

pharmaxis

**Therapeutic products  
for respiratory and  
autoimmune diseases**

October 2006

# Forward Looking Statements

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This presentation may contain forward-looking statements that are based on management's current expectations and beliefs and are subject to a number of factors and uncertainties that could cause actual results to differ materially from those described in the forward-looking statements. The forward-looking statements contained in this presentation include statements about future financial and operating results, results of our clinical trials, status of our regulatory submissions, possible or assumed future growth opportunities and risks and uncertainties that could affect Pharmaxis' product and products under development. These statements are not guarantees of future performance, involve certain risks, uncertainties and assumptions that are difficult to predict, and are based upon assumptions as to future events that may not prove accurate. Therefore, actual outcomes and results may differ materially from what is expressed herein. In any forward-looking statement in which Pharmaxis expresses an expectation or belief as to future results, such expectation or belief is expressed in good faith and believed to have a reasonable basis, but there can be no assurance that the statement or expectation or belief will result or be achieved or accomplished.

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This investor presentation is not an offer of the sale of securities.

# Summary.....

Objective	The development of products for respiratory and autoimmune diseases
Lead products	Aridol: management of asthma and COPD Bronchitol: therapeutic for cystic fibrosis and COPD
Discovery	PXS64 - multiple sclerosis
Listings	ASX (Nov 2003): PXS; NASDAQ (Aug 2005): PXSL
Location	Sydney, NSW, Australia
Facility	GMP Manufacture of lead products
Employees (30/06/06)	65
Cash (30/06/06)	A\$98 million
Shares outstanding	177m (11.8m ADS)
Options outstanding	10.2m
Key patents	Aridol & Bronchitol granted in USA, Australia, Asia; pending in EU, Canada and Japan
Analyst coverage	   



# Near term catalysts to end 2006.....



## **Bronchitol – bronchiectasis**

- Europe Phase III trial to complete enrolment

## **Bronchitol – cystic fibrosis**

- Phase II dosing study to complete enrolment
- Commencement of Phase III trial (EU)



## **Bronchitol – chronic bronchitis**

- Phase II acute study to complete enrolment

## **Aridol**

- US Phase III clinical data
- Marketing approval in Sweden
- Initiation of European Union approval process
- Prediction of COPD treatment response clinical data



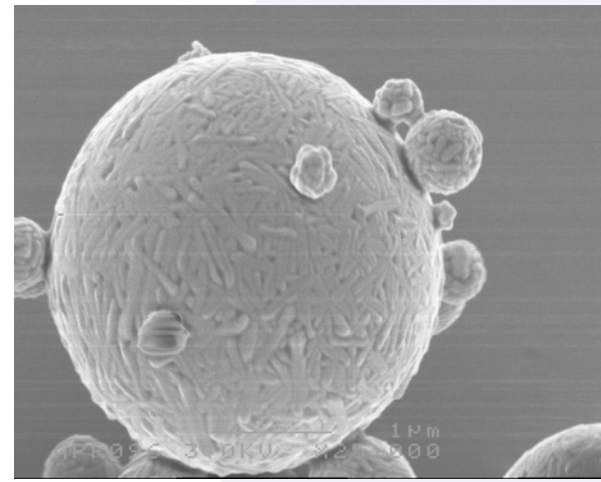
## **PXS64**

- Completion of preclinical studies

# Bronchitol



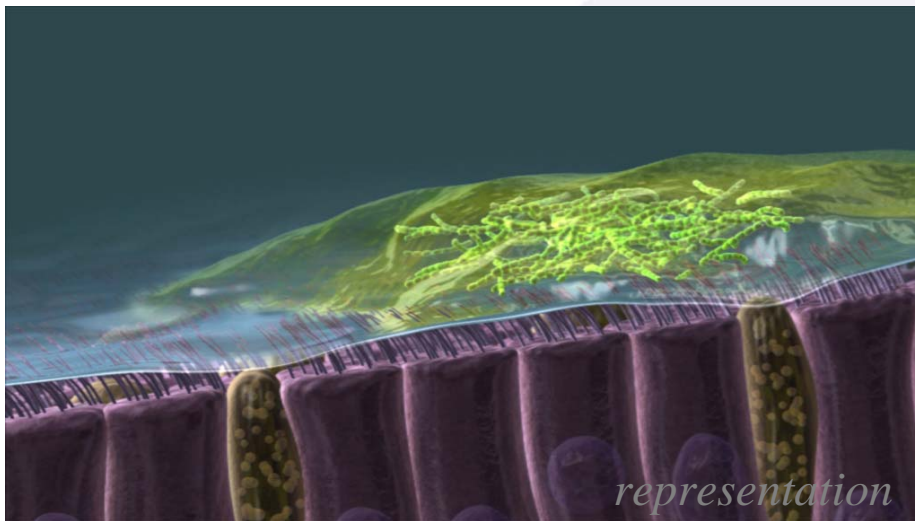
Mucus clearance:



Cystic fibrosis  
Chronic Obstructive Pulmonary Disease  
Bronchiectasis

# Osmotic clearance of abnormal mucus.....

Before treatment

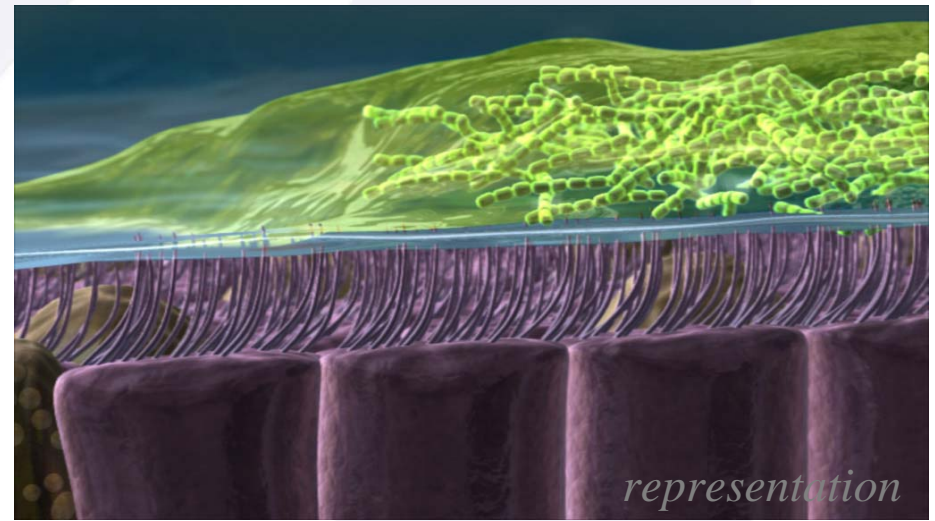


Lung surface dehydrated

Airway surface fluid layer impaired

Lung defense and hygiene compromised

After Bronchitol administration



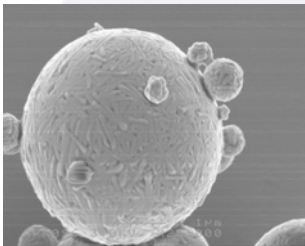
Lung rehydrated

Airway surface liquid restored

Normal lung clearance

# Bronchitol - bronchiectasis

## Background



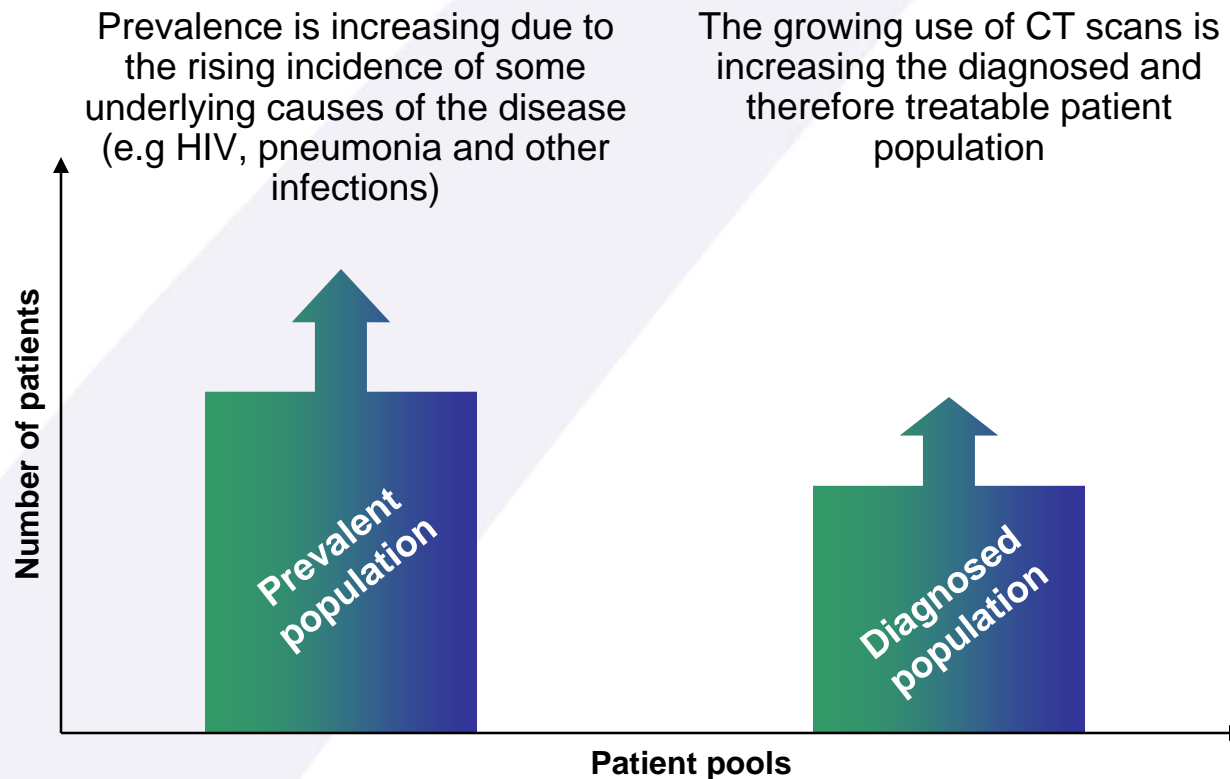
- Abnormal, irreversible dilation of the lower airways
- Daily mucus production, constant coughing, breathlessness, recurrent acute bronchitis with infective exacerbations : low quality of life
- In 30-50% of cases, the cause remains unknown
- Normal lung clearance impaired
- 500,000 affected worldwide (110,000 in the U.S.)<sup>1</sup>

Current treatments: bronchodilators, antibiotics

- No drugs proven effective to clear mucus

# Bronchiectasis - epidemiology and disease burden

**The diagnosed and treated patient population will continue to grow in the future, due to the growing use of CT scans for diagnosis and the increasing prevalence of some underlying causes of bronchiectasis**



- There are currently approximately 110,000 diagnosed patients in the US
- Over 30% of patients are currently misdiagnosed representing a significant opportunity to further increase the size of the treated population

# Bronchitol - bronchiectasis



## Phase II clinical trial

- 60 patient, double-blind, crossover, placebo-controlled
- 400mg twice a day for 14 days
- Primary end point – quality of life



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- Improvement in quality of life ( $p < 0.05$ )
  - Improvement in sleep ( $p < 0.02$ )
  - Improvement in chest congestion ( $p < 0.05$ )
  - Improvement in small airway function ( $p < 0.05$ )



# Bronchitol - bronchiectasis

## Phase III trial (for Europe)



- scheduled close of recruitment - end 2006
- data - mid 2007

## Primary endpoints

- quality of life
- mucus clearance

## Design

- 354 patient, placebo controlled, double blind, randomised  
12 week treatment

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## Phase III trial (for U.S.)

- to commence 2007



# Bronchitol – cystic fibrosis

## Background



- Genetic disorder affecting 75,000 worldwide (30,000 in U.S.)
- Poorly hydrated, tenacious, thick mucus
- Current life expectancy is 31 years



## Current treatments: rhDNase and tobramycin

- Delivered by nebulizer (preparation, sterilization)
- rhDNase (Pulmozyme): US\$265mm @ ~30% penetration
- Tobramycin: US\$233mm



# Phase II cystic fibrosis trial.....



- Crossover, 8 site study in 39 CF patients
- Randomised two week treatment periods
- Double-blind, placebo controlled
- Primary Endpoint:
  - Change in FEV<sub>1</sub>
- Secondary Endpoints:
  - Effect on other lung function measures
  - Effect on symptoms/signs
  - Effect on Quality of Life
  - Safety (including microbiology)

## CF Phase II trial results – lung function.....

	Bronchitol	Control	p value
Change in FEV <sub>1</sub>	7 ± 2%	0 ± 2%	0.008
Change in FEF <sub>25-75</sub>	15.5 ± 5%	0.6 ± 5%	< 0.01

- Includes patients being treated with rhDNAse
- FEF<sub>25-75</sub> is a measure of small airway function

# Bronchitol – cystic fibrosis registration.....

## Phase III trial (EU & Aus):

- Commence dosing Q4 2006
- Primary endpoint: same as Phase II (FEV<sub>1</sub>)
- Placebo-controlled, 6 month dosing
- Scheduled completion mid 2008

## Phase III trial (US) to commence 1H 2007

- Similar size, design to EU/Aus trial
- Scheduled completion beginning 2008

## Orphan drug designation – EU and USA



# Bronchitol – clearance of lung secretions

Proof of concept demonstrated with ICU patients

- Currently supplied on request to patients with life threatening condition

Clinical conditions include:

- asthma, COPD, cystic fibrosis, secondary respiratory disease, neurogenic disorder

Complete acute care pilot study (COPD) Q4 2006

Complete pivotal Phase III study Q4 2007

- 30 million COPD exacerbations per year in the U.S.<sup>1</sup>
- 1 million U.S. emergency room visits per year



# Aridol™



A rapid and simple test for airways inflammation that facilitates diagnosis and management of asthma.



# Potential clinical applications for Aridol

An easy to use, 'point of care' test with a high degree of sensitivity and specificity for airway inflammation

- 1. Asthma diagnosis and assessment of disease severity<sup>1</sup>**
- 2. Monitor patient's disease / managing effectiveness of treatment<sup>2</sup>**
- 3. Identification of COPD patients who will respond to steroids<sup>2</sup>**

*NOTES: 1 = Evidence available from phase 3 study*

*2 = Proof of concept only; definitive studies ongoing / planned*



# International Regulatory Status

## Australia

- Launched



## European marketing authorization

- Dossier submitted to Sweden - May 2005
  - Anticipated notification - Q4 2006
- Rest of Europe through Mutual Recognition Procedure
  - To be filed after Swedish review
  - Anticipated notification - early 2007
- Swiss Dossier submitted - July 2006
- 1<sup>st</sup> marketing partners appointed

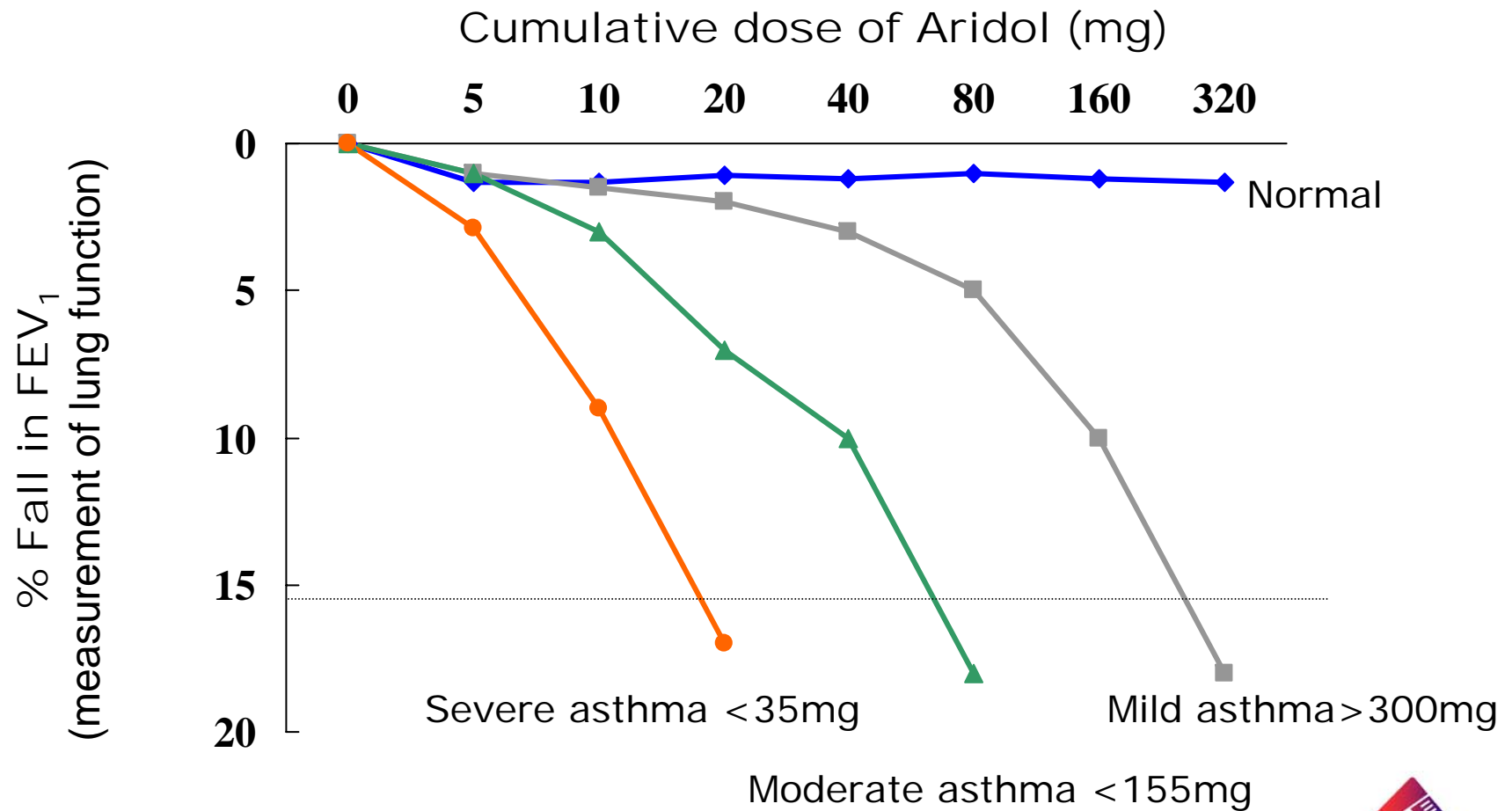


## USA

- Phase III data expected Oct-Dec 2006



# Aridol - airway hyper-responsiveness in asthma



# Asthma diagnosis – EU Phase III trial results

## Patient characteristics

- 557 asthmatic (428 adult, 129 children)
- 97 non asthmatic (82 adult, 15 children)
- Age 6 – 83
- Majority had mild disease
  - Half the asthmatic cohort had infrequent symptoms
  - Only 11.9% reported symptoms interfering with normal activity.
- Majority had good lung function.
  - 50% of the asthmatics had a FEV1 > 95% of predicted.
  - The mean FEV1 was 3.0 L in the asthmatics and 3.2 L in the non-asthmatics.
- 74% of asthmatics were on ICS
  - 228 on combination therapy / 164 on monotherapy with ICS



# Asthma diagnosis – Phase III trial results

## Results – Highly specific test for asthma

<b>Aridol vs.:</b>	<b>Sensitivity</b>	<b>Specificity</b>
Hypertonic Saline	81%	87%
Clinical diagnosis (ICS naive)	89%	95%
Clinical diagnosis (all patients)	60%	95%

- Mean dose for PD15 = 186mg
- Mean FEV<sub>1</sub> fall in negative patients was 4.9%
- High sensitivity in steroid naive patients
- Reduced sensitivity to clinical diagnosis in patients on ICS

# Asthma diagnosis – Phase III trial results

Results: Sensitivity to inhaled steroid usage yields valuable disease insights in treated asthmatics

	<b>Aridol Positive</b>		<b>Aridol Negative</b>	
	<b>Not on ICS N = 87</b>	<b>Using ICS N = 204</b>	<b>Not on ICS N = 37</b>	<b>Using ICS N = 159</b>
<b>Clinical diagnosis of asthma N=487</b>	Asthmatic with active airway inflammation that will respond to ICS	Maintain or increase ICS dosage	Consider alternative diagnosis	Well controlled asthmatic. Consider reducing dosage of ICS



# U.S. Asthma Phase III trial (DPM-A305)



## Primary end point

- Comparison of Aridol and exercise and methacholine and physician diagnosis
- Safety



## Subjects

- 415, aged 6 – 40, male and female with symptoms suggestive of asthma but no definitive diagnosis.  $FEV_1 > 70\%$

## No of sites

- 30



## Status

- Recruitment closed Aug 06. Data due Q4 2006



# Key international studies underway



## Steroid Management

*Mannitol versus BTS guidelines in ICS treated asthmatics*

- UK multicentre GP study
- 300 patients in parallel design with 12 month follow up
- Endpoint = exacerbations



## Steroid responsive COPD patients

*Does a +ve mannitol test predict patients who respond to ICS?*

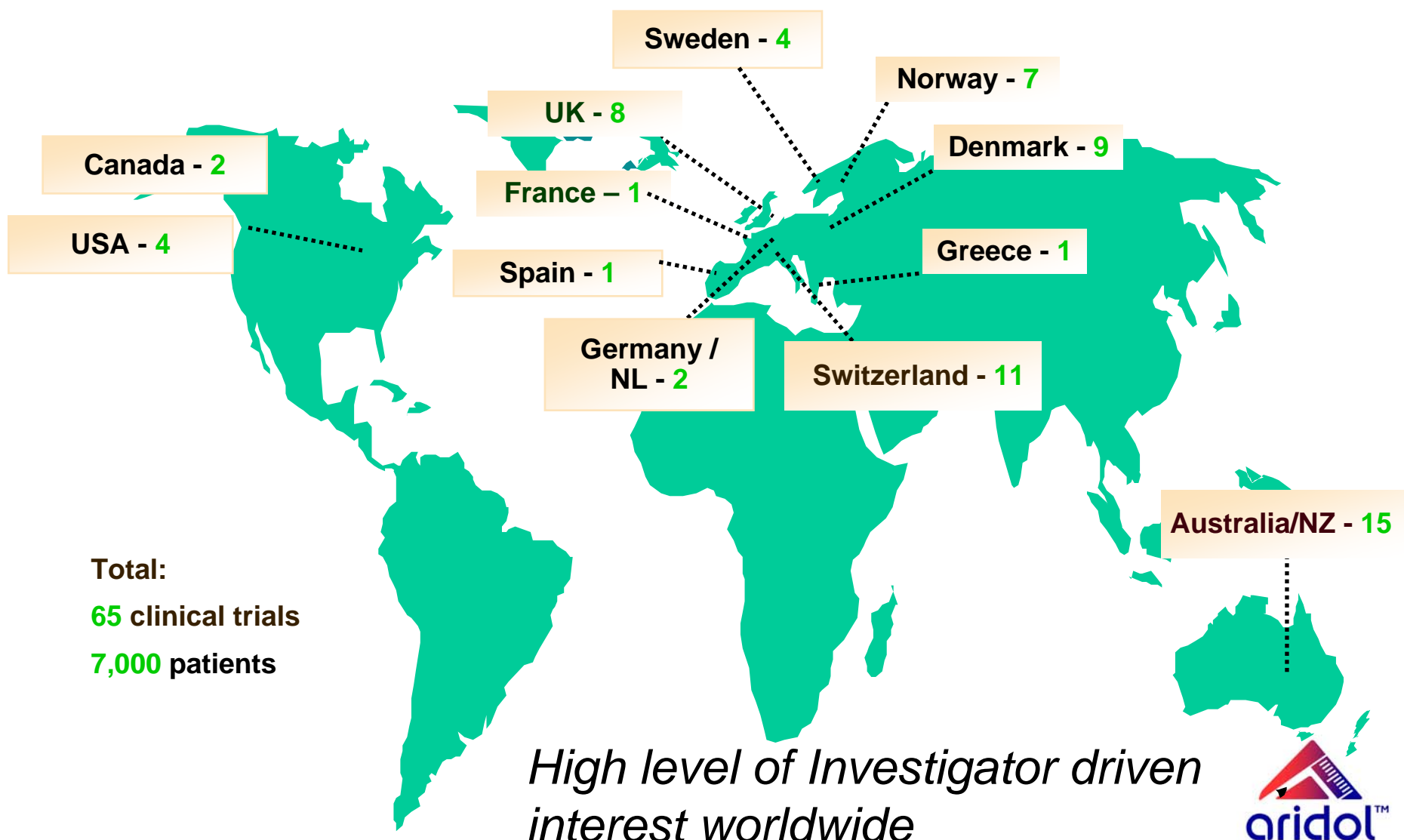
- Australian multicentre open label study
- 80 patients
- Endpoint = improvement in FEV1



## Various

- Use in a number of new anti-asthma clinical trials

# Worldwide development of Aridol.....



# Near term catalysts ahead.....

Milestone	4Q-06	1Q-07	2Q-07	3Q-07
<b>Aridol</b> Ph III US clinical data Approval – Sweden Launch - Sweden COPD clinical data				
<b>Bronchitol – cystic fibrosis</b> PII dosing study data Commence PIII trial (EU) Combination trial enrolled				
<b>Bronchitol – bronchiectasis</b> PIII trial enrolment complete PIII data available File EU marketing application				
<b>Bronchitol – COPD</b> Commence PII hospital trial Data available				
<b>PXS64</b> Complete preclinical studies				

# Financial Statements

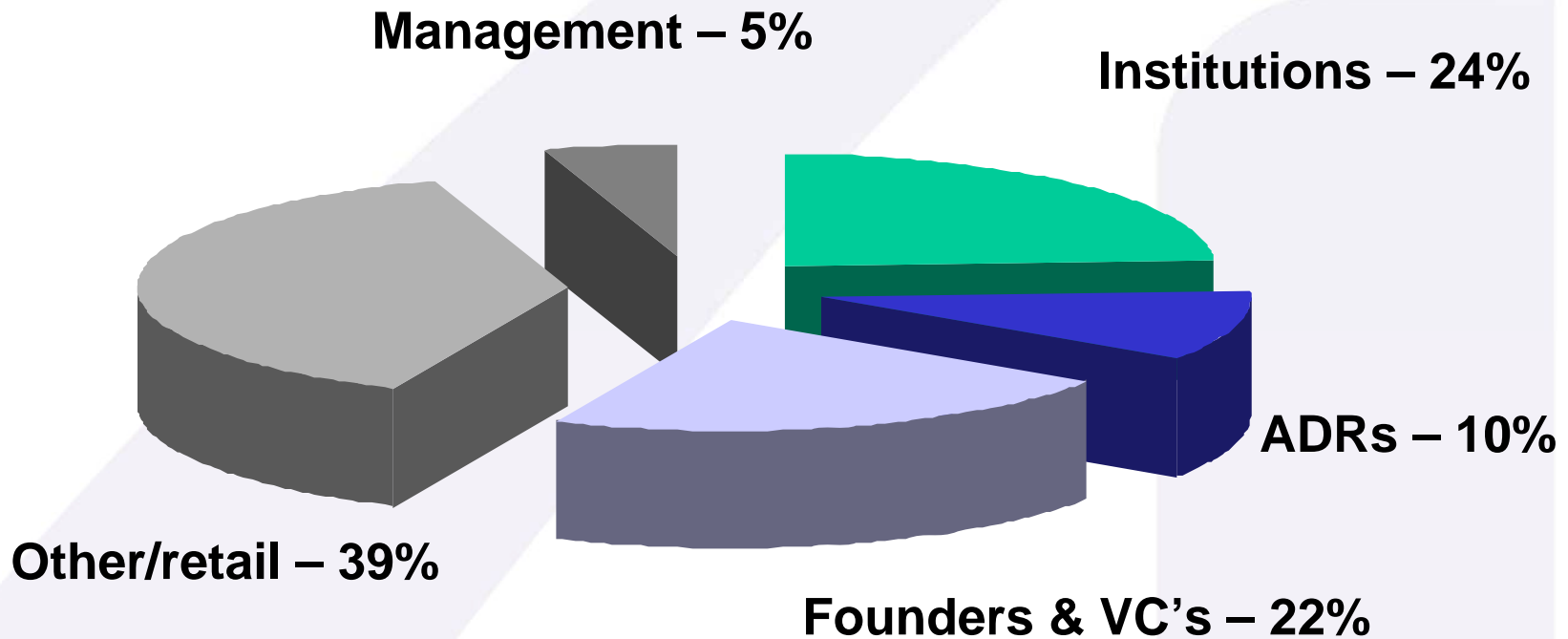
	<u>Year ended 30 June</u>				
	<u>2002</u> A\$	<u>2003</u> A\$	<u>2004</u> A\$	<u>2005</u> A\$	<u>2006</u> A\$
	(in thousands)				
<b>Income Statements</b>					
Revenue from sale of goods	-	-	-	-	8
Cost of sales	-	-	-	-	(2)
Gross profit	-	-	-	-	6
Interest	43	284	1,075	1,702	4,282
Grant income	646	779	1,152	1,219	1,299
Other income	-	43	48	-	-
<b>Expenses</b>					
Research & development	(1,151)	(2,051)	(6,301)	(9,269)	(16,978)
Administration	(140)	(1,103)	(2,461)	(3,134)	(4,386)
Commercial	-	-	-	(963)	(1,951)
Loss before income tax	(602)	(2,048)	(6,486)	(10,445)	(17,728)
Income tax expense	-	-	-	-	(5)
Loss for the year	(602)	(2,048)	(6,486)	(10,445)	(17,733)

# Financial Statements

	<u>As at 30 June</u>				
	<u>2002</u>	<u>2003</u>	<u>2004</u>	<u>2005</u>	<u>2006</u>
	A\$	A\$	A\$	A\$	A\$
	(in thousands, except per share data)				
<b>Balance Sheets</b>					
Cash and cash equivalents	750	7,384	25,217	33,390	97,840
Plant & equipment	116	1,515	1,474	2,477	3,205
Total Assets	2,144	10,495	28,261	37,937	104,267
Total liabilities	190	802	1,630	2,470	5,379
Total shareholders' equity	1,953	9,693	26,631	35,467	98,888
<b>Share Data</b>					
Ordinary shares on issue	11,200	11,200	108,016	134,770	176,904
Converting preference shares	16,000	46,816	-	-	-
Options on issue	3,680	9,024	10,751	10,914	9,692

# Share Capital

(including options)



31 July 2006: 177m shares; 10.2m options