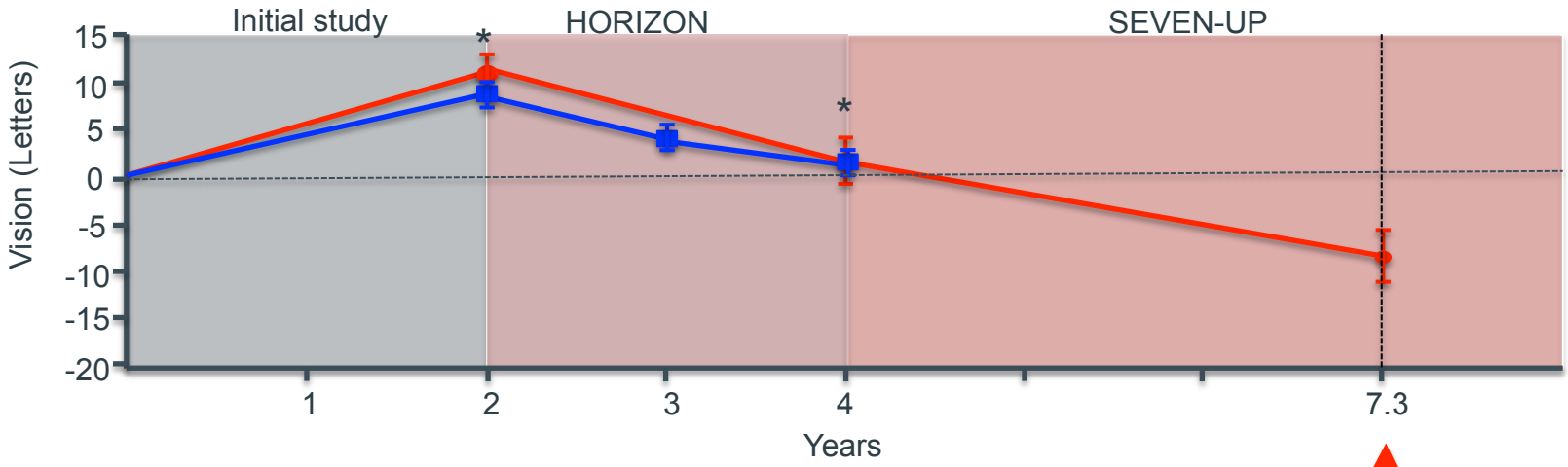
{Adapted from: Bloch SB et al. *Am J Ophthalmol*. 2012;153:209-13}

Long term effects: A sting in the tail!



~50% of patients are legally blind

There is a problem: fibrosis

Risk of Scar in the Comparison of Age-related Macular Degeneration Treatments Trials

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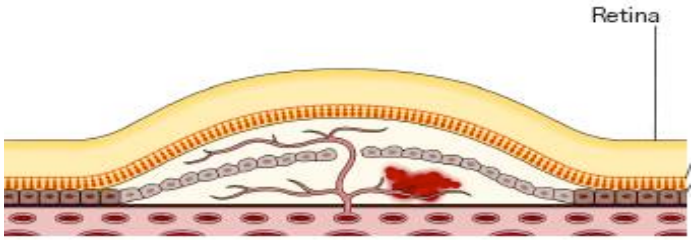
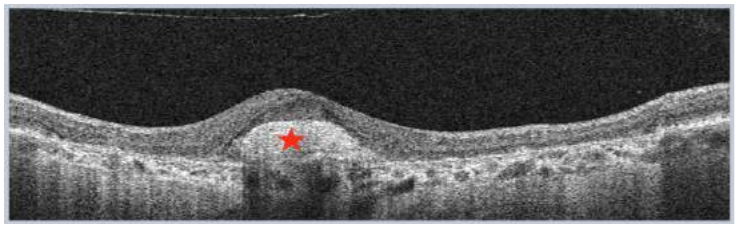
Results: Scar developed in 480 of 1059 eyes (45.3%) by 2 years. versus occult CNV, blocked fluorescence (aHR, 1.4; CI, 1.1–1.8), foveal retinal thickness >212 µm (aHR, 2.4; CI, 1.7–3.6) versus <120 µm, foveal subretinal tissue complex thickness >275 µm (aHR, 2.4; CI, 1.7–3.6) versus ≤75 µm, foveal subretinal fluid (aHR, 1.5; CI, 1.1–2.0) versus no subretinal fluid, and subretinal hyperreflective material (SHRM) (aHR, 1.7; CI, 1.3–2.3) versus no SHRM. Eyes with elevation of the retinal pigment epithelium

Reducing vision in wet AMD



Exudative (wet) AMD



Abnormal growth of blood vessels

New targets

↓

Leakage of blood vessels

↓ CXCR4

New targets

Influx of Inflammatory cells

↓

Tissue remodelling

↓

New targets

Scarring/vision loss

THE UNIVERSITY OF MELBOURNE
Department of Anatomy & Neuroscience

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Drugs in Development

- Current drugs have limited efficacy with ~45% of patients being legally blind after 7 years.
- Other anti-fibrotic and anti-angiogenic agents currently in development with multiple targets
  - Platelet-Derived Growth Factor Receptor
  - Anti-$\alpha v\beta 1$ integrin
  - Anti-$\alpha v\beta 3$ integrin
  - Androgen Receptor Agonist
  - Angiopoietin 2 (ANGPT2) Inhibitor, Placental Growth Factor (PGF) Inhibitor, Vascular Endothelial Growth Factor A (VEGFA) Inhibitor
  - Sphingosine 1-Phosphate (S1P) Inhibitor
  - C5 Complement Inhibitor
  - Sodium Hydrogen Exchange Isoform-3 (NHE-3) Inhibitor
  - Connective Tissue Growth Factor (CTGF) Inhibitor

Fibrosis of the retina

- **Fibrosis is a major factor leading to vision loss in a number of conditions including:**
  - Treatment-resistant age related macular degeneration;
  - End stage diabetic retinopathy; and
  - Surgical repair of retinal detachment and trauma.
- **Few if any current treatments**
- **Common causes including role of immune cells, tissue remodelling that is similar to fibrosis in other regions of the body**

Getting a fibrosis drug to the clinic and a deal

Stewart Roberts (chair)

Dr Brian Richardson

Dr John Westwick

Dr Robert Peach

Stuart Roberts, Chair

Stuart Roberts has been involved in the healthcare and biotechnology sector since the early 2002, initially as a sell-side analyst doing equities research in the sector in Australia, then, from the start of 2015, as an executive inside biotech companies, before he returned to equities research with the founding of NDF Research in June 2016.

Brian Richardson

Brian was most recently a member of The Leadership Team and The Global Head of The Musculoskeletal Disease Therapeutic Area at The Novartis Institutes for Biomedical Research having previously held several other senior positions during a 42 year career in the pharmaceutical industry.

Research conducted in Brian's laboratories has led to the discovery, development and introduction of several new therapies.

John Westwick

John has extensive experience in drug discovery in the Pharmaceutical Industry and as a Professor of Pharmacology. With over 14 years at Novartis Institutes for Biomedical Research, John was responsible for the build-up and leadership of all aspects of drug discovery and early development from target validation to the completion of proof of concepts in the respiratory area, which included severe asthma, Chronic Obstructive Pulmonary Disease (COPD), cystic fibrosis, pulmonary arterial hypertension, and pulmonary fibrosis.

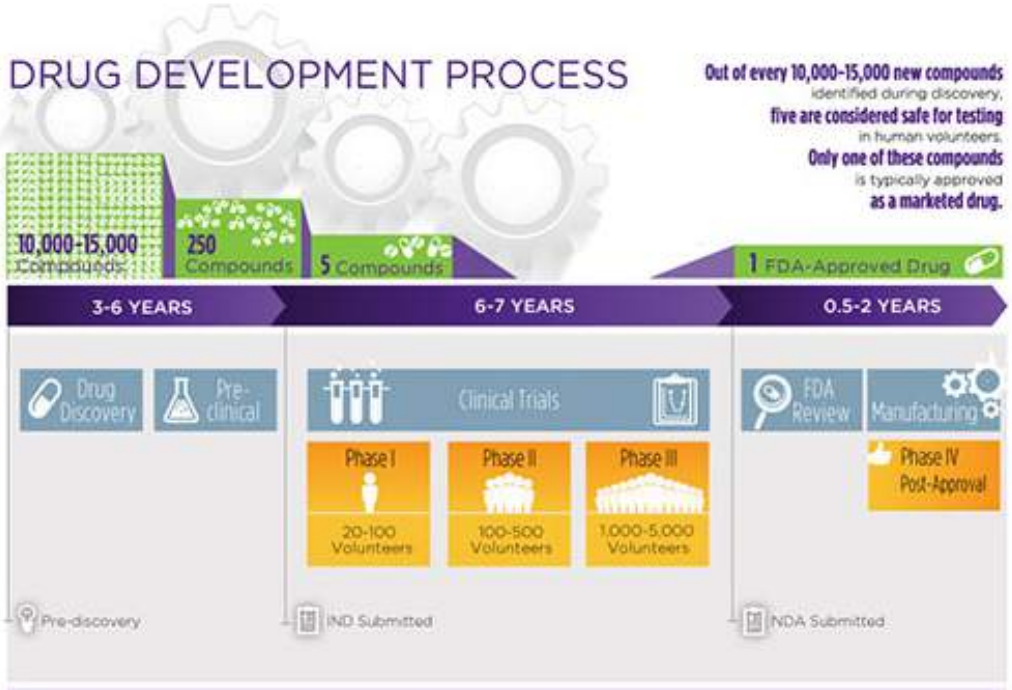
John has had 13 positive proof of concepts in respiratory, which include a number of compounds and monoclonal antibodies which are now in phase III clinical trials.

Robert Peach

- Dr Peach has over 25 years of drug discovery and development experience in the pharmaceutical and biotechnology industry. In 2009 he co-founded Receptos, becoming Chief Scientific Officer and raising $59M in venture capital and $800M in an IPO and three subsequent follow-on offerings.
- In August 2015 Receptos was acquired by Celgene for $7.8B. His extensive drug discovery and development experience in autoimmune and inflammatory diseases, and cancer has resulted in multiple drugs entering clinical trials and 3 registered drugs.

Drug development pathway

- What does it take to get a fibrosis drug to the clinic?
- What does orphan drug designation mean?
- Which fibrosis indication?



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Fibrosis deals: IPF, NASH, Renal

IPF

adheron THERAPEUTICS
Sep-15 acquired by Roche
$105m + $475m milestones
phase I asset

Promedior
Aug-15 acquired by BMS
$150m + $1.25b milestones
phase IIa asset

Galecto Biotech AB
Nov-14 acquired by BMS
$444m
phase I asset

NASH

pharmaxis
May-15 acquired by BI
$40m + $750m milestones
phase I asset

NIMBUS THERAPEUTICS
April-16 acquired by Gilead
$400m + $800m milestones
phase I asset

TOBIRA THERAPEUTICS
Sep-16 acquired by Allergan
$1.695B aquisition
phase I & III assets

RENAL

fibrotech therapeutics
Sep-14 acquired by Shire
$75m + $483m milestones
phase I asset

QUESTCOR PHARMACEUTICALS, INC.
August-14 acquired by
Mallinckrodt
$5.6B

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next generation protein therapeutics

i-bodies – a new class of protein therapeutics to treat human disease

February 2017

Sam Cobb, CEO and Managing Director

AdAlta Limited (ASX:1AD)

s.cobb@adalta.com.au

Sam Cobb

- Sam is the founding CEO of AdAlta and has over fifteen years' experience in business development and commercialisation of early stage scientific technologies.
- Prior to AdAlta, Sam was the Business Development Director at the Co-operative Research Centre for Diagnostics. Sam has also worked for the biotech start up companies Sensologix Inc and Nephrogenix Pty Ltd and at the University of Queensland's technology commercialisation companies, Uniquest Pty Ltd and IMBcom Pty Ltd.
- Sam has a Bachelor of Science, a Masters of Intellectual Property Law and has completed the Australian Institute of Company Directors course.

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Corporate and investment summary

- A drug discovery and development company focused on using its proprietary technology platform to generate a new class of protein therapeutics, known as i-bodies, for treating a wide range of human diseases
- **Investment highlights**
  - Initial focus on treating fibrosis – high unmet medical need
  - Advanced lead fibrosis drug candidate AD-114 with significant pre-clinical validation
  - Fully funded for phase 1 development of lead fibrosis drug and i-body pipeline
  - Early commercialisation potential
  - Experienced team with strong track record of drug development and ability to deliver

Capital structure	
ASX code	1AD
Shares on issue*	101,037,617
Share price (31 January)	AU$0.21
Market capitalisation	AU$21m
Current cash	AU$8.77m
Trading Range	AU$0.31 to $0.165

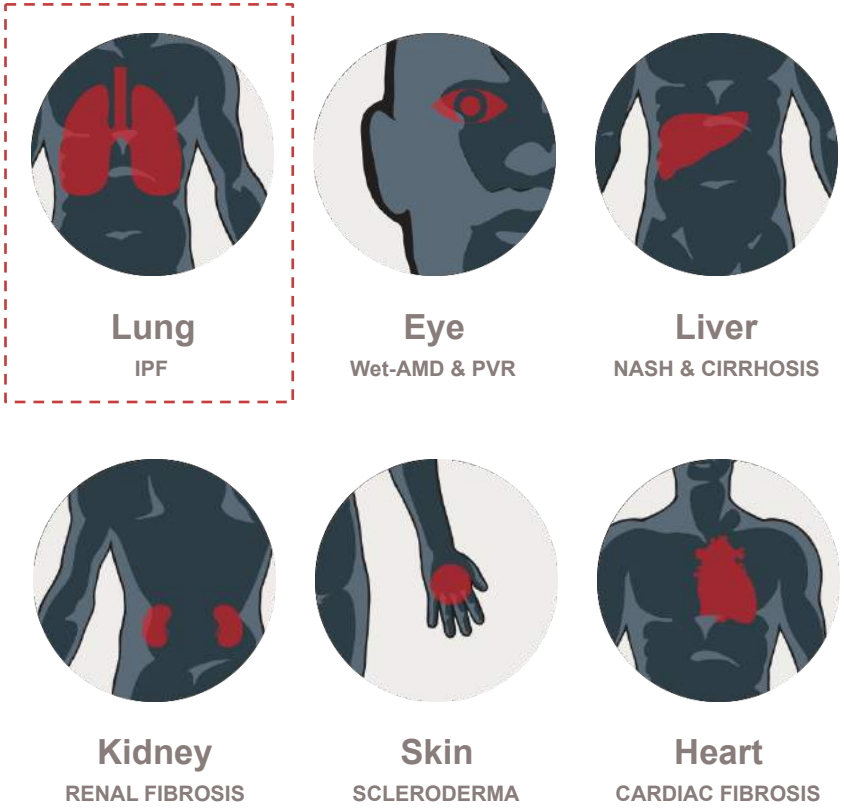
* 50.9m shares escrowed for 6-24 months from listing

Major Shareholders	%
Yuuwa Capital LP	53.5
Platinum Asset Management	7.97
Citycastle Pty Ltd	5.26
La Trobe University	3.01
Robin Beaumont	1.82
Other shareholders	28.44
Total	100%

Fibrosis: unmet medical need with multiple indications

- Developing i-bodies as improved therapies for the treatment of fibrosis
  - a condition that is prevalent in 45-50% of all diseases
- Fibrosis can occur in many tissues of the body as a result of inflammation or damage
  - it can result in scarring of vital organs causing irreparable damage and eventual organ failure
- AdAlta's initial focus is on lung fibrosis

Collectively fibrosis represents a large unmet clinical need



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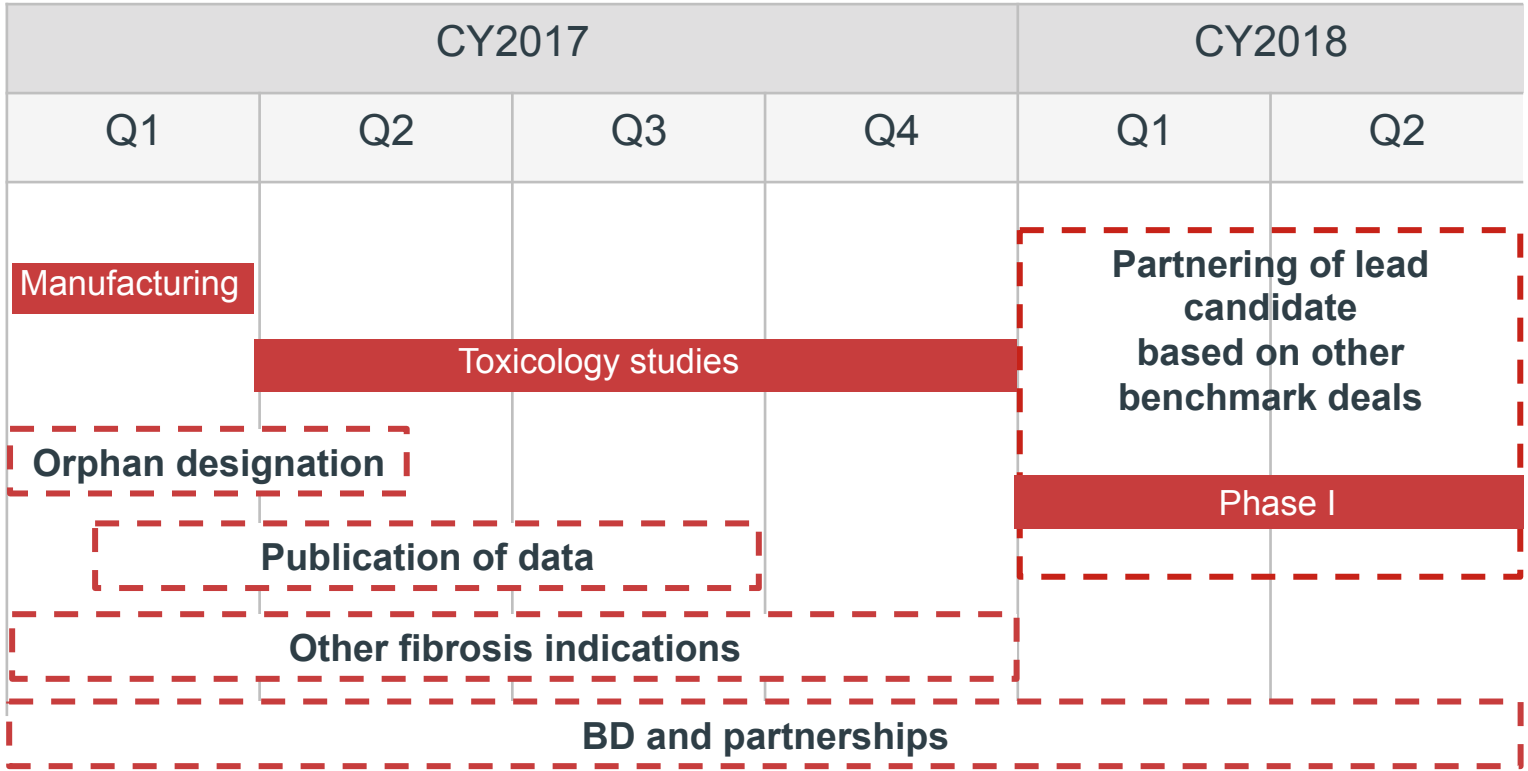
Global market interest in fibrosis treatments

Recent transactions confirm that big pharma are actively acquiring fibrosis assets at an early stage – typically based on Phase I results

Date	Company	Target	Acquired by	Deal value (US$)	Deal commentary
Sep-15	Adheron Therapeutics	SDP051	Roche	$105M upfront, plus $475M in milestones	SDP-51 at end of Phase I for IPF
Aug-15	Promedior	PRM-151	BMS	$150m upfront + $1.25B	Phase II IPF and myelofibrosis
Nov-14	Galecto Biotech AB	TD139	BMS	$444M	Option to acquire at end of clinical POC (no later than 60 days following Ph 1b for IPF completion)
Aug-14	Intermune	Esbriet / Pirfenidone	Roche	$8.3B	Approval in Europe / Japan, phase III in the US
Jun-13	MicroDose Therapeutx	MMI0100	Teva Pharmaceuticals	$40M upfront $125M milestones	MMI0100 was in pre-clinical development
Mar-12	Stromedix	STX100	Biogen Idec	$75M upfront $487.5M milestones	End of phase I for IPF
Jul-11	Amira / BMS	BMS-986020	BMS	$325M upfront $150M milestones	End of phase I for IPF

Source: Medtrack Pharma Intelligence, Informa (all IPF deals since 2011)

AD-114 development: key milestones



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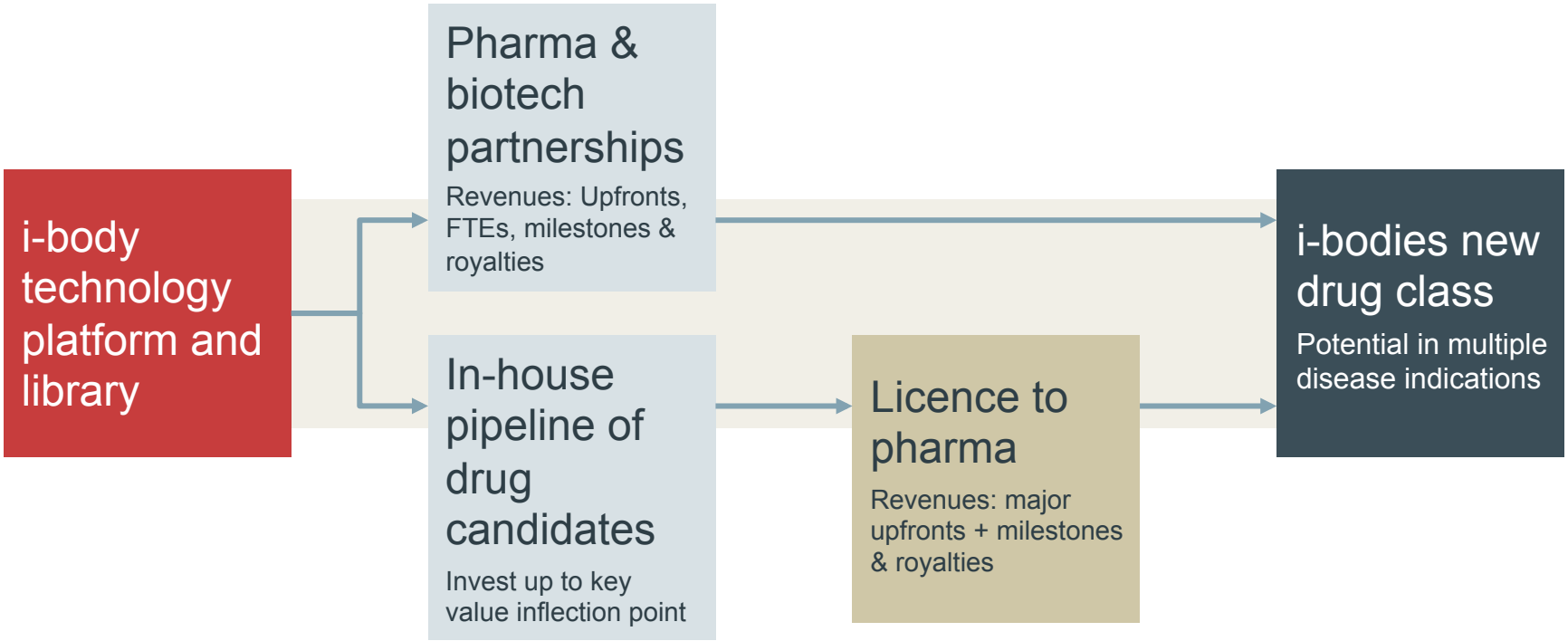
Expected news flow next 12 months

Q3 & Q4 2016	✓	Commence manufacturing of material for toxicology testing with FujiFilm Diosynth Biotechnologies
	✓	Additional AD-114 IPF fibrosis data
	✓	Completion of evaluation of AD-114 with IPF clinicians Alfred Hospital
	✓	Completion of AD-114 NASH animal study
H1 2017	✓	Orphan Drug Designation (US FDA)
	▶	Hypertrophic scarring animal results for AD-114
	▶	Manufactured material for toxicology testing available
H2 2017	▶	Eye fibrosis additional data, funded by NHMRC development grant
	▶	Completion of other pre-clinical study animal models of AD-114
	▶	AD-114 toxicology results

AdAlta business model – strategy to create value



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Market benchmarks

Fibrosis lead AD-114	adheron THERAPEUTICS Sep-15 acquired by Roche $105m + $475m milestones phase I asset	Promedior Aug-15 acquired by BMS $150m + $1.25b milestones phase IIa asset	Galecto Biotech AB Nov-14 acquired by BMS $444m phase I asset
Next gen antibodies	arGEN-X April-16 with Abbvie $40m upfront + $645m milestones & royalties	pieris PHARMACEUTICALS Dec -15 with Roche $6.4m upfront + $410m milestones & royalties	Ablynx Nov-15 with Novo-Nordisk €9m upfront + €182m milestones & royalties)
GPCRs	HEPTARES therapeutics Acquired Feb-15 by Sosei $400m Phase Ib asset + 7 pre-clinical leads	receptos Acquired by Celgene July-15 $8b Ph III, Ph II and GPCR platform	Ablynx April-16 with Boehringer €8m payment for Ph1 GPCR nanobody (€125m milestones & royalties)

Management and Board in place to deliver strategy

Sam Cobb: Founding CEO and Director

Extensive experience in raising equity, contract and grant funding

15 years of commercialisation and management experience

Dr Paul MacLeman: Chairman

Managing Director of a ASX listed IDT Australia Ltd

Founded biologics companies, experienced ASX listed executive

Dr Robert Peach

Founder and CSO of Receptos Inc, acquired by Celgene Corporation in 2015 for US$7.8bn

Deep experience in research and drug development

Dr John Chiplin: Independent Director

CEO of investment Company NewStar Ventures

Managing Director of acquired antibody company Arana Therapeutics

Liddy McCall & Dr James Williams: Yuuwa Capital Directors

Founders and investment Directors of Yuuwa Capital

Founders of iCeutica Inc (acquired 2011) and Dimerix Limited

Directors of several Australian biotech and Agritech companies

Multiple FDA, CE Mark and TGA approvals

Scientific Advisory Board

Internationally recognised with proven track record of drug development

David McGibney: pre-clinical and clinical advisor

20 years with Pfizer, including Head of European R&D

Ex Pfizer Ltd board member

Developed Viagra, and 10+ blockbuster drugs

Brian Richardson: drug discovery and development expert

Ex-Sandoz and Novartis (40+ years), including Head of Pre-clinical Research

Over 60 original peer reviewed research papers

John Westwick: pulmonary drug discovery and development

Over 14 years experience at Novartis, head of respiratory drug discovery

Five product launches and 13 positive proof of concepts in respiratory, including a number of antibodies which are now in phase III.

Dr Mick Foley, AdAlta CSO

Expert in phage display

NIH, NHMRC, ARC, Gates funding and over 70 scientific publications

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AdAlta investment summary

- Powerful proprietary technology platform to develop a pipeline of i-bodies for the treatment of a wide range of human diseases
- Initial focus on treating Idiopathic Pulmonary Fibrosis and other fibrotic diseases - high unmet clinical need
- Advanced lead candidate with significant pre-clinical validation of AD-114 demonstrating anti-fibrotic and anti-inflammatory effects
- Early commercialisation opportunity
- Experienced management and Board to drive AD-114 development and secure technology platform partnerships and product licensing deals
- IPO August 2016 raised $10M to meet major milestones: clinical trials of AD-114 in lung fibrosis and development of i-body pipeline

Thank-you

Sam Cobb, CEO and Managing Director

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