Innovative products for respiratory diseases

pharmaxis

Annual General Meeting

October 2012

Pharmaxis - company overview

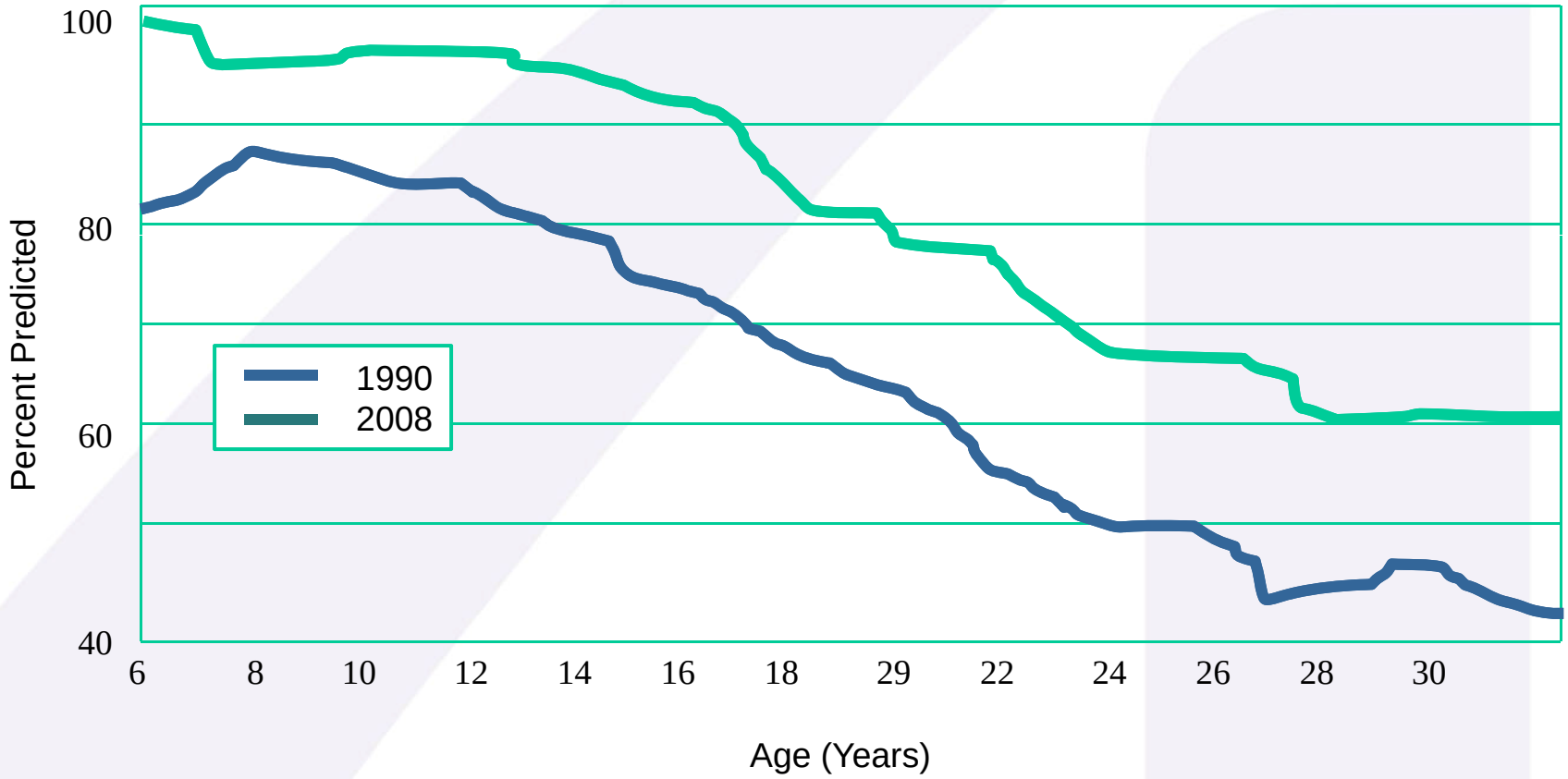
Summary	• A pharmaceutical company which develops therapeutic products for human chronic respiratory diseases. • Headquartered in Australia with operations in the US and Europe	
Approved products	Bronchitol® for cystic fibrosis Aridol®: diagnosis of asthma	
Products in the clinic	Bronchitol® for bronchiectasis 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)

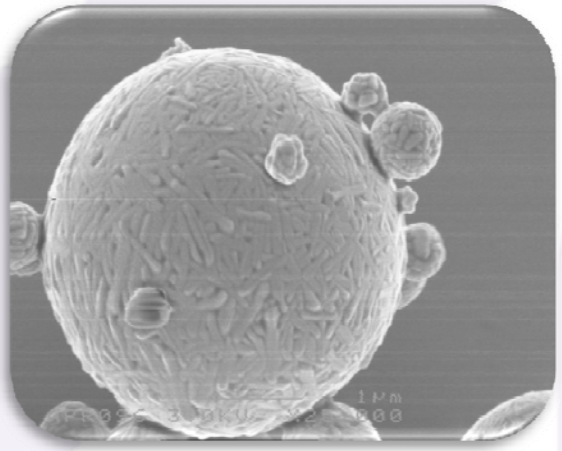
Median FEV_1 % predicted vs age 1990 - 2008

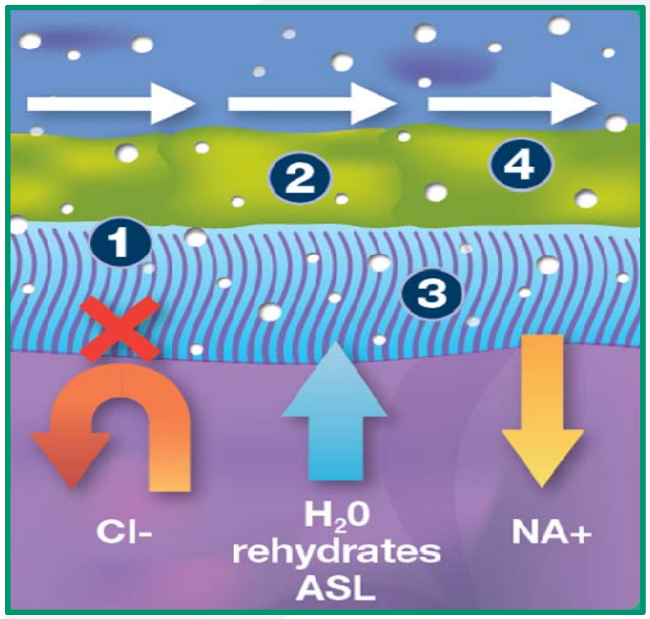


Median FEV_1 has improved more than 10 percentage points at all ages from 6 to 30 since 1990 however the rate of FEV_1 decline has not improved

2008 CFF Registry

Bronchitol



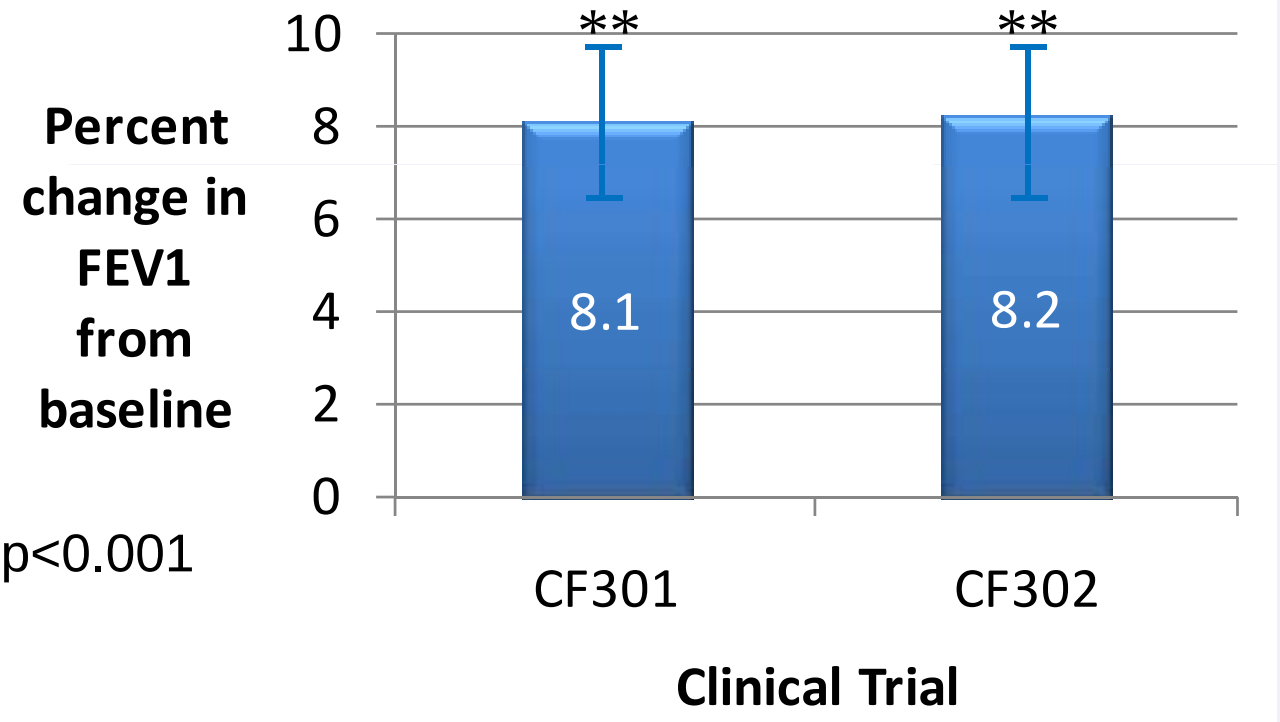


Bronchitol

- 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

New therapeutic targets

Defective CF gene

Defective/deficient CFTR

Reduced airway surface liquid

Impaired mucociliary clearance

Bronchitol

Current therapeutic targets

Infection

rhDNase

Antibiotics

Inflammation

Inadequate lung function

Transplantation

Death

Adapted from Davis 1996 Am J Respir Crit Care Med

Bronchitol – Cystic Fibrosis

<u>European Union</u>

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

<u>Australia</u>

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

<u>USA</u>

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

<u>Rest of world</u>

- 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

»HEALTHCARE arvato BERTELSMANN

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

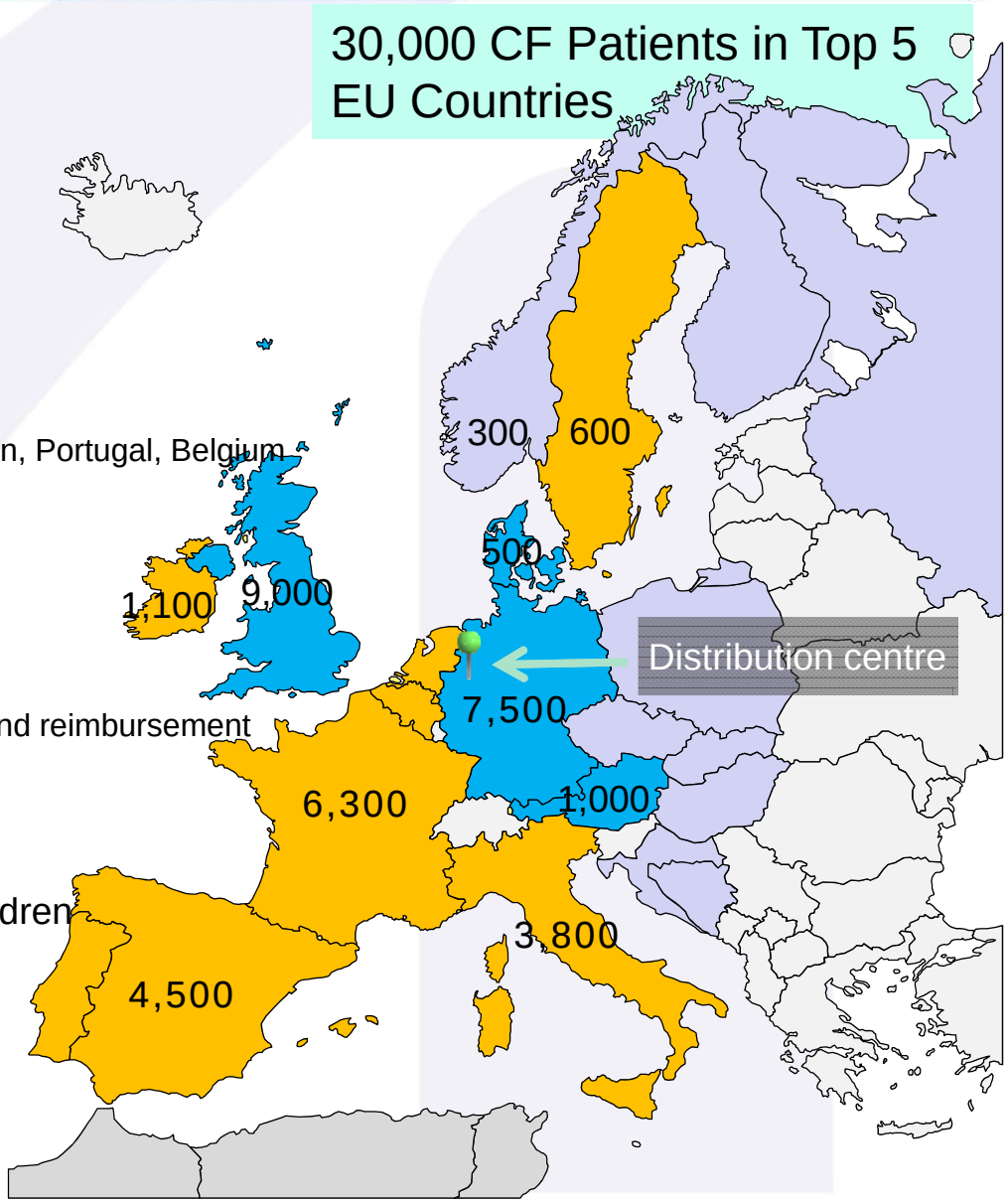
QUINTILES

Sales, marketing and market access

Germany	France
Italy	Spain
Austria	Ireland
Netherlands	Portugal
Sweden	

Bronchitol in Europe - markets

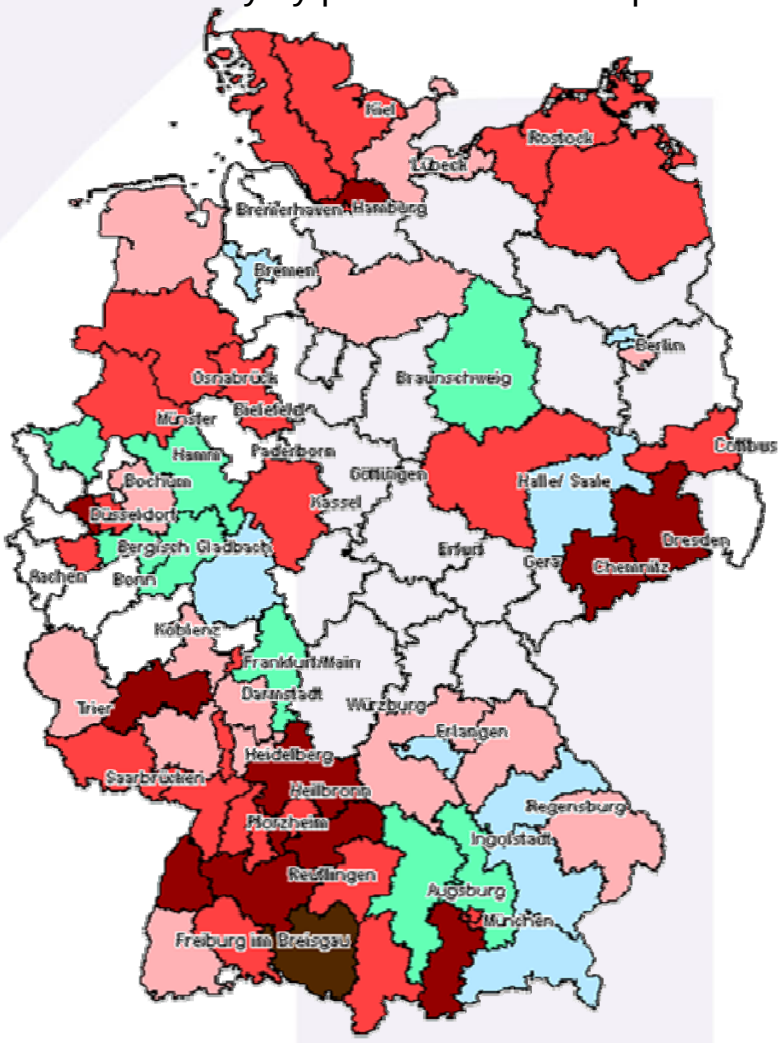
- First countries: 18,000 patients – H2 2012
  - Germany (134 CF clinics) - June 2012
  - UK (50 CF clinics) – June 2012
  - Austria – July 2012
  - Denmark – August 2012
- Second countries: 20,000 patients – H1 2013
  - France, Italy, Sweden, Netherlands, Ireland, Spain, Portugal, Belgium
  - To be 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



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

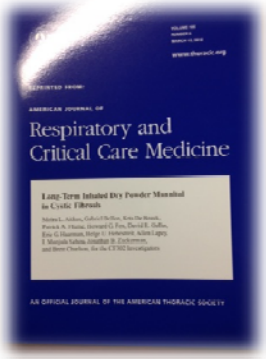
Bronchitol - Cystic Fibrosis (Australia)

- ~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

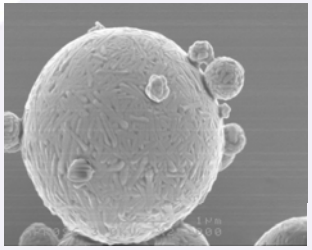
- Orders received from all States
  - Feedback positive and no reimbursement issues

Bronchitol – Cystic Fibrosis (USA)



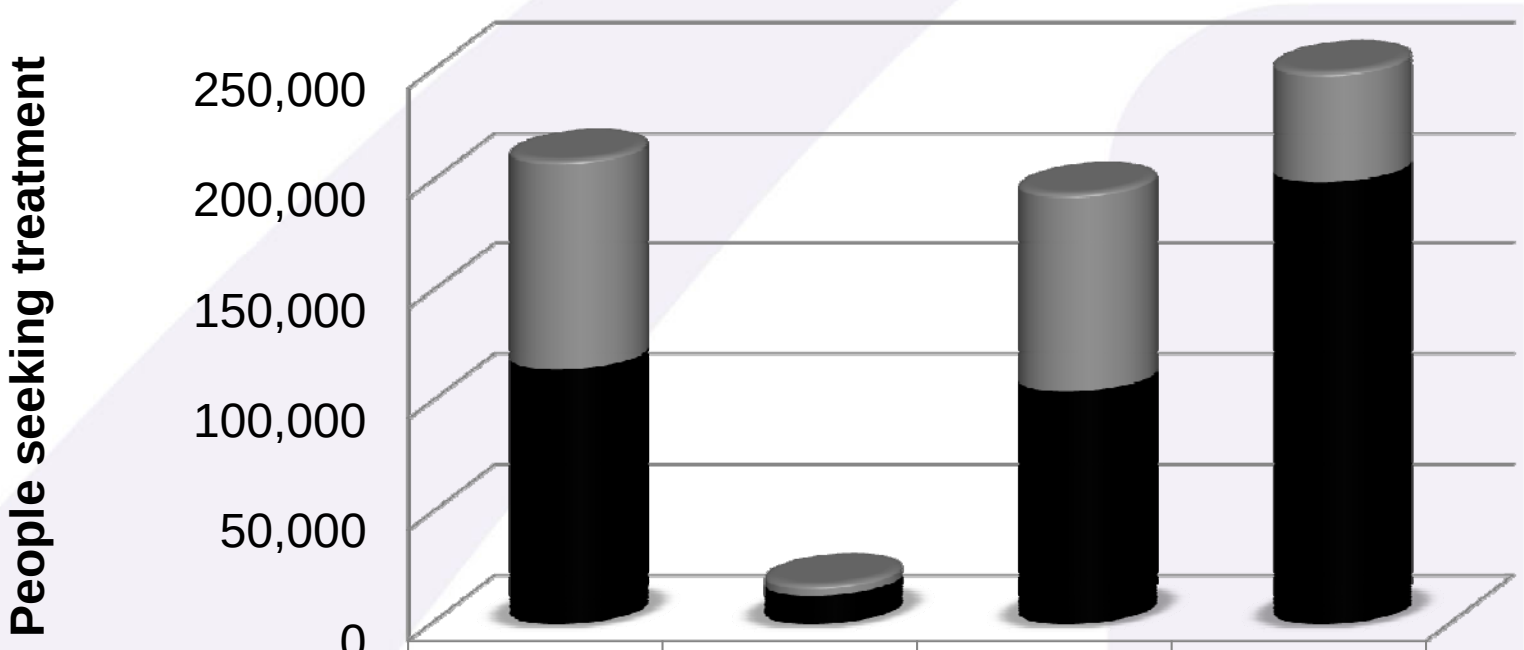
- NDA submitted May 2012
- FDA review scheduled for completion in March 2013
- Advisory committee meeting expected end January 2013
- Requested indication
  - Bronchitol is indicated for the management of cystic fibrosis patients 6 years of age or older to improve pulmonary function
- Orphan drug status 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



	Europe	Australia	USA	Asia
Mild	95,000	5,000	90,000	50,000
Moderate / severe	115,000	13,000	105,000	200,000

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

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

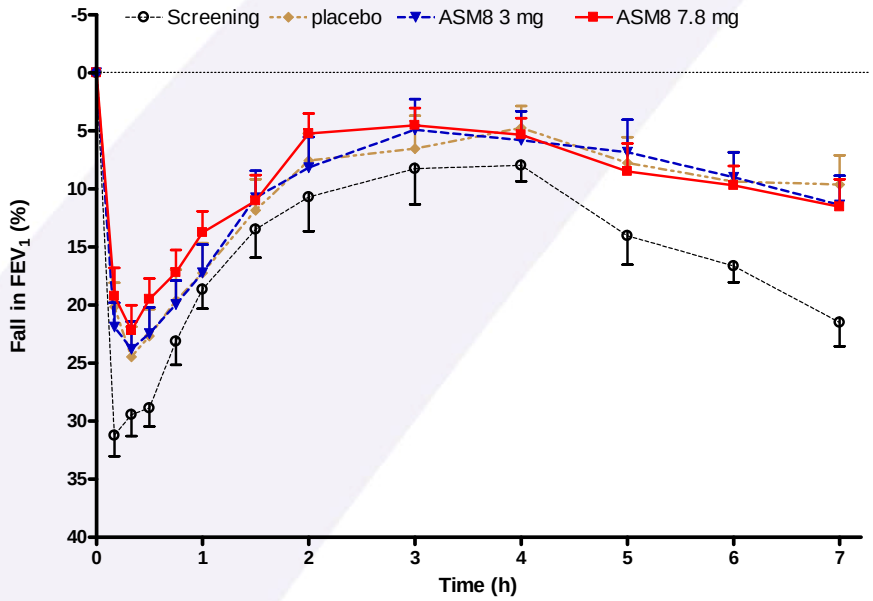
Bronchitol – bronchiectasis registration

- **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	USA
• Completed recruitment	Dec 2011
• Data	1H 2013

ASM8 – asthma

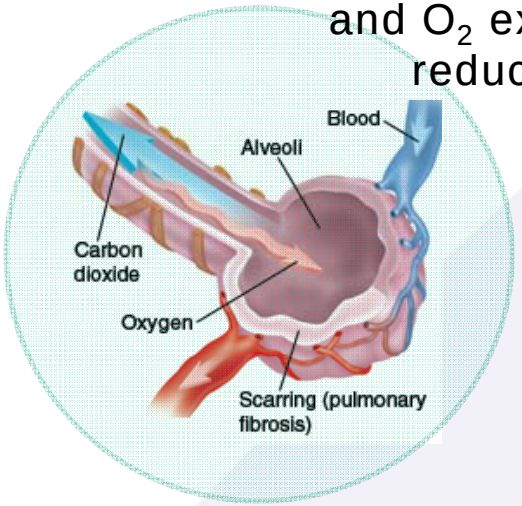
Phase IIa trial



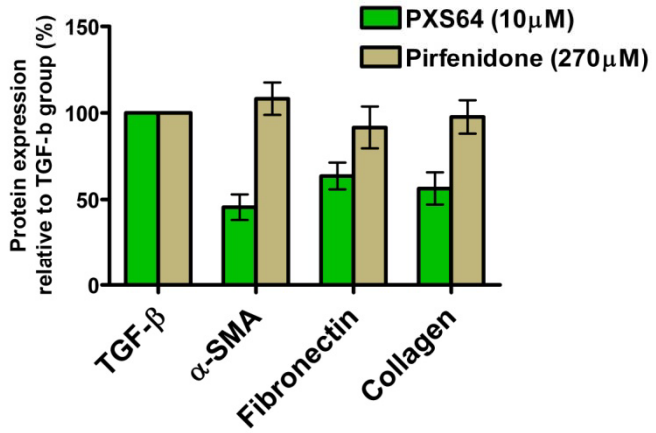
Indication	Moderate to severe asthma for patients who do not respond to inhaled steroids or cannot tolerate high doses
Target Product Profile	-Greater efficacy through multi-targeting -Better tolerability & convenience compared with current treatments -Once daily nebulisation
Market Size	Affects ~12 million people worldwide
Competitors	Xolair (2011: US: US$ 478m & RoW: CHF 603m)
Status	Phase IIa trial reported
Next Milestone	Publication of full trial results

PXS25 / PXS64 – Idiopathic Pulmonary Fibrosis

alveoli thickening and O_2 exchange reduction

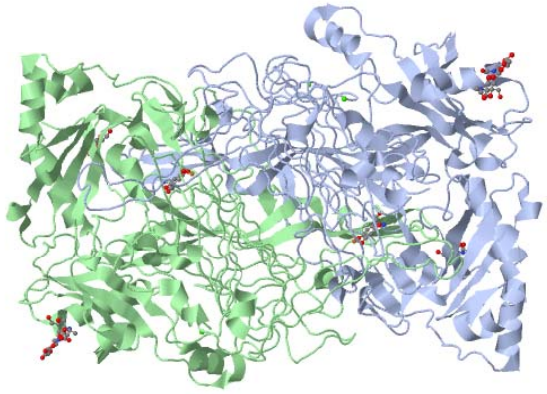


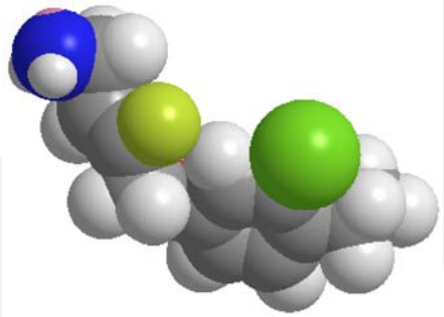
The effect of PXS64 *vs* pirfenidone in primary derived human lung fibroblasts



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

PXS4728A – Inflammation / fibrosis





small molecule inhibitor of SSAO

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

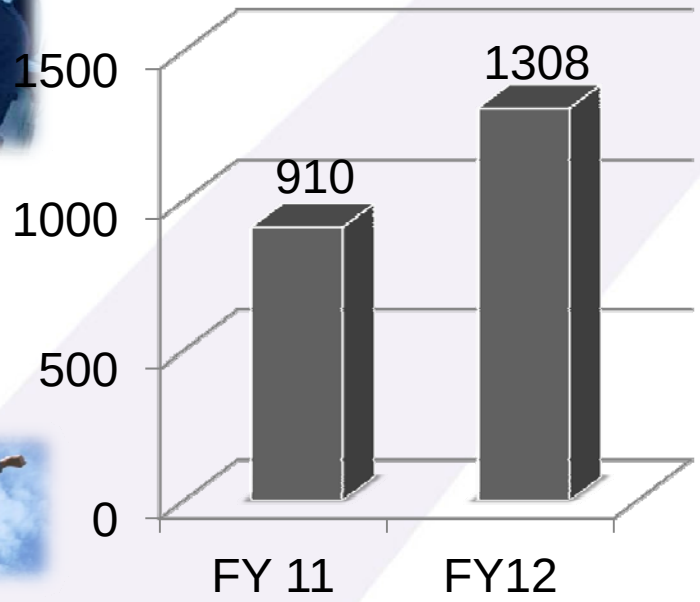
Aridol®

- Identifies airway hyperresponsiveness which helps physicians in the overall assessment of **asthma** and **COPD**

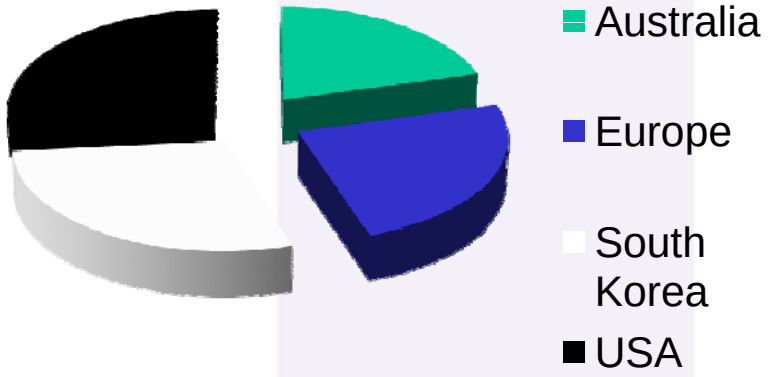
- An **easy-to-use test kit** provides rapid results and doesn't require specialized equipment

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

Chief Financial Officer

David McGarvey

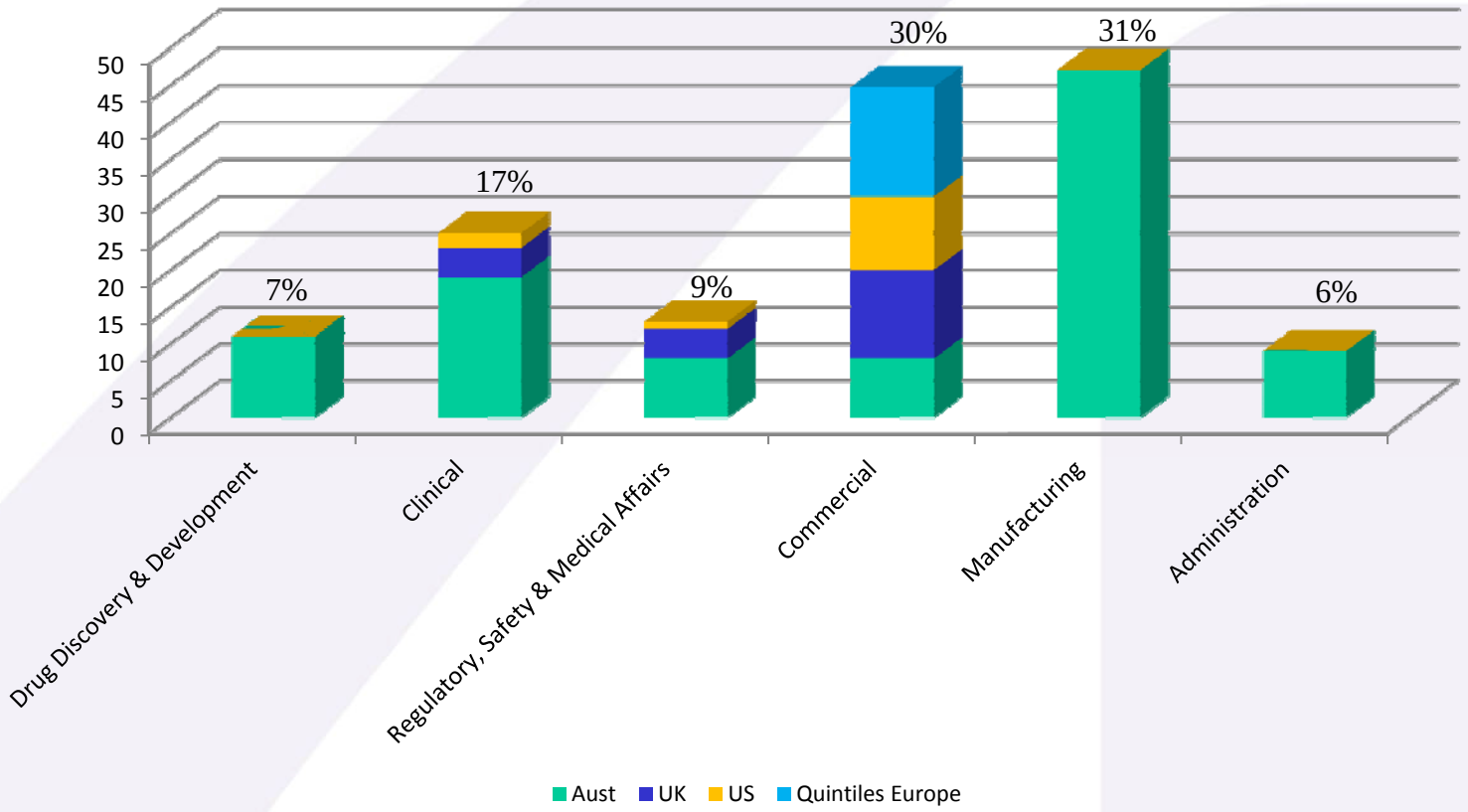
Annual General Meeting

October 2012

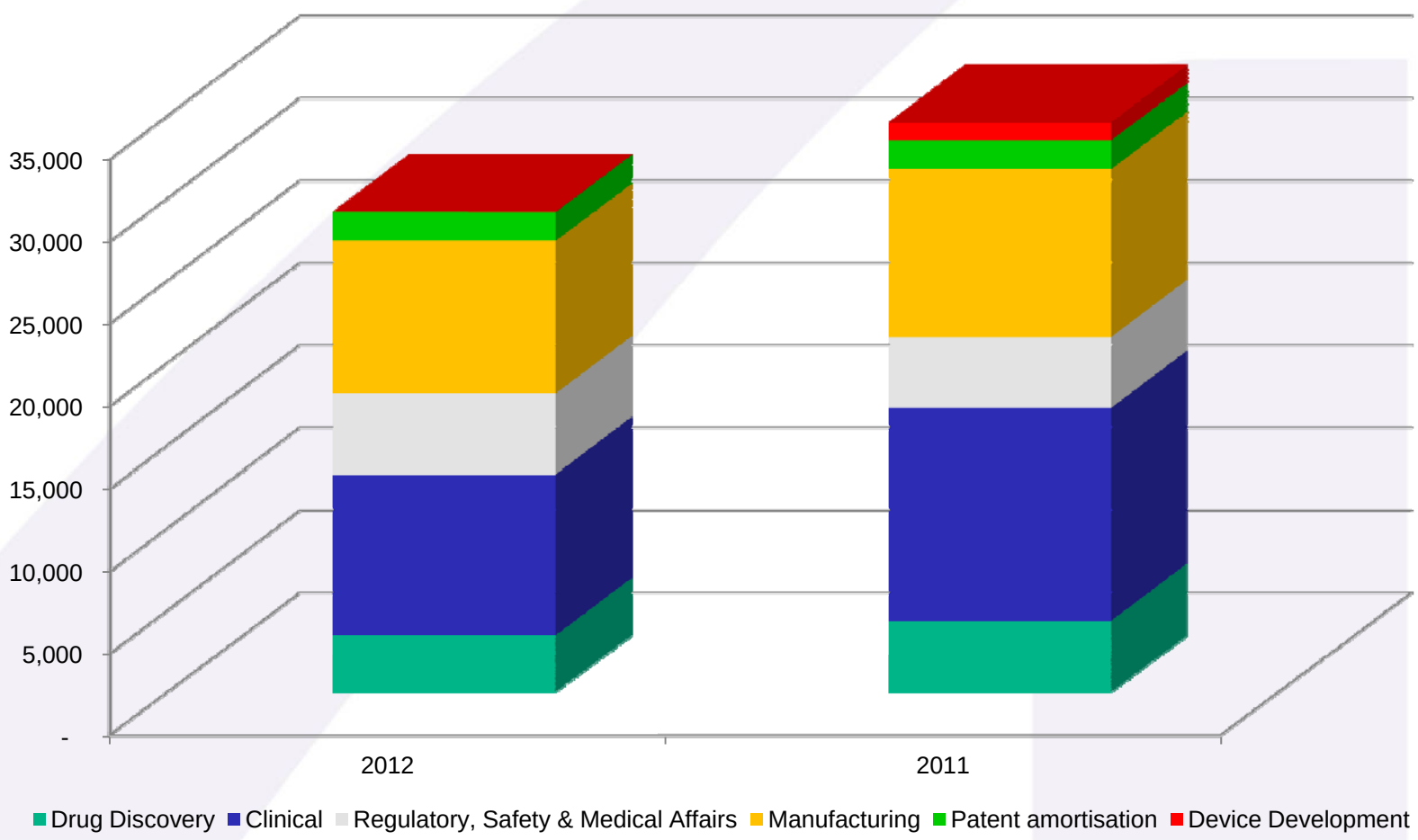
Financial Statements

Year ended 30 June	2012	2011	2010	2009	2008
	A$'000	A$'000	A$'000	A$'000	A$'000
Income Statements					
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



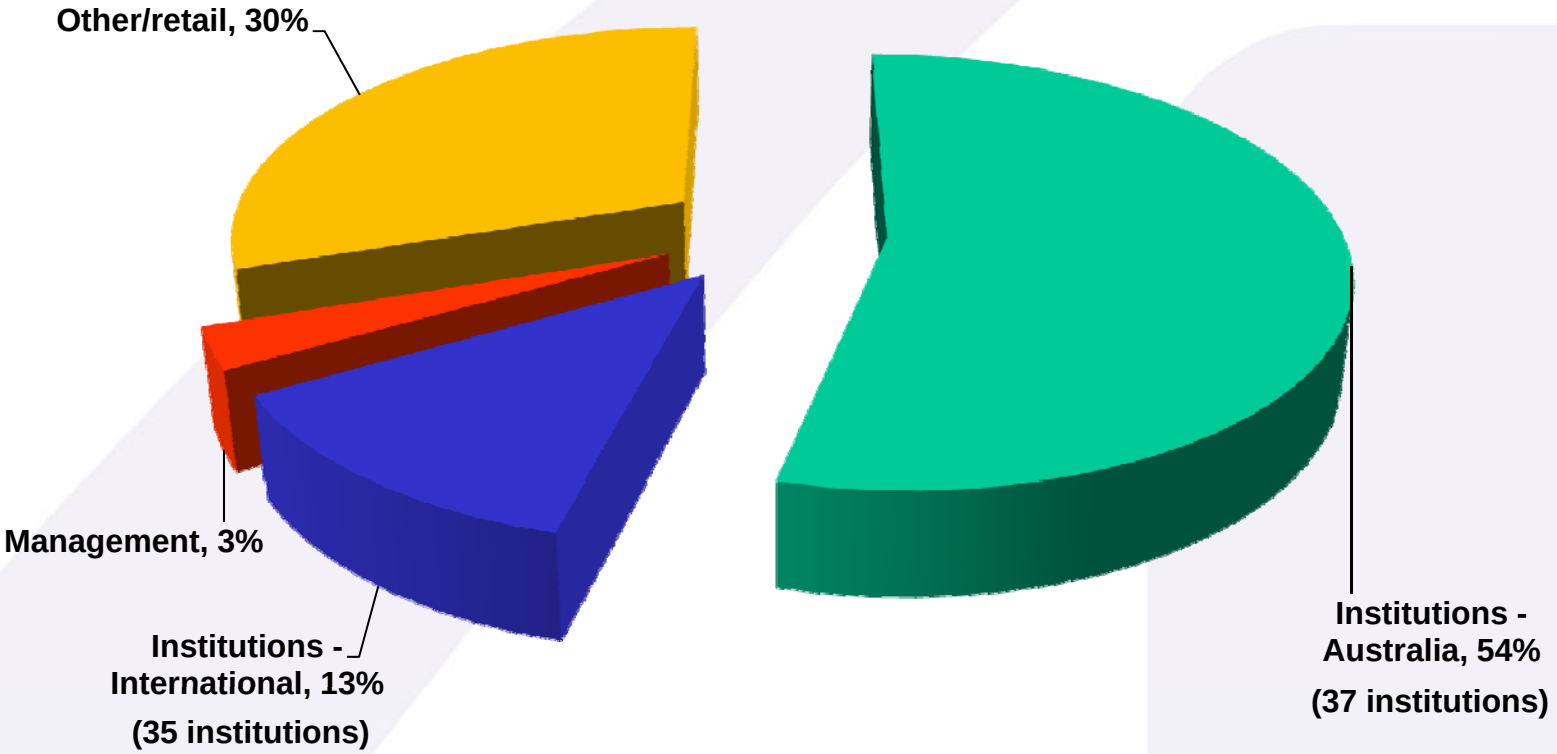
Research & Development



Financial Statements

As at 30 June	2012	2011	2010	2009	2008
	A$'000	A$'000	A$'000	A$'000	A$'000
Balance Sheet Data					
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
Share Data					
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