

verona pharma plc

AIM: “VRP”, Xetra: “I9S”

Interim Results Presentation 2015

***Strategic Focus, Clinical Progress and Financial Discipline***

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8 September 2015

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# Today's agenda

## Verona Pharma:

- **Introduction** Jan-Anders Karlsson, CEO
- **2015 Interim Financials** Biresh Roy, CFO
- **1H 2015 operational highlights & progress in clinical trials** Jan-Anders Karlsson, CEO
- **Q&A**

# First-in-Class Drugs to Treat Unmet Needs in Respiratory Diseases

## Operational highlights:

- Successfully completed dosing of healthy volunteers in Single and Multiple Ascending Dose studies with new nebulized formulation of RPL554
  - **Excellent tolerability at all doses up to 16x those previously shown to produce bronchodilation**
  - **Results support twice daily dosing regimen**
- Commenced a MAD study of RPL554 in up to 30 COPD patients.
  - **Results expected early Q4 2015**
- Initiated a phase 2a dose-finding trial in asthma patients

## Management:

- CMO Dr Ken Newman appointed Jan 2015

## Corporate Developments:

- The Company undertook a secondary listing of its shares at Xetra Exchange in Frankfurt

## Post Period Highlights

- Dr Ken Cunningham and Dr Anders Ullman appointed NEDs, effective 10 September 2015

## Financial Highlights – 6 months ended 30 June 2015

- 2015 Loss after tax: £3.69m (2014: £1.39m) or 0.37p (2014: 0.19p) per share
- Net cash outflows from operating activities: £3.92m (2014: £1.47m)
- Cash and cash equivalents at 30 June 2015: £6.09m (2014: £12.10m)

## Income statement

	6 months to 30 June 2015 £'000	6 months to 30 June 2014 £'000	FY 2014 £'000
Revenue	-	-	-
R&D expenses	(3,477)	(866)	(2,635)
Admin expenses	(982)	(525)	(1,158)
<b>Operating loss</b>	<b>(4,459)</b>	<b>(1,391)</b>	<b>(3,793)</b>
Finance revenue	27	3	30
<b>Loss before tax</b>	<b>(4,432)</b>	<b>(1,388)</b>	<b>(3,763)</b>
Tax credit	743	-	1,004
<b>Loss for the year</b>	<b>(3,689)</b>	<b>(1,388)</b>	<b>(2,759)</b>

## Use of funds in the 6 months to 30 June 2015

**R&D expense: £3.48m (2014: £0.87m)**

### **RPL554**

- Clinical trials £3.37m (2014: 0.57m) for progressing SAD/MAD and Asthma studies and advancing preparations for a commercially scalable formulation

### **VRP700**

- Patent cost £0.11m (2014: 0.3m)

**Administrative expense: £0.98m (2014: 0.53m)**

- Professional fees, share based payment and other administrative items

**R&D tax credits of £0.74m (2014: £Nil)**

**£6.09m in cash and cash equivalents at bank at 30 June 2015**

# Management and Board with deep development and commercialisation expertise



New Chairman  
of the Board:

**Dr. David  
Ebsworth**

*Non-Executive  
Chairman*

Formerly CEO of Galenica AG, Oxford GlycoSciences and Bayer Pharmaceuticals, and served on a number of Boards within the pharma, biotech and venture capital sectors, in EU, US and Japan.



**Dr. Jan-Anders  
Karlsson**

*Chief Executive  
Officer*

Former CEO of S\*BIO Pte Ltd, Singapore. Previously R&D roles in pharmaceutical industry, incl. EVP Global Research, Bayer Pharma.



**Biresh  
Roy**

*Chief Financial  
Officer*

Formerly Enigma diagnostics, Xytis, Morphochem, Santhera and AT Kearney.



**Dr. Ken  
Newman**

*Chief Medical  
Officer*

Formerly with Mesoblast, Acton Pharma, Boehringer Ingelheim and Forest Labs (now Allergan).



**Dr. Peter  
Spargo**

*SVP Chemistry,  
Manufacturing  
and Controls*

Formerly with Pfizer, Novoxel and Creabilis.



**Dr. Kathy  
Abbott-Banner**

*Director of  
Project  
Management*

Formerly with GSK, Pfizer and Novartis.



## Management and Board with deep development and commercialisation expertise



**Dr. Anders Ullman**  
*Non-Executive Director*

Formerly Head of R&D at Biovitrum, Nycomed and Baxter Biosciences. He has also served in a number of roles at AstraZeneca and EVP Global Product Development at Bayer.



**Dr. Ken Cunningham**  
*Non-Executive Director*

Formerly Non-Executive Chairman of Abzena, Xention and Prosonix. He also served as COO and later CEO of SkyePharma.



**Dr. Pat Humphrey**  
*Non-Executive Director*

Formerly with Allen & Hanburys, Glaxo and Theravance, San Francisco.

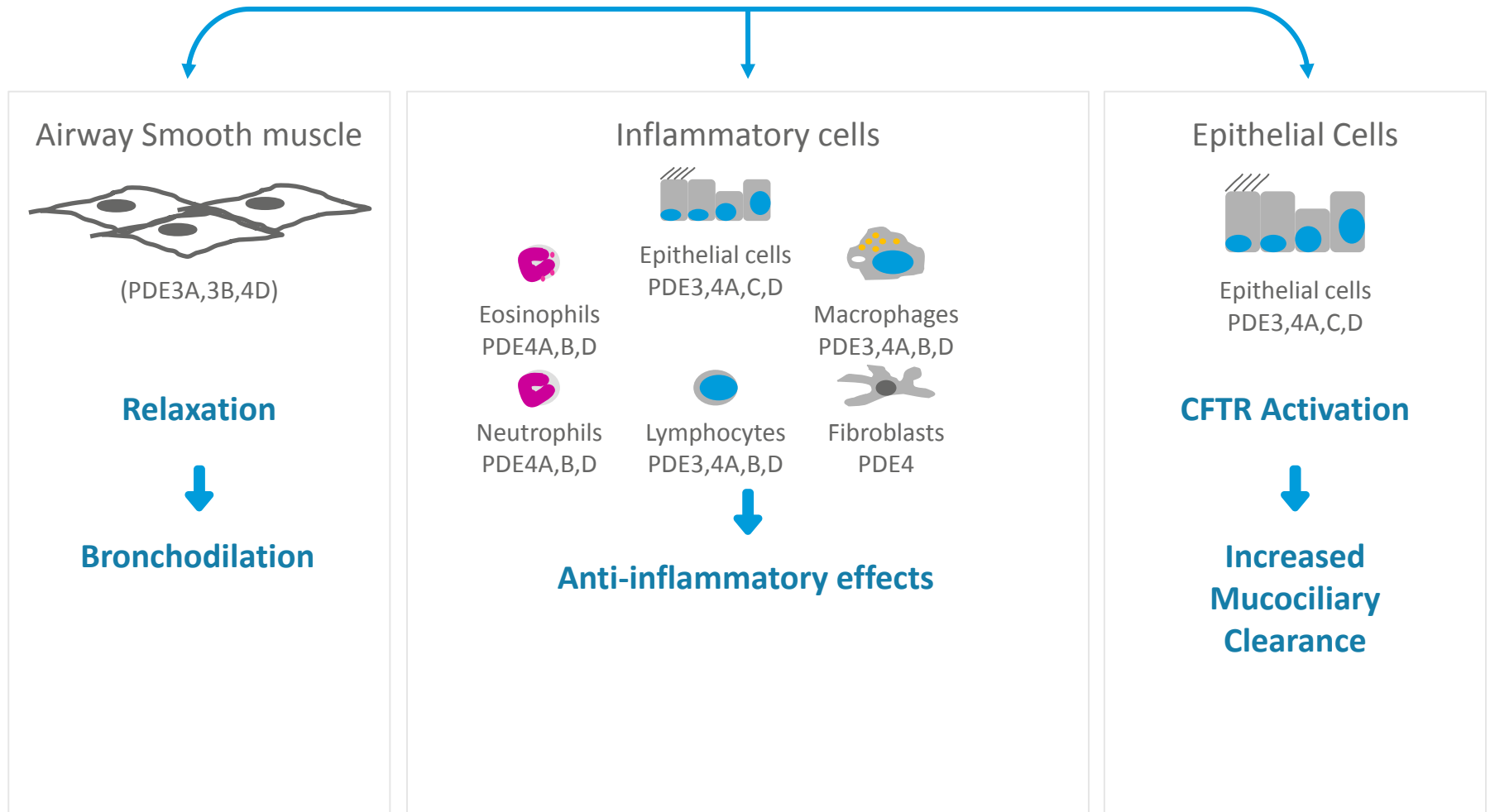
# RPL554 – lead compound for COPD, CF and potentially additional indications



- **A unique mechanism of action: dual inhibition of PDE3 and PDE4 enzymes**
  - Inhibiting both PDE enzymes leads to synergistic increase in activity in many cell types
- **Original proof-of-concept formulation in clinical trials with 105 subjects**
  - demonstrated bronchodilator and anti-inflammatory properties
- **Novel proprietary formulation in Ph1/2a clinical trials with up to 140 subjects**
- **Favourable properties for API/drug product manufacture and stability**
  - Developed for use in nebulizer
  - DPI and pMDI formulations also feasible
- **Strong patent position**
  - No other PDE3/PDE4 inhibitor in clinical development, to the best of our knowledge

# Unique “three-in-one” mechanism of action

## Pharmacological Effects of PDE3 and PDE4 Inhibition



# First-in-class approaches, addressing high unmet needs in the respiratory market

Project	Indication	Pre-clinical	Phase 1	Phase 2	Phase 3	Market
RPL554 Dual PDE3/PDE4 inhibitor  With both bronchodilator and anti- inflammatory activity	COPD exacerbations					Hospital / specialist care
	Maintenance therapy of COPD					Chronic, maintenance treatment
	Acute asthma					Hospital / specialist care
	Cystic fibrosis					Hospital / specialist care
	COPD / CF "Dry powder formulations"					Chronic, maintenance treatment

# COPD: A growing market with a high unmet medical need

Worldwide, 65 million people suffer from moderate to severe COPD: WHO expects COPD to be the 3<sup>rd</sup> leading cause of death globally by 2020, after heart disease and stroke

Only major chronic disease with increasing mortality

Current drugs aimed at long-term maintenance therapy: 'mass market' dominated by "Big Pharma" (GSK, AZN, BI, NOV)

Despite widely available therapies, acute periods of worsening symptoms (exacerbations) cause\*:

- 1.5 million **A&E visits**
- 726,000 **hospitalisations**
- 120,000 **deaths**



➔ **Urgent need for new and more effective treatment of exacerbations**

# In-hospital treatment – high value market segment outside Big Pharma focus

## Bronchodilators

Beta2 agonists

Anti-muscarinics

## Anti-inflammatory

Glucocorticoids

### “Big Pharma”

Chronic, maintenance treatment  
pMDI/DPI

Short-acting  
Long-acting  
bronchodilators

combinations

Inhaled steroids



### Verona Pharma

In-hospital treatment of exacerbations  
Nebulizer

nebulized  
bronchodilators

**RPL554**

Intravenous/prednisone  
steroids



- Bronchodilating therapy is the standard of care
- The nebulized bronchodilator market in the US was worth about \$1billion in 2014
- Near-term opportunity for RPL554

## RPL554: compelling positioning as in-hospital treatment of COPD

**14% of people admitted with an exacerbation of COPD die within 90 days;  
25% within 1 year**

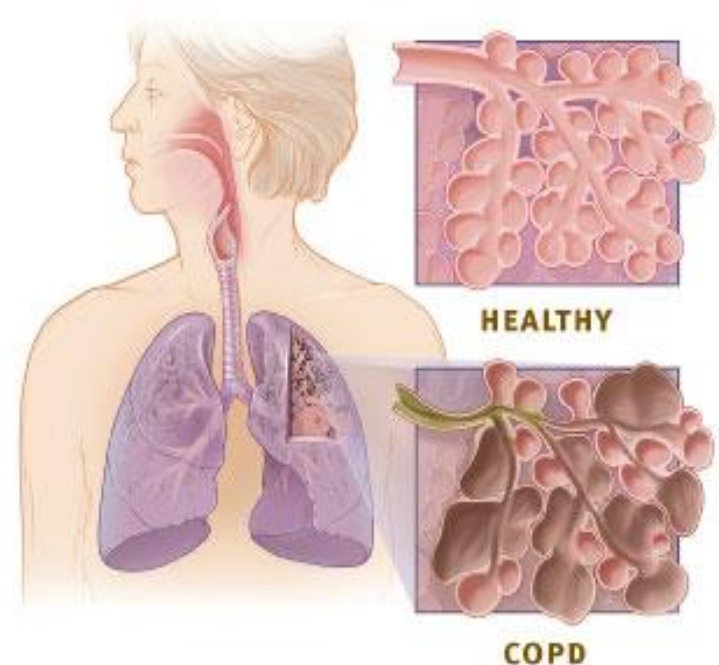
### RPL554 as add-on therapy to “Standard of Care”:

Rapid and pronounced improvement  
in lung function

Reduced symptoms

Shorter time in hospital

Reduced re-admission rates 30 days after  
discharge from hospital



## RPL554 – dual PDE3/PDE4 inhibitor with Phase 2 data in original proof-of concept formulation

- **Studied in 105 subjects to date in 5 clinical trials**
  - Well tolerated in healthy subjects, COPD patients and asthmatics
- **Shown to have:**
  - Bronchodilating effects
    - Similar in effect onset and size to that of salbutamol – but with new mode of action
  - Bronchoprotective effect
    - Reduce hyper-responsiveness in allergic asthma
  - Anti-inflammatory effects
    - Decreased inflammatory cells in both COPD and allergic rhinitis challenge models



## Good safety and tolerability in clinical trials

- No Serious Adverse Events reported
- RPL554 was well tolerated in healthy volunteers, asthmatics and mild to moderate COPD patients
- No clinically significant Adverse Events (including gastrointestinal) observed in subjects dosed with RPL554 to date
- Adverse Events were mostly mild and occurred with similar frequency to placebo
- No adverse events usually associated with PDE4 inhibitors

# New commercially scalable nebulizer formulation of RPL554

## Phase 1 / 2a SAD/MAD study in healthy volunteers and COPD patients:

- Part A: Single ascending dose study in 50 healthy volunteers
- Part B: Multiple ascending dose study in 30 healthy volunteers
- Part C: Multiple ascending dose study in 30 COPD patients

## Interim Results:

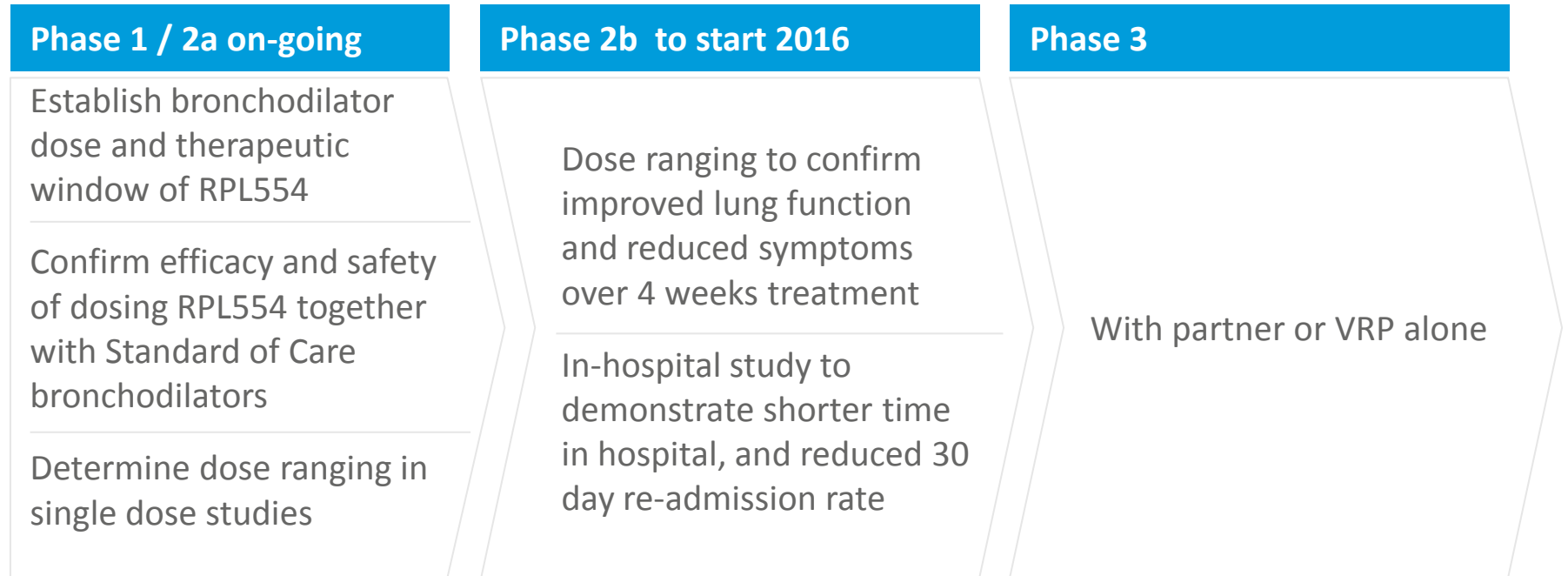
- Reached a dose that was 16 times greater than the previously used bronchodilator dose
- No MTD reached
- Well tolerated at all doses
- No SAEs or AEs of concern
- Pharmacokinetics support twice daily dosing with this new formulation of RPL554
  - Longer pulmonary residence time than with original formulation

➔ **Interim results demonstrate excellent drug tolerability with high commercial potential**

# Development plan for use in COPD patients

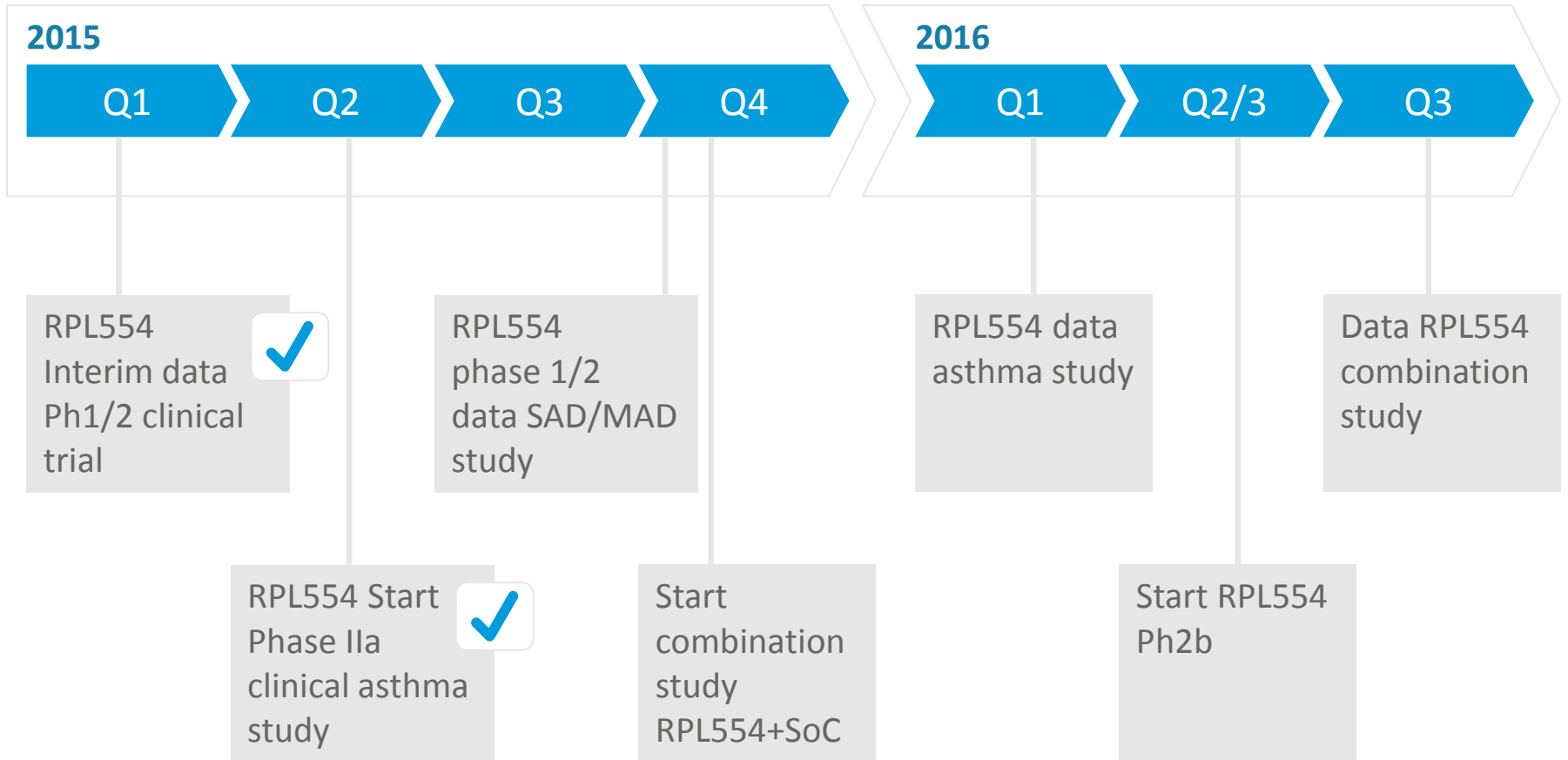
*In-hospital sub-acute use and maintenance treatment*

## New commercial nebulizer formulation of RPL554

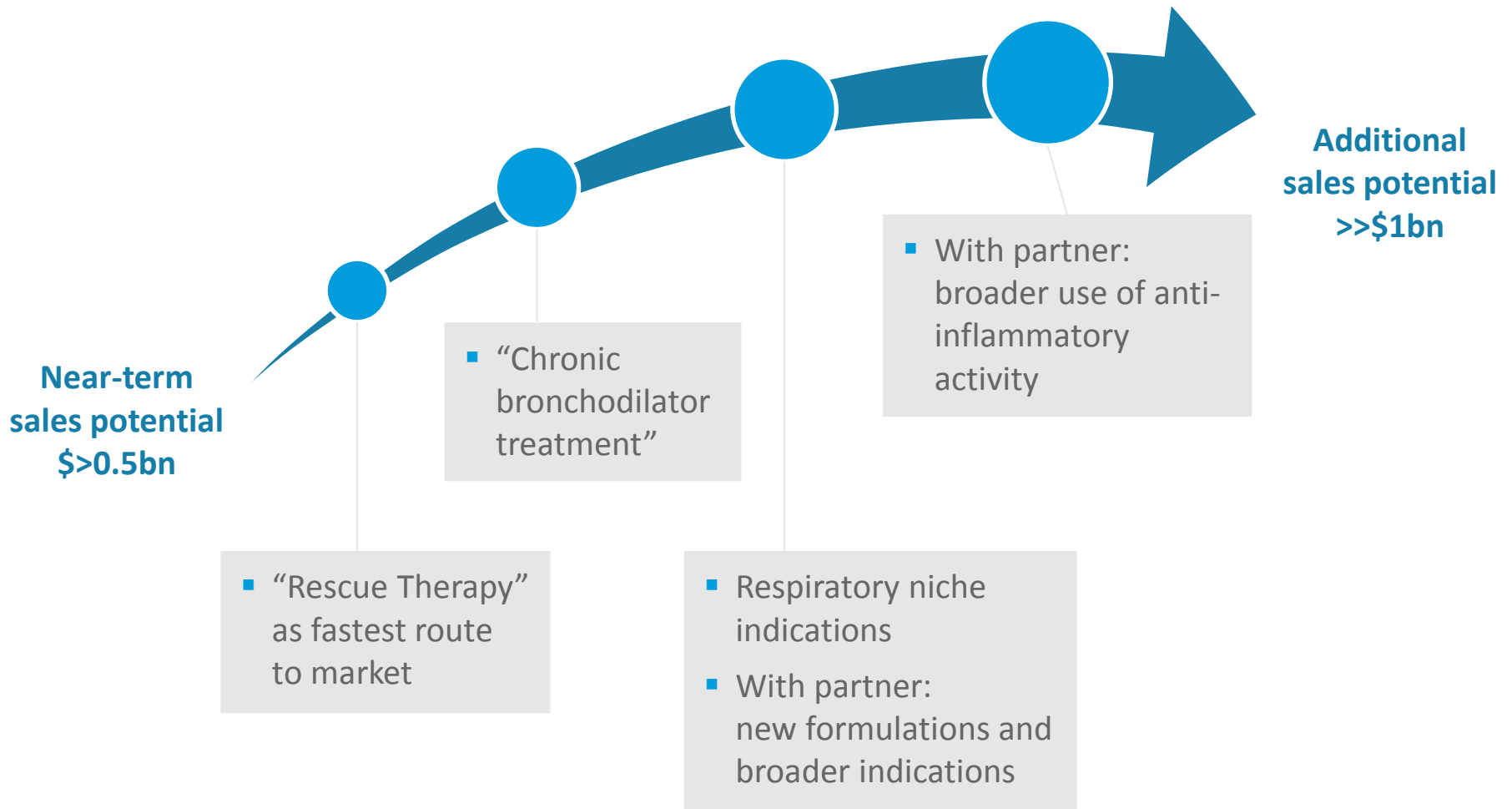


➔ **Shorter development time and manageable costs – well established regulatory endpoints**

# Anticipated milestones and newsflow

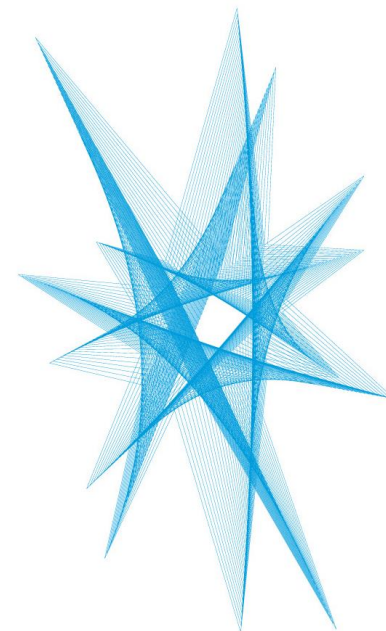


# Strong commercial potential for RPL554



## Verona Pharma – building a specialist respiratory company

- **Respiratory indications with large unmet medical need**
- **First-in-class dual PDE3/PDE4 inhibitor**
  - No novel bronchodilator and anti-inflammatory compound in clinical development, to the best of our knowledge
- **Multiple attractive opportunities**
  - Treatment of COPD exacerbations
  - Acute asthma
  - Cystic fibrosis
  - Partnering DPI / nebulizer development for COPD maintenance treatment
  - RPL554 combination products feasible for COPD treatment
- **Highly experienced management team and Board**



## Contact

# Thank you!

For further information please contact:

### **Jan-Anders Karlsson**

Chief Executive Officer  
Verona Pharma plc

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Website: [www.veronapharma.com](http://www.veronapharma.com)

# Share Data

Traded on:

**AIM (VRP) & Xetra (I9S)**

Average daily traded volume:

**3.1 million per day**

over last 30 days

Shares outstanding:

**1,009.92 million**

Market Cap:

Market Cap on 7 September 2015: **£50.1m**

## Shareholder structure 7 September 2015

Fidelity Investments, **7.2%**

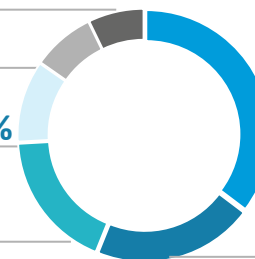
Vivo Capital, **8.1%**

Investec Wealth  
and Investment Ltd, **10.6%**

AVIVA, **18.0%**

Others, **35.3%**

Wales Life Sciences  
Fund, **20.8%**



Others: Retail, Private Client & Other Institutions

### Analysts:

Dr Jens Lindqvist, N+1 Singer: Tel: +44 20 7496 3074; Email: [Jens.Lindqvist@N1Singer.com](mailto:Jens.Lindqvist@N1Singer.com)

Mark Brewer, Hardman & Co: Tel: +44 20 7148 1434; Email: [mb@hardmanandco.com](mailto:mb@hardmanandco.com)



# Strong potential for growth in large global markets

## Respiratory Markets

### COPD

COPD global market of \$12.2 billion in 2013 and expected to increase 5% per year over the next 5 years\*

### Asthma

Asthma had a global market of \$15.1 billion in 2013 and is expected to grow to \$16.1 billion in 2023\*\*

### Cystic fibrosis

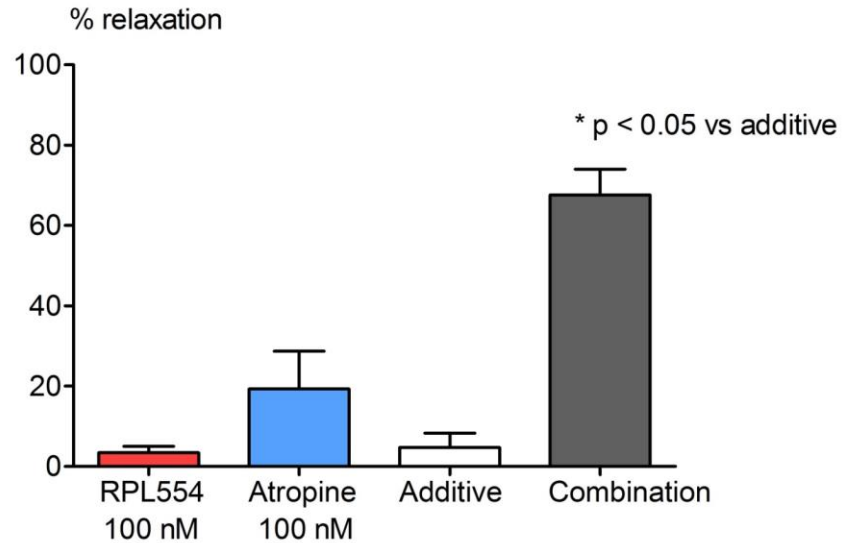
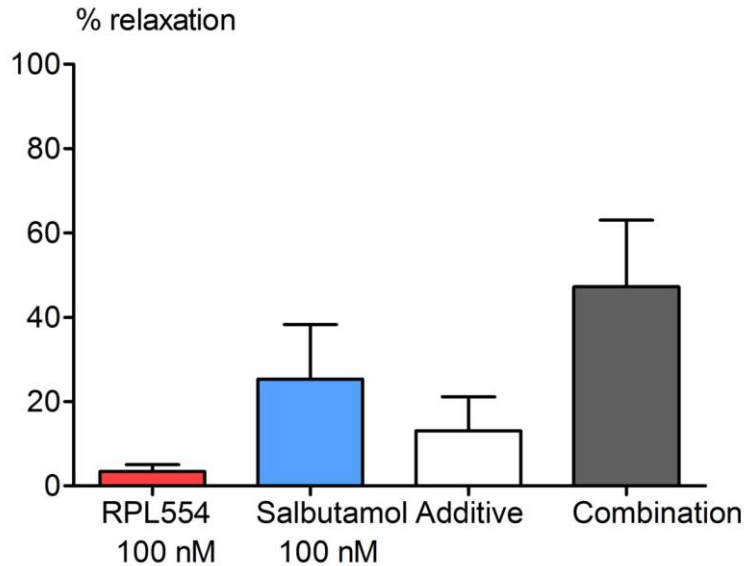
Cystic fibrosis global market is projected to grow from \$0.7billion to \$4.5 billion\*\*\*

\* Novartis presentation, 17-18 June, 2014

\*\* Decision resources 2014

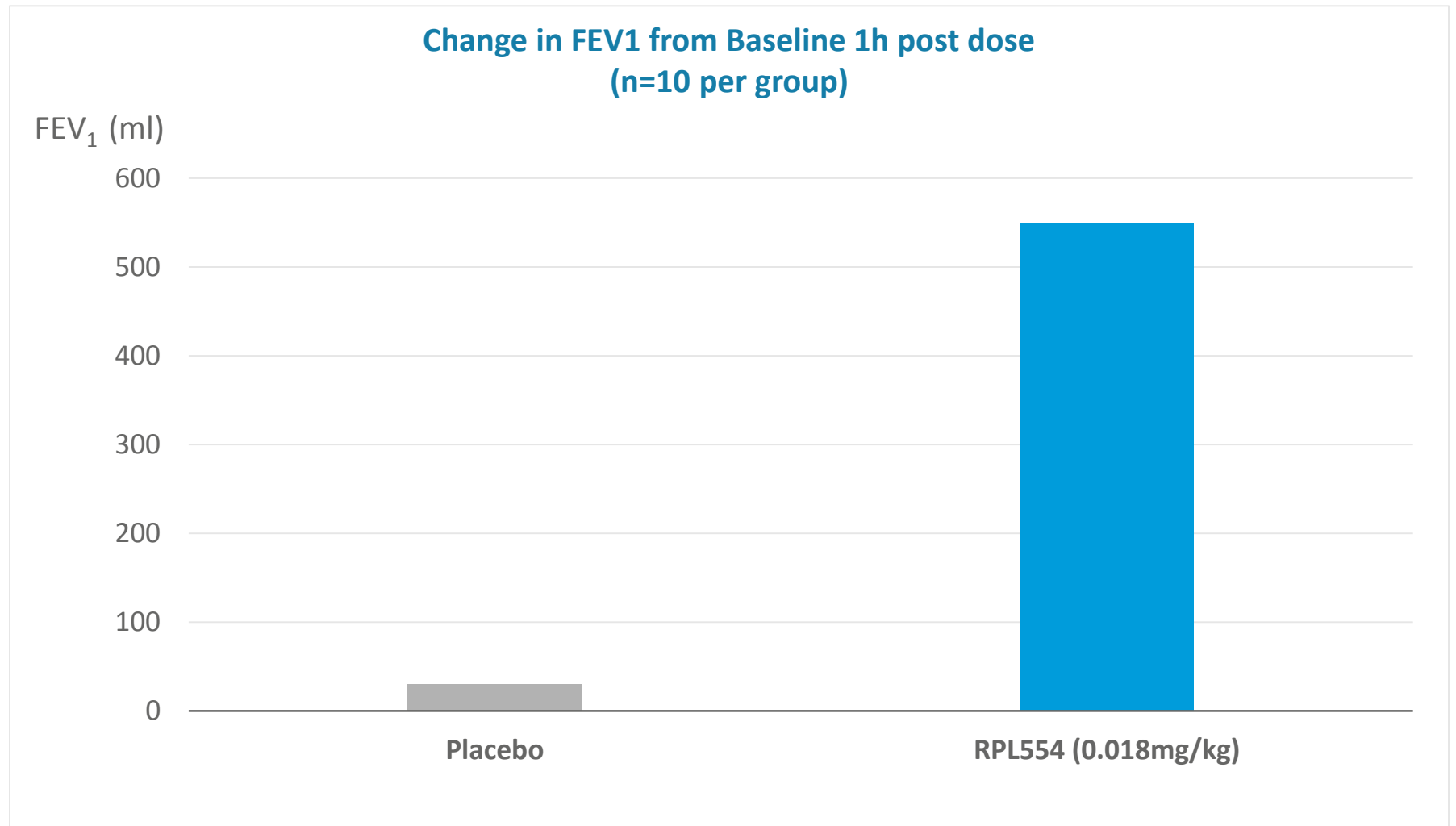
\*\*\* GBI research 2014

# RPL554 acts synergistically with anti-muscarinic agents and is additive with $\beta_2$ agonists to relax human airways in vitro

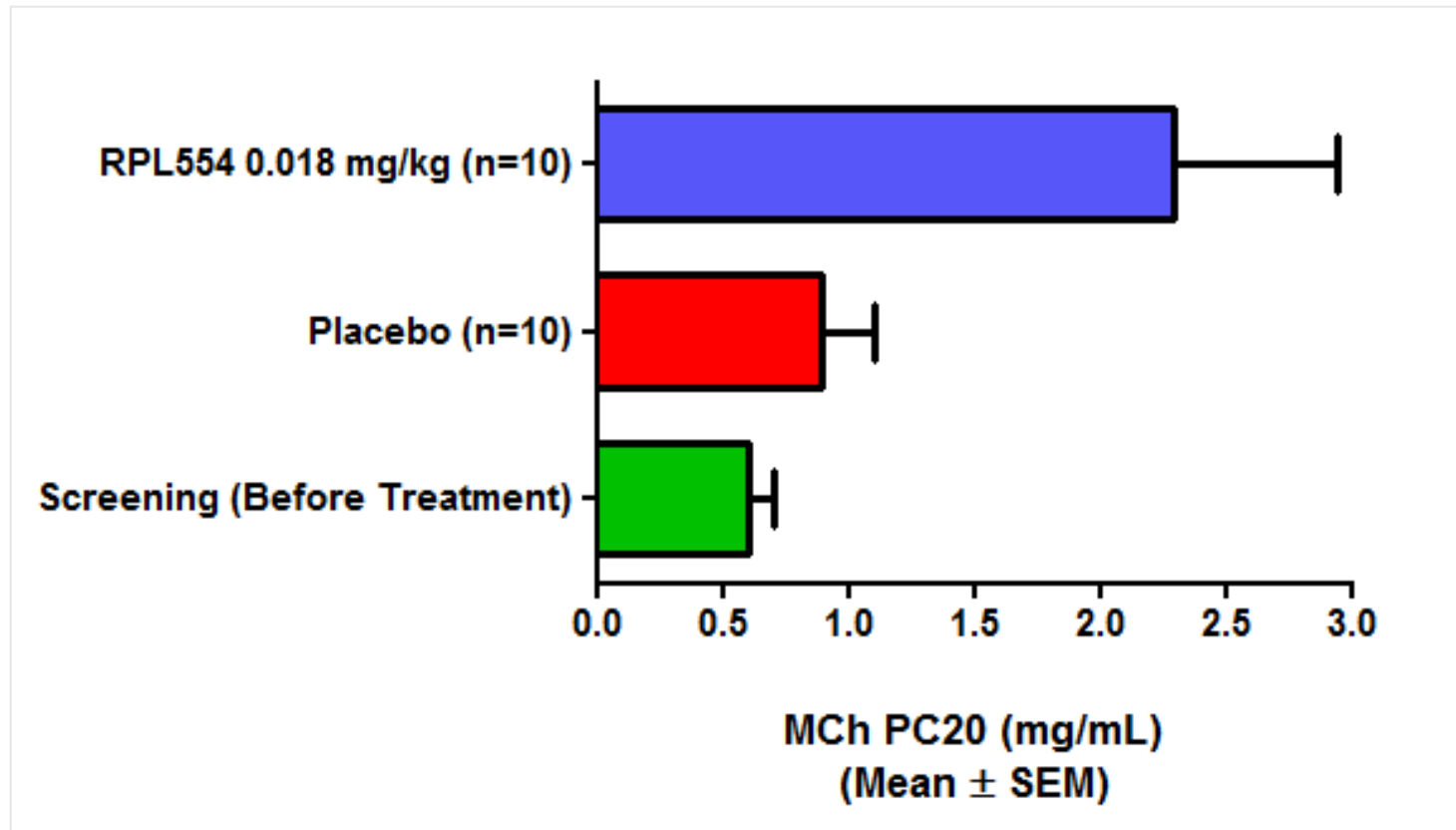


Calzetta et al, JPET 346: 414-423 2013

## RPL554 – large bronchodilator response in mild allergic asthmatics



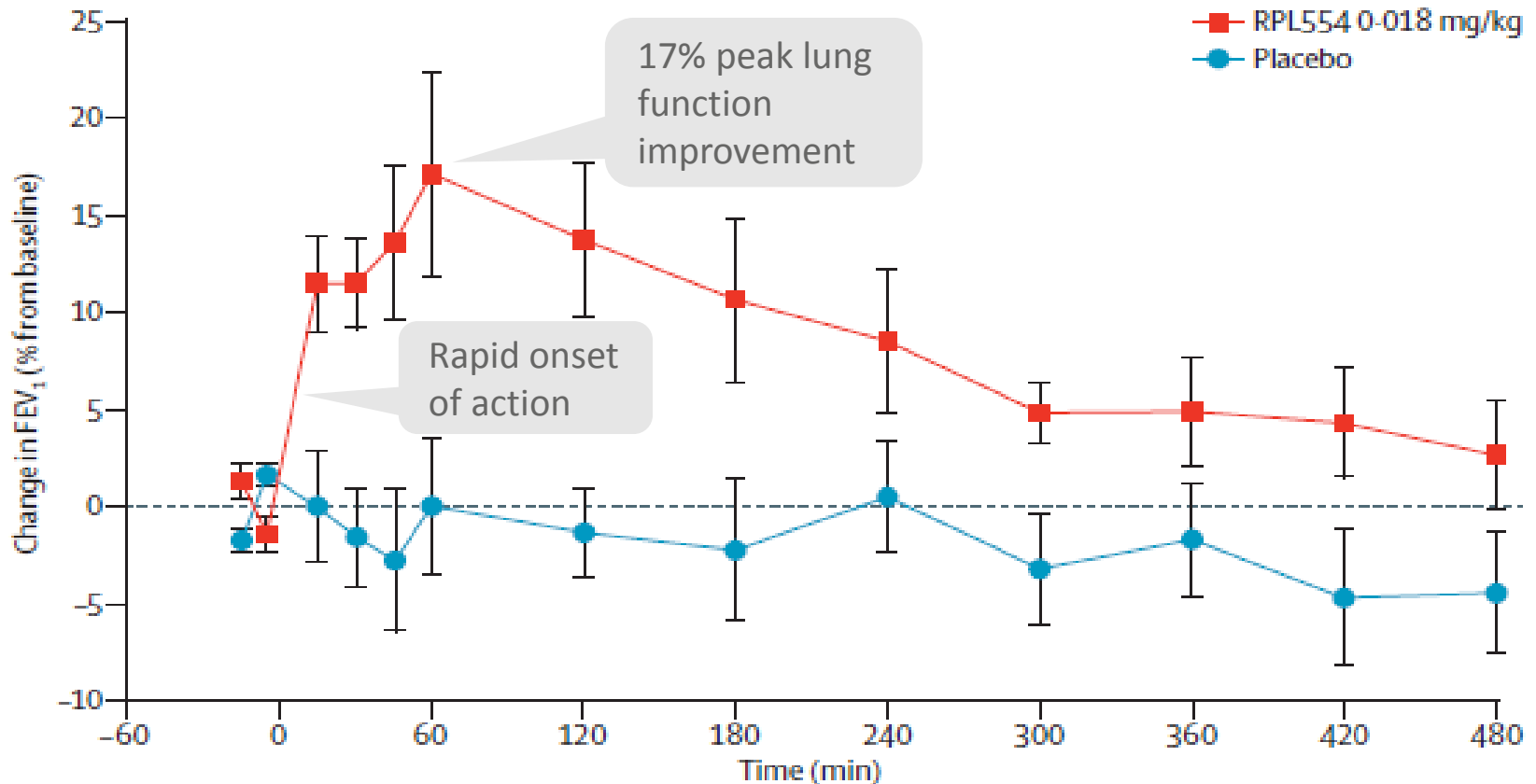
## RPL554 – bronchoprotective effect in mild asthmatics



RPL554 increase in PC20 MCh almost 2 doubling dilutions ( $p < 0.004$  vs placebo)

# Rapid and pronounced bronchodilation in COPD patients

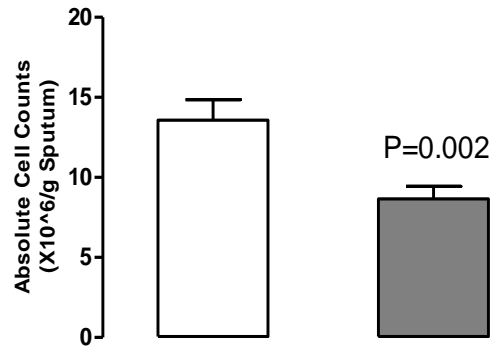
Bronchodilator effects (n=12)



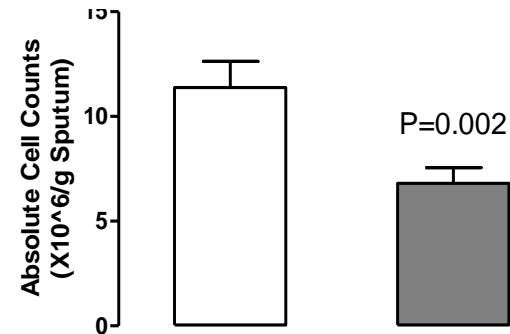
➔ First new class of bronchodilator drug for decades

# Pronounced anti-inflammatory activity in clinical trial, reduction of inflammatory cells in LPS-induced sputum

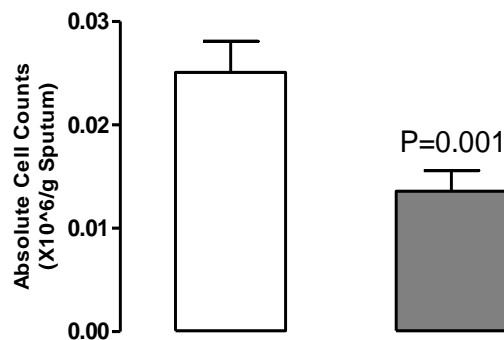
## Total Cell Counts



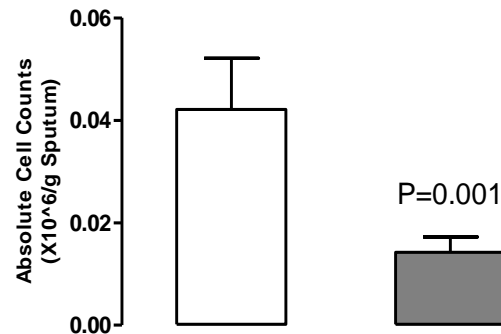
## Neutrophils



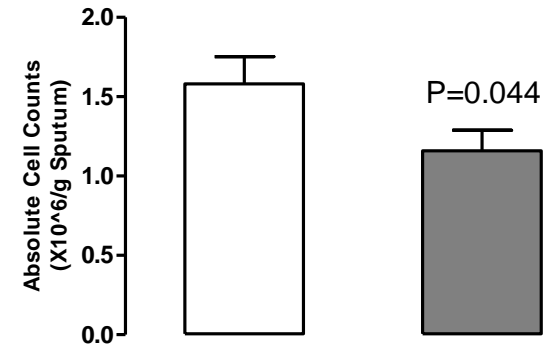
## Eosinophils



## Lymphocytes



## Macrophages



□ Placebo    ■ RPL554 0.018 mg/kg    N=21

➔ Effect after 1 week's daily dosing of RPL554 in human subjects