

The Pharmaxis logo is positioned in the upper right area of the slide. It features the word "pharmaxis" in a white, lowercase, sans-serif font. The background behind the logo consists of several overlapping, curved bands in shades of blue and teal, creating a dynamic, modern feel.

pharmaxis

# Innovative products for respiratory diseases

Annual General Meeting  
October 2012

# Pharmaxis - company overview

- Summary
- A pharmaceutical company which develops therapeutic products for human chronic respiratory diseases.
  - Headquartered in Australia with operations in the US and Europe

Approved products  
Bronchitol® for cystic fibrosis  
Aridol®: diagnosis of asthma

Products in the clinic  
Bronchitol® for bronchiectasis  
ASM8: moderate-severe asthma

Products in development  
PXS64: idiopathic pulmonary fibrosis  
PXS4728: anti-inflammatory  
LOXL2 inhibitor: fibrosis and cancer

Employees	Australia	102
	Europe	35
	USA	13

Production  
GMP manufacture of respirable dry powders



# Bronchitol - Cystic Fibrosis

## • Background

- Genetic disorder affecting ~40,000 in Western Europe, ~30,000 in US and ~3,000 in Australia
- Poorly hydrated, tenacious, thick mucus
- Median predicted age of survival approximately 35 years (2009 – US and UK)

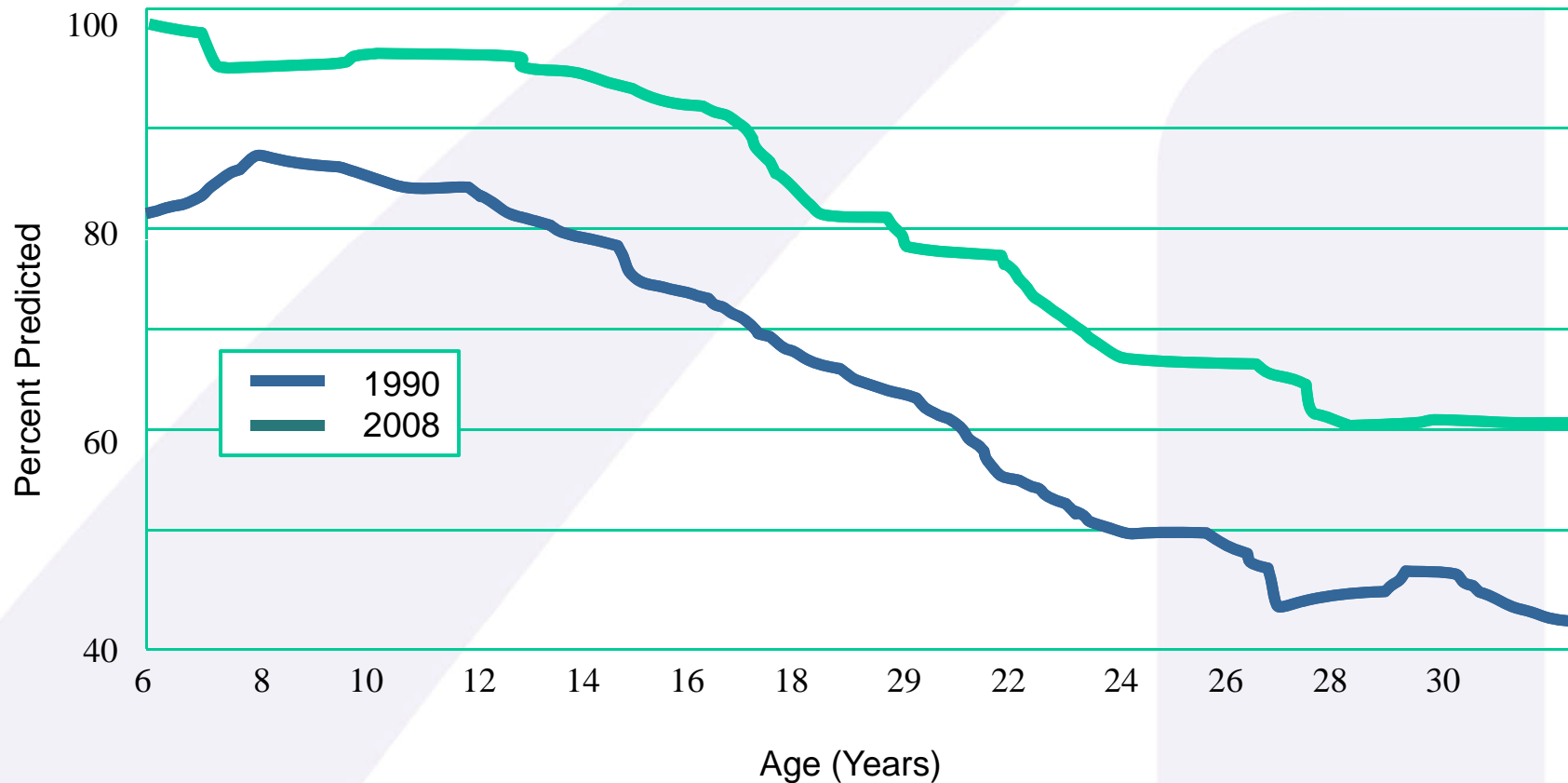


## • Main Therapeutics

- Mostly delivered by nebulizer (preparation, sterilization)
- rhDNase (Pulmozyme®): global sales ~CHF 492m (2011)
- Tobramycin (Tobi®): global sales ~US\$ 279m (2010)
- Aztreonam (Cayston®): approved EU: 09/09; US: 02/10; US sales \$78m in US (2011)

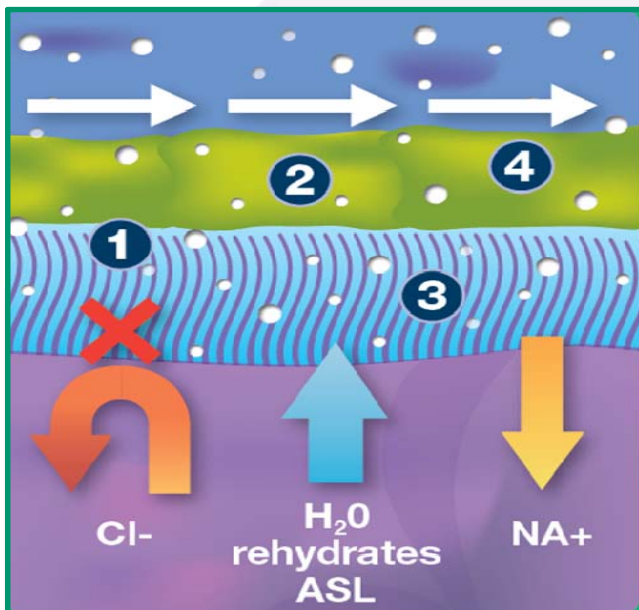
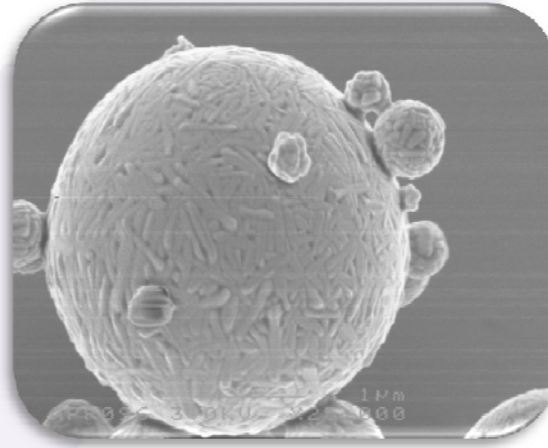


# Median FEV<sub>1</sub> % predicted vs age 1990 - 2008



Median FEV<sub>1</sub> has improved more than 10 percentage points at all ages from 6 to 30 since 1990 however the rate of FEV<sub>1</sub> decline has not improved

# Bronchitol

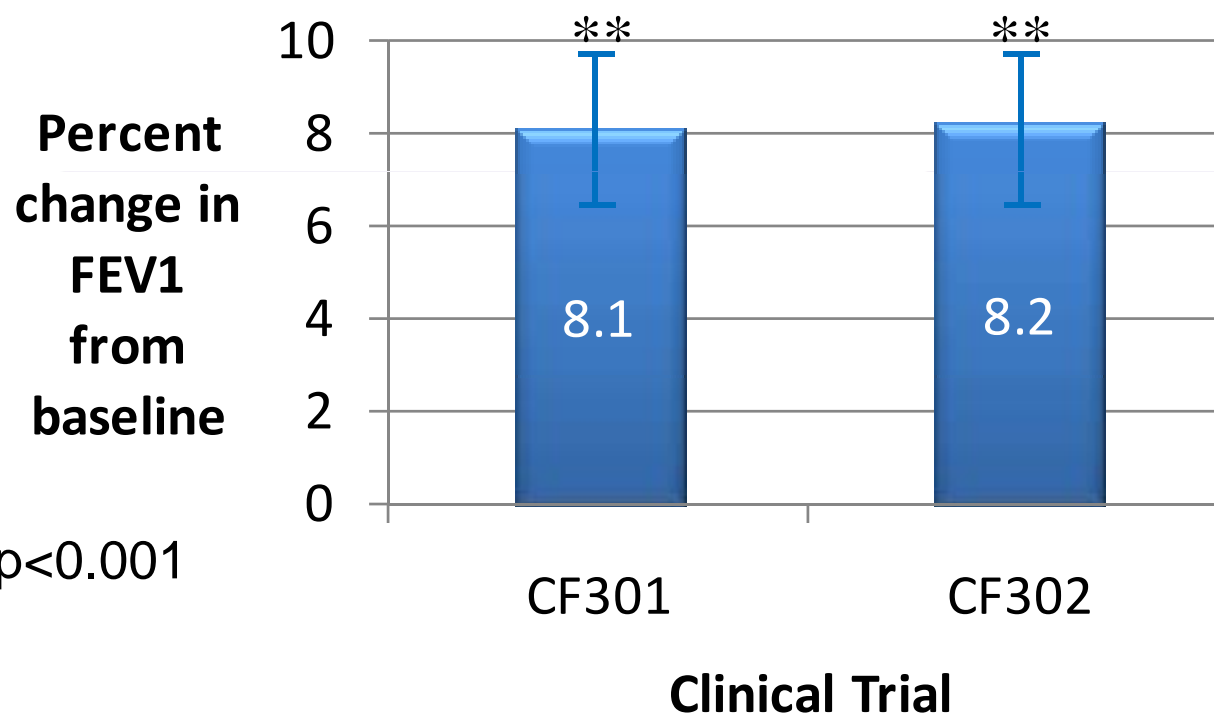


## Bronchitol

- active ingredient mannitol
  - delivered as an inhalable dry powder
- restores airway surface liquid
- increases cilia beat frequency
- mucus flow properties improved
- mucus clearance enhanced

# Sustained Treatment Effect with Bronchitol

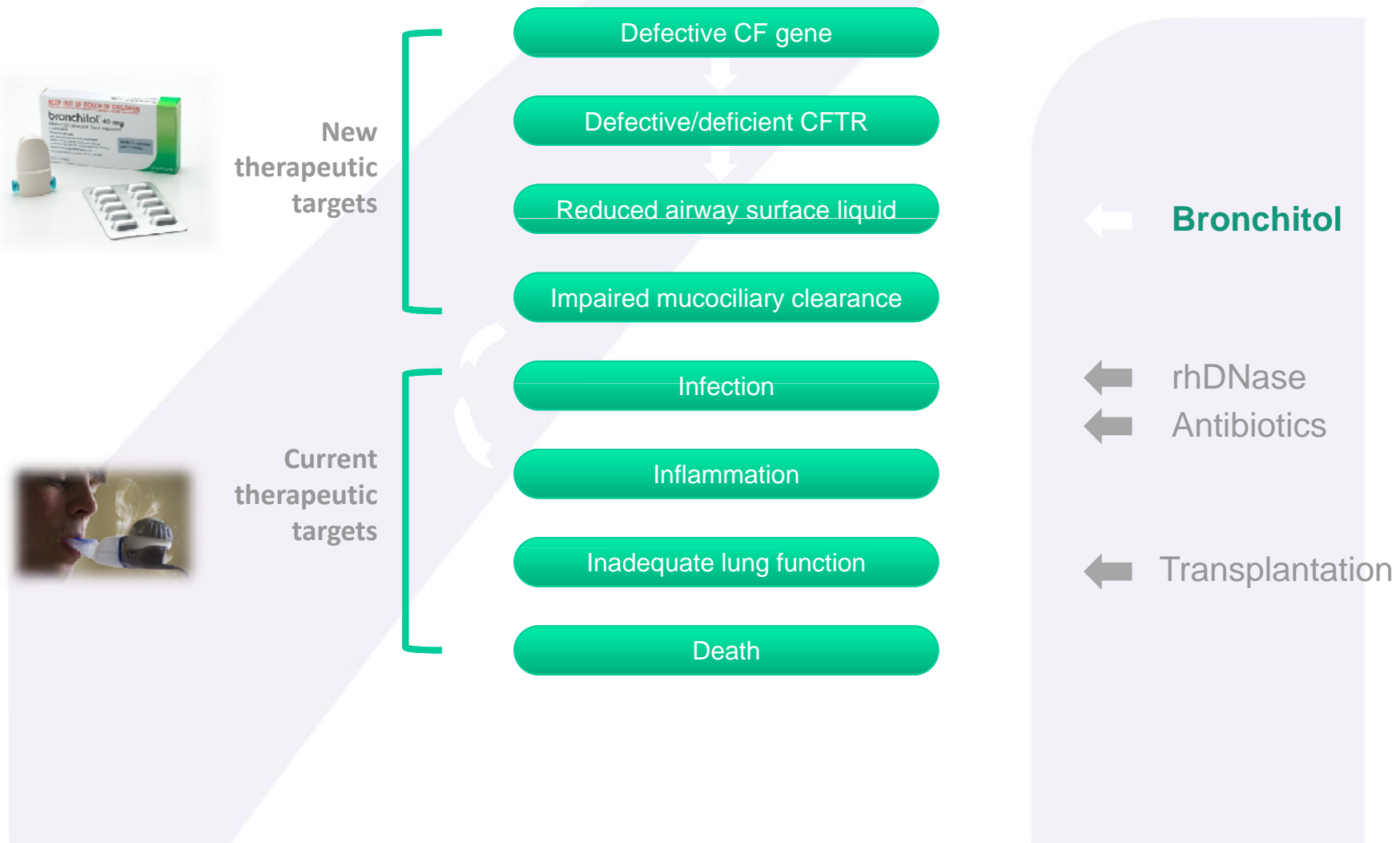
Change in lung function after 12 months Bronchitol treatment



\*\* denotes  $p < 0.001$

*CF301 and CF302 – Double Blind for 6 months followed by Open Label for 6 months*

# Pathophysiological cascade in CF



# Bronchitol – Cystic Fibrosis



## European Union

- Approved for patients >18 years
- Launched in first European countries June 2012



## Australia

- Approved for patients >6 years
- Reimbursement effective August 2012
- Launched August 2012



## USA

- NDA accepted by FDA – July 2012
- FDA review completion target - March 2013



## Rest of world

- Distributor model by country





# Bronchitol in Europe - logistics

pharmaxis

- UK office
- European sales & marketing management
- European pricing
- European support – medical affairs, pharmacovigilance
- Key account managers – UK, Denmark



arvato

»HEALTHCARE BERTELSMANN

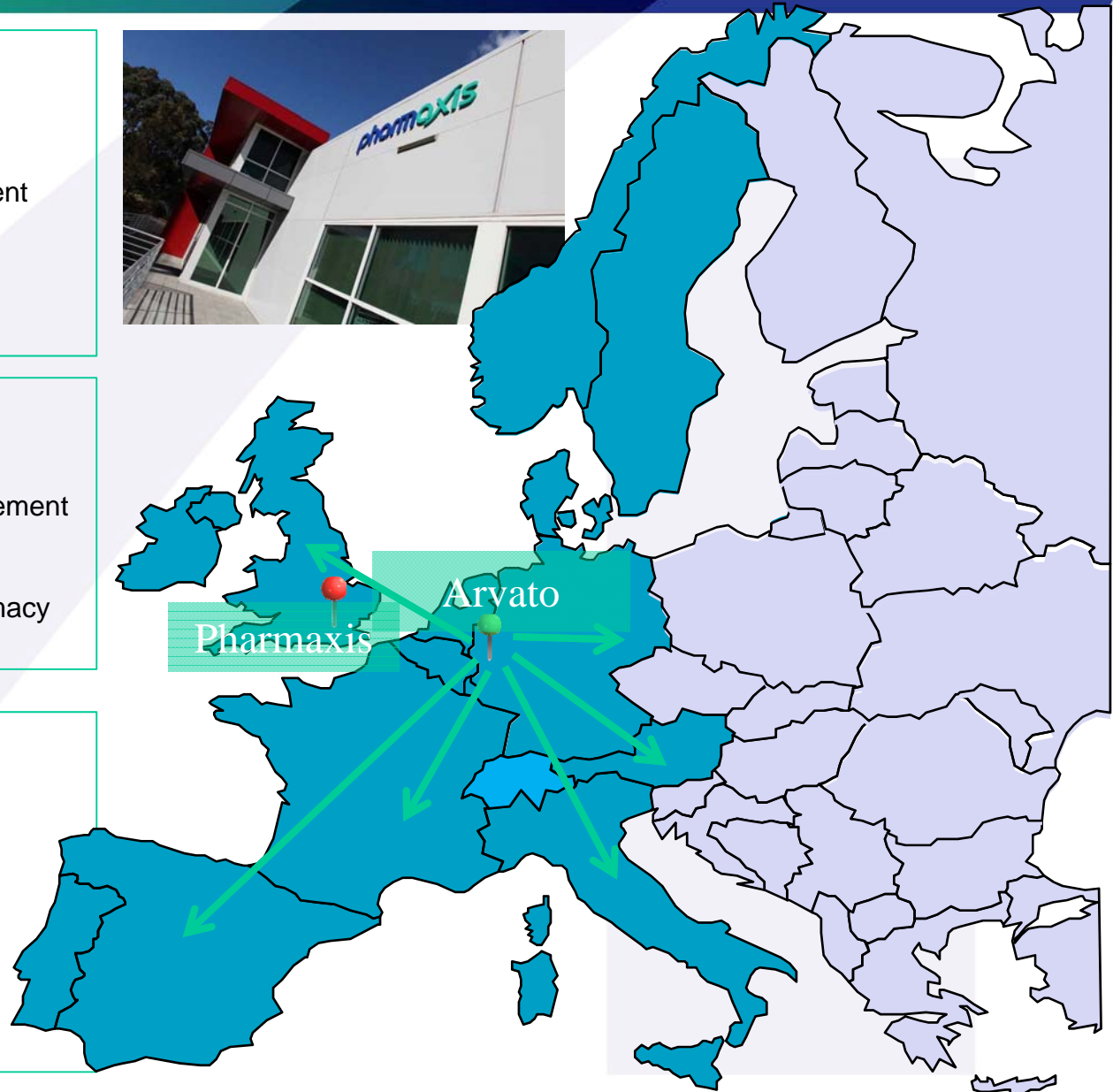
- Centralised European inventory management - Harsewinkel Germany
- Importation
- Distribution/consignment direct to pharmacy
- Invoicing and receivables



QUINTILES®

Sales, marketing and market access

Germany	France
Italy	Spain
Austria	Ireland
Netherlands	Portugal
Sweden	



# Bronchitol in Europe - markets

## ● First countries: 18,000 patients – H2 2012

- Germany (134 CF clinics) - June 2012
- UK (50 CF clinics) – June 2012
- Austria – July 2012
- Denmark – August 2012

## ● Second countries: 20,000 patients – H1 2013

- France, Italy, Sweden, Netherlands, Ireland, Spain, Portugal, Belgium
- To be launched after reimbursement

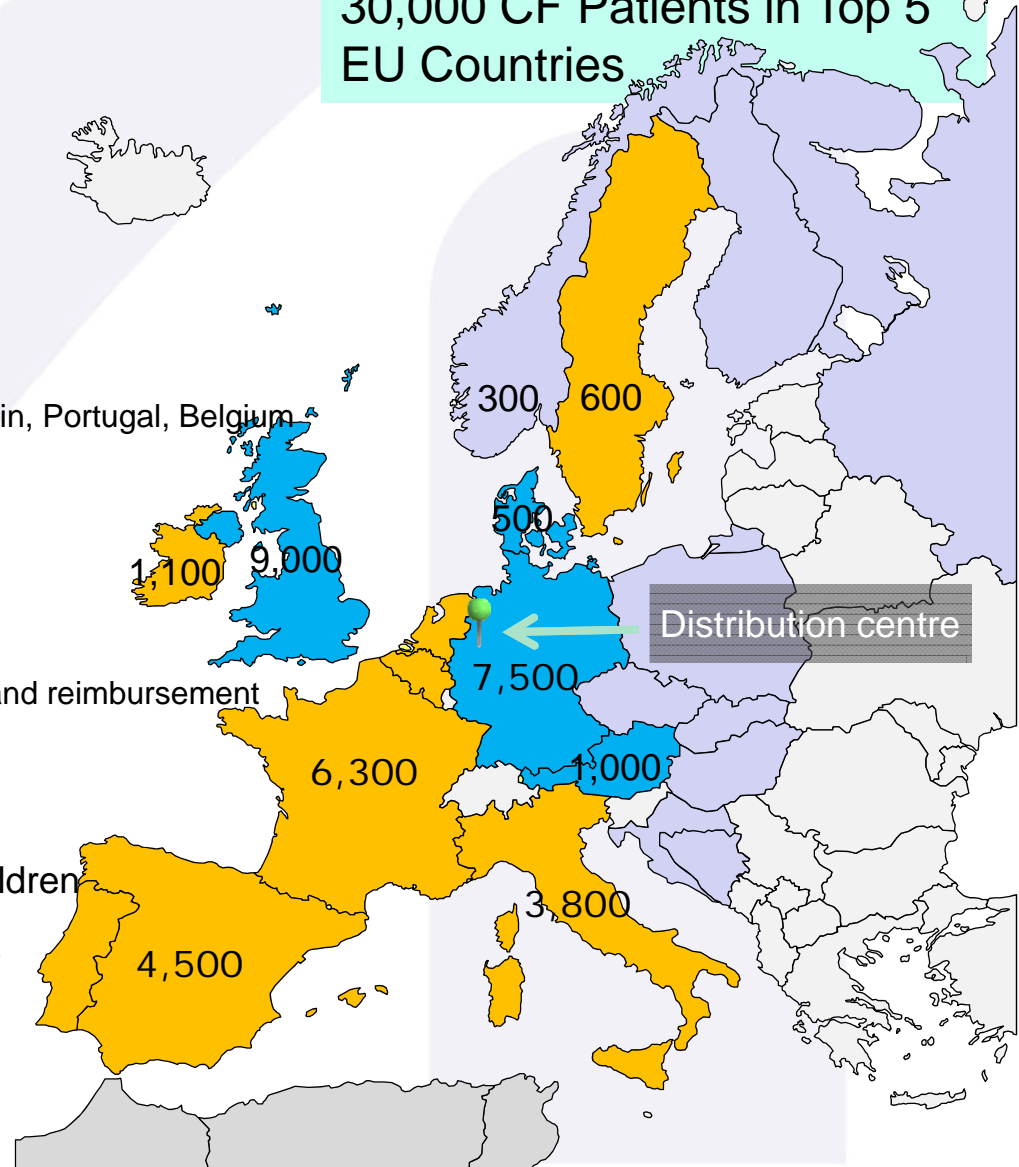
## ● Launch via distributors (~17,000 patients)

- EU (~7,000 patients) – reimbursement key
- Non EU (~10,000 patients) - separate approval and reimbursement
- Country-by-country basis

## ● Label expansion to include adolescents and children

- Adult CF population represents >50% of patients
- Clinical trial required – in review with regulator
- Represents one third potential market

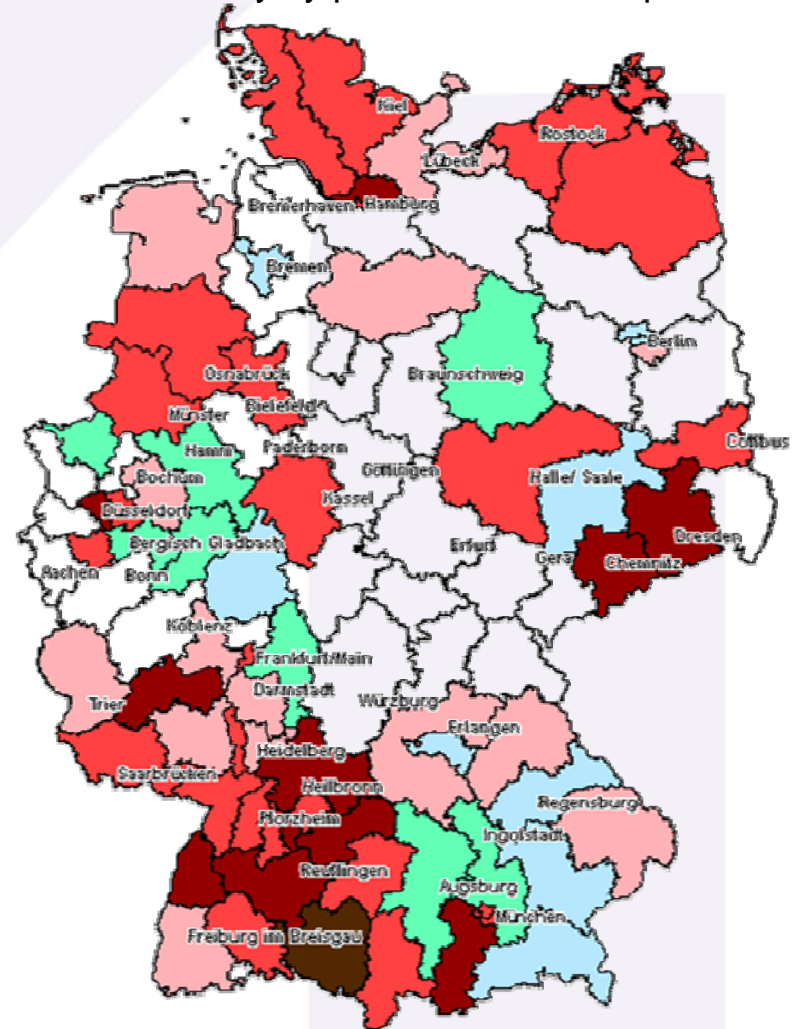
30,000 CF Patients in Top 5 EU Countries



# Progress in Germany

- 134 CF Centres
  - All centres detailed on Bronchitol
  - 75% of centres trained on Bronchitol
  - 40% of centres undertaken an initiation test
  - Orders received from 240 pharmacies
- Emphasis on initiation training, education and retention
- Interest level is high
  - Early adopters consider patients, logistics and plan for an initiation test
  - No significant objections to Bronchitol profile
- Initiation dose logistics
  - 50% prescribed to patient and patient returns to clinic for initiation
  - 50% initiation dose are prescribed for next visit in 2 – 3 months

Sales in Germany by postcode – end Sep 2012



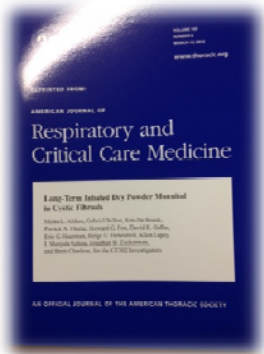
Heatmap – stronger colour represents postcode with highest sales

# Bronchitol - Cystic Fibrosis (Australia)



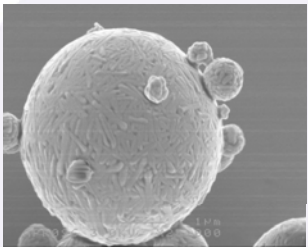
- ~3,000 people with CF in Australia
- Approved for patients aged 6 and over
- Reimbursement from 01 August 2012
- 22 CF centres in Australia
- Bronchitol included on all formularies
- Two key account managers, one marketing manager
- Orders received from all States
  - Feedback positive and no reimbursement issues

# Bronchitol – Cystic Fibrosis (USA)



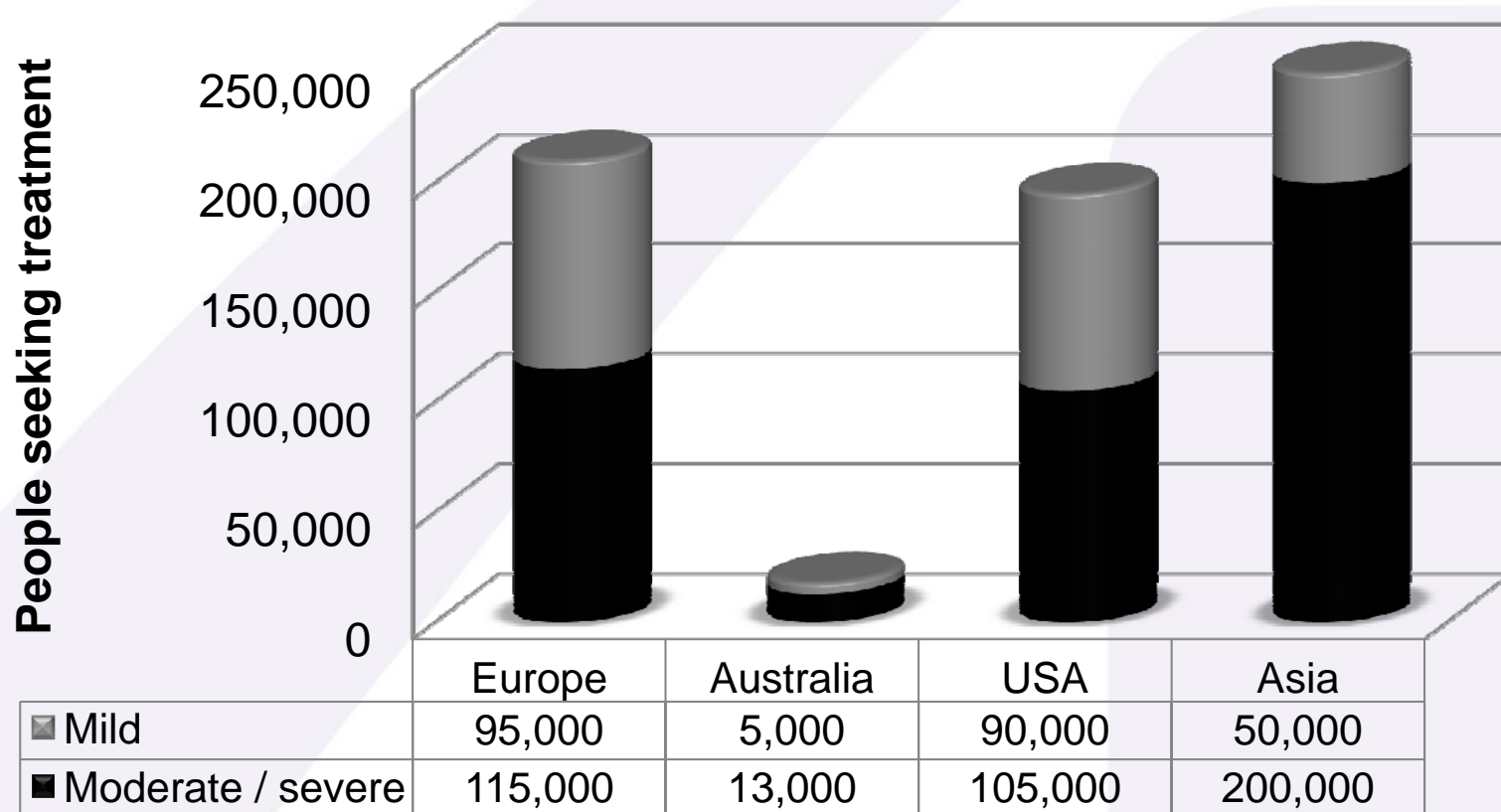
- NDA submitted May 2012
- FDA review scheduled for completion in March 2013
- Advisory committee meeting expected end January 2013
- Requested indication
  - Bronchitol is indicated for the management of cystic fibrosis patients 6 years of age or older to improve pulmonary function
- Orphan drug status provides 7 years market exclusivity from date of FDA approval
- ~250 CF centres – requires 20 - 25 person field force
- ~30,000 people in the US with CF
- Pricing finalised after NDA complete

# Bronchitol - Bronchiectasis



- Abnormal, irreversible dilation of the lower airways
- In 30-50% of cases, the specific cause is unknown
- Daily mucus production, constant coughing, breathlessness, recurrent acute bronchitis with infective exacerbations : low quality of life
- Normal lung clearance impaired
- Current treatments: bronchodilators, antibiotics
- **No** drugs proven effective to clear mucus
- Orphan disease in the USA
- Increasing prevalence & diagnosis

# Bronchiectasis - patients seeking treatment



Note: Data from Datamonitor research and from Frost & Sullivan research (2007)

\*CHEST, August 2012;142(2):432-439. doi:10.1378/chest.11-2209

# Bronchitol – bronchiectasis registration



- **Phase III trial**

- 485 patient, controlled, double blind, randomised, 52 week treatment, 89 sites in US, Europe, South America, Australia

- 400mg twice a day

- **Primary endpoint**

- Reduction in number of exacerbations

- **Secondary endpoints**

- Exercise, mucus clearance, antibiotic use
- Quality of life

- **Status**

- Orphan Drug designation
- Completed recruitment
- Data

USA

Dec 2011

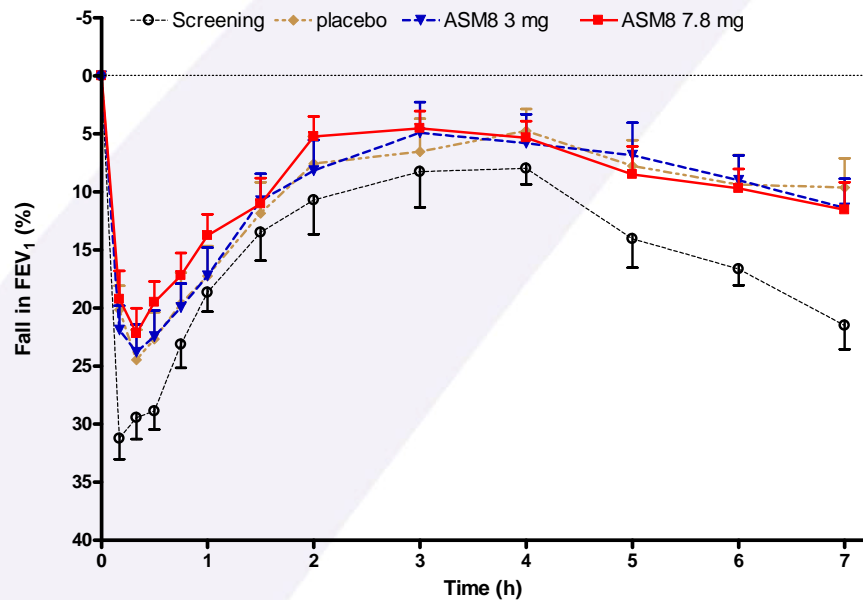
1H 2013



# ASM8 – asthma



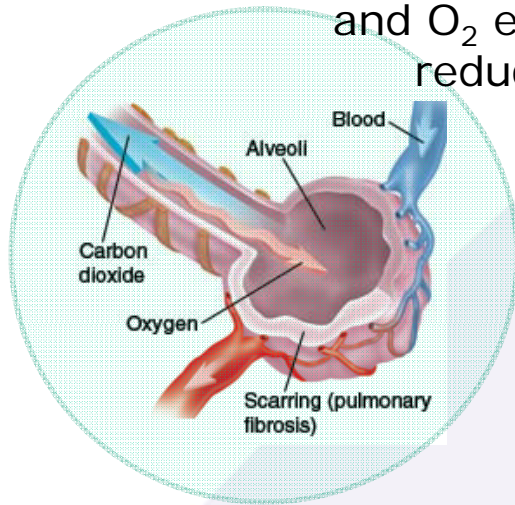
## Phase IIa trial



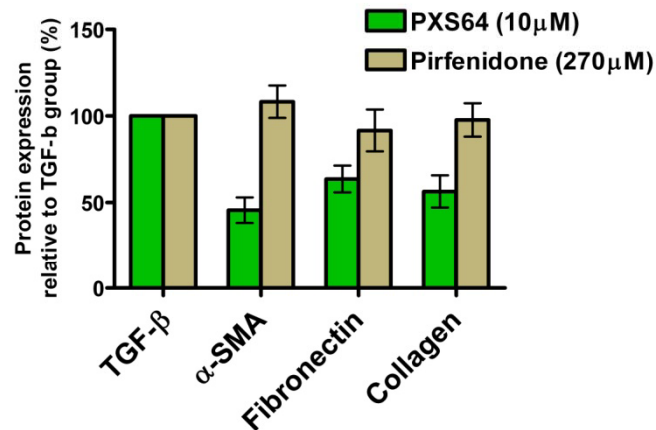
<b>Indication</b>	Moderate to severe asthma for patients who do not respond to inhaled steroids or cannot tolerate high doses
<b>Target Product Profile</b>	<ul style="list-style-type: none"> <li>-Greater efficacy through multi-targeting</li> <li>-Better tolerability &amp; convenience compared with current treatments</li> <li>-Once daily nebulisation</li> </ul>
<b>Market Size</b>	Affects ~12 million people worldwide
<b>Competitors</b>	Xolair (2011: US: US\$ 478m & RoW: CHF 603m)
<b>Status</b>	Phase IIa trial reported
<b>Next Milestone</b>	Publication of full trial results

# PXS25 / PXS64 – Idiopathic Pulmonary Fibrosis

alveoli thickening  
and O<sub>2</sub> exchange  
reduction

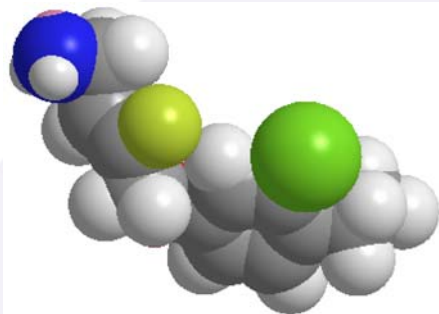
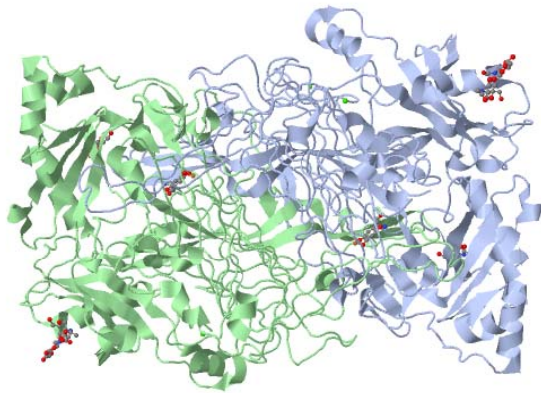


The effect of PXS64 vs pirfenidone in primary derived human lung fibroblasts



<b>Indication</b>	Idiopathic Pulmonary Fibrosis (IPF)
<b>Target</b>	M6P receptor blocker
<b>Target Product Profile</b>	-Inhibition of fibrosis and inflammation to lung tissue -Local administration to the lung -Safe & well tolerated in humans
<b>Market Size</b>	Affects ~200,000 people in the USA
<b>Competitors</b>	Pirfenidone (just launched in EU), immunosuppressives & steroids
<b>Status</b>	Initial Phase I trial (intravenous) completed
<b>Next Milestone</b>	Confirmatory in-vivo data Clinical plan in development

# PXS4728A – Inflammation / fibrosis



small molecule inhibitor of SSAO

<b>Indication</b>	Anti-inflammatory agent with anti-fibrotic properties
<b>Target</b>	SSAO / VAP-1 inhibitor
<b>Target Product Profile</b>	-COPD / IPF -Once daily oral dosing
<b>Market Size</b>	Affects ~23 million people worldwide
<b>Competitors</b>	Significant clinical pre-clinical activity amongst pharmaceutical companies
<b>Status</b>	Pre-clinical development
<b>Next Milestone</b>	Phase 1 clinical trials – Q1 2013

# Aridol®

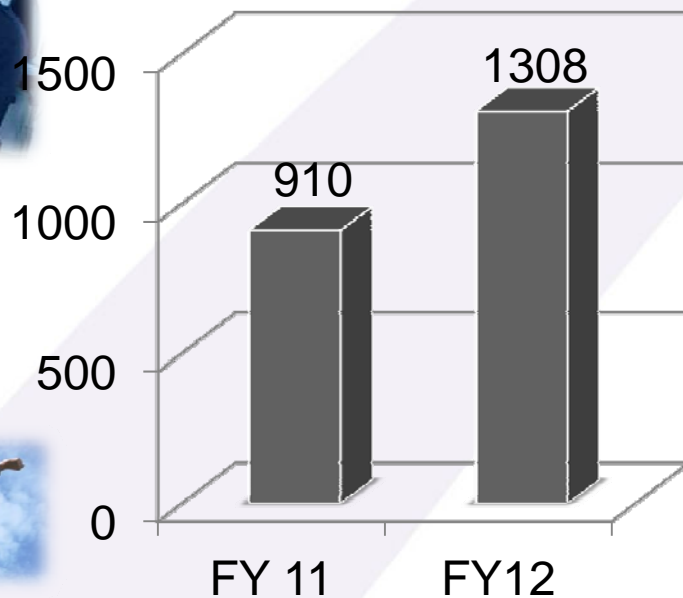
- Identifies airway hyperresponsiveness which helps physicians in the overall assessment of **asthma** and **COPD**
- An **easy-to-use test kit** provides rapid results and doesn't require specialized equipment



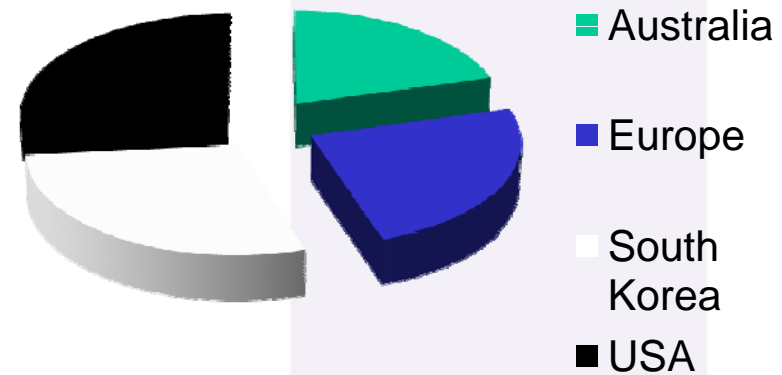
# Aridol – approved and sold around the world



## Sales (\$000's)



## Region contribution



### Future growth

- US and South Korea – full reimbursement for procedure and product
- Asthma management – recent investigator initiated trial published
- COPD – recent investigator initiated trial published

# Summary

## Key Events and activities for 2013



1. Commercialisation of Bronchitol in Europe and Australia All year
2. Opening up additional markets for Bronchitol
3. Prosecution of U.S. NDA with the FDA



- |   |         |
|---|---------|
| Advisory committee meeting                              | Q1 2013 |
| FDA target completion date                              | Q1 2013 |
| 4. Reporting of Bronchitol bronchiectasis Phase 3 trial | Q2 2013 |

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# Chief Financial Officer

David McGarvey

**Annual General Meeting**

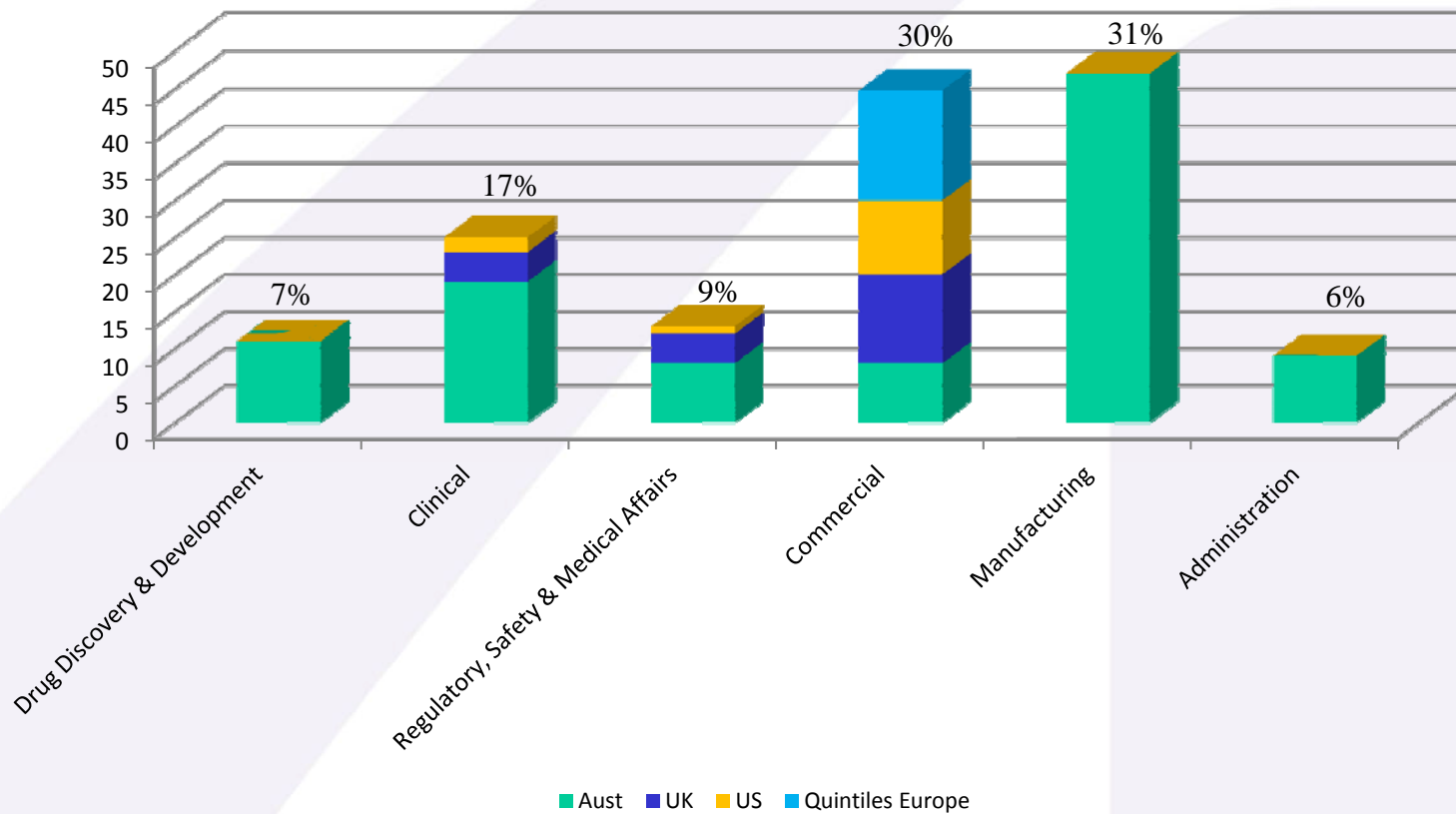
October 2012

# Financial Statements

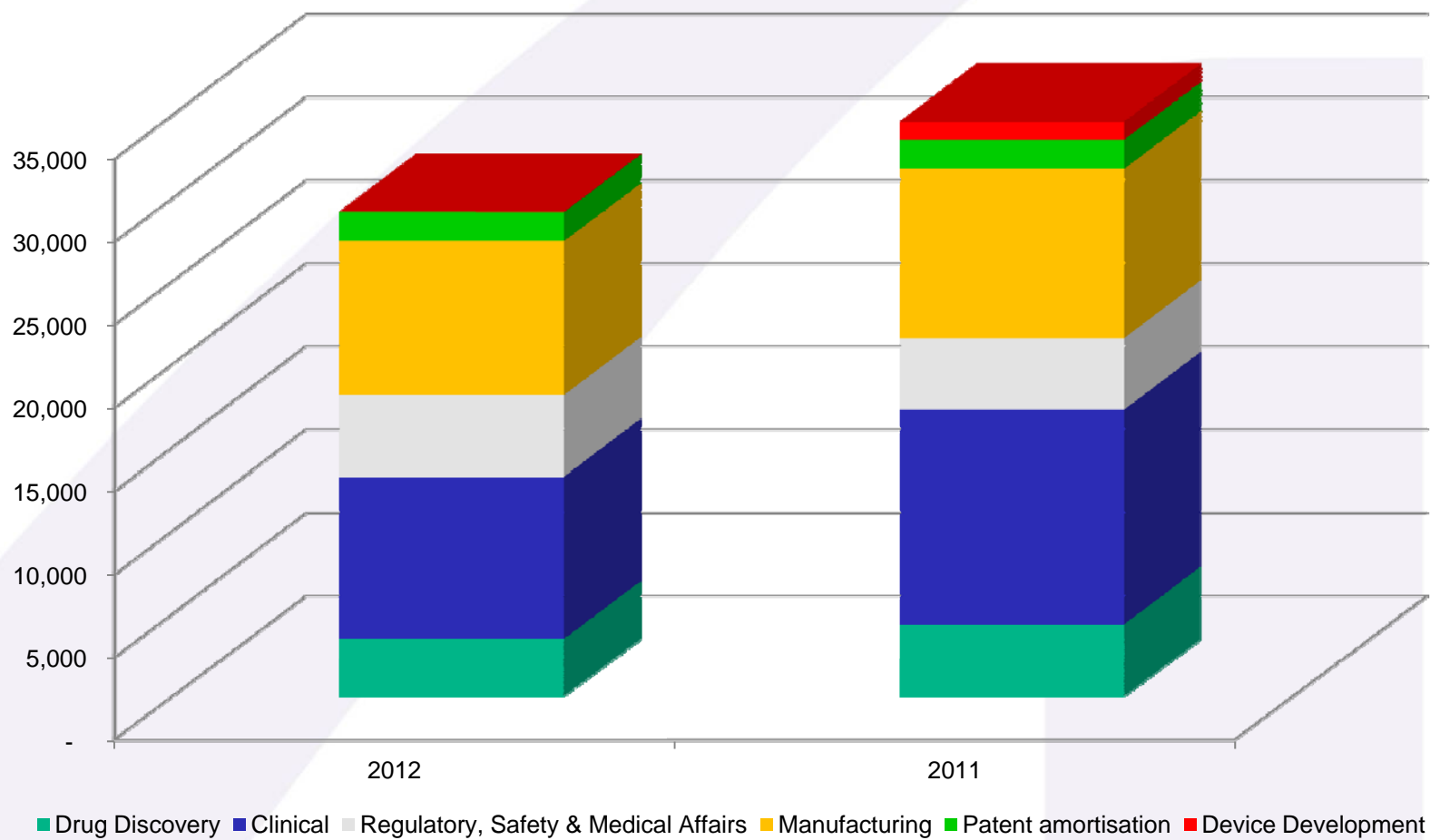
Year ended 30 June	<u>2012</u>	<u>2011</u>	<u>2010</u>	<u>2009</u>	<u>2008</u>
	A\$'000	A\$'000	A\$'000	A\$'000	A\$'000
<b>Income Statements</b>					
Revenue from sale of good	1,331	910	828	595	527
Gross profit	809	568	521	442	398
Interest	3,049	3,083	3,935	5,347	7,402
Other income	3,874	465	616	523	1,576
Expenses					
Research & development	(29,222)	(34,632)	(35,140)	(29,308)	(19,996)
Commercial	(11,073)	(9,163)	(5,657)	(6,202)	(4,557)
Administration	(5,387)	(5,171)	(9,715)	(5,800)	(5,231)
Finance expenses	(768)	(859)	(854)	(122)	-
Total expenses	(46,450)	(49,825)	(51,366)	(41,432)	(29,784)
Loss before income tax	(38,718)	(45,709)	(46,294)	(35,120)	(20,408)
Income tax expense	74	(49)	(51)	(51)	(32)
Loss for the year	(38,644)	(45,758)	(46,345)	(35,171)	(20,440)
Depreciation & amortisation	4,904	4,767	2,783	1,242	1,024
Fair value of securities issued to employees	956	1,567	2,495	2,432	3,434



# Headcount – total 150



# Research & Development

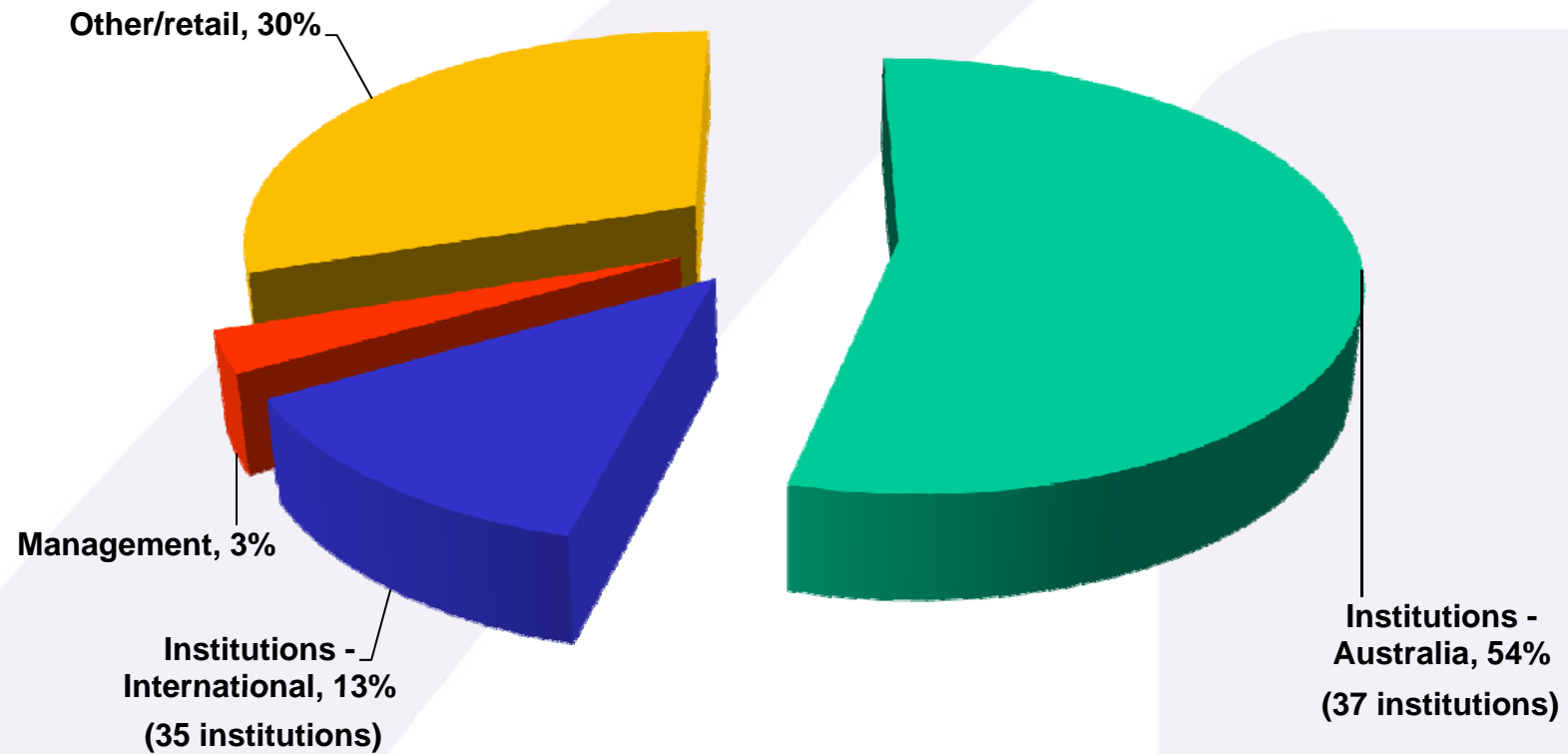


# Financial Statements

As at 30 June	<u>2012</u>	<u>2011</u>	<u>2010</u>	<u>2009</u>	<u>2008</u>
	A\$'000	A\$'000	A\$'000	A\$'000	A\$'000
<b>Balance Sheet Data</b>					
Cash and cash equivalents	81,475	44,343	85,787	124,993	111,842
Plant & equipment	27,683	30,570	32,537	32,698	3,668
Intangible assets	14,143	15,954	17,702	1,193	1,227
Total assets	131,700	94,572	140,767	163,997	125,049
Total liabilities	(21,897)	(23,742)	(25,751)	(26,306)	(5,928)
Total shareholders' equity	109,803	70,830	115,016	137,691	119,121
<b>Share Data</b>					
Ordinary shares on issue	307,631	228,290	225,410	217,659	194,515
Options over ordinary shares on issue	11,822	12,727	13,155	15,075	11,536

# Share Capital

(including options)



30 September 2012: 308m shares; 12m options