#### ASX ANNOUNCEMENT



22 November 2013

#### INVION LIMITED AGM CHAIRMAN'S ADDRESS & CEO PRESENTATION

Invion Limited (ASX: IVX) is pleased to provide the Chairman's Address and CEO presentation for the 2013 Annual General Meeting of Shareholders being held this morning at 10.00am (AEST) at the offices of McCullough Robertson Lawyers, Level 11, 66 Eagle Street Brisbane.

#### Address to Shareholders by Dr Ralph Craven, Chairman.

I am very pleased to have the opportunity to speak with you again today, and feel privileged to say that this is my 3rd AGM addressing you as Chairman of this company.

We have come a long way from small beginnings to where we are today, a company for which I feel great positivity and enthusiasm. Our journey has been hard fought on a number of fronts; biotechnology is a highly regulated and complex sector to navigate successfully, but we are now positioned as a reputable company that has strong sector and investment presence and networks, and new, interested parties seeking to be a part of our growth.

This progression and our current standing are good for the company, and good for shareholders.

In addition to working to ensure good governance and strong oversight, your Board is focused on continuously adding value to Invion, and this has resulted during the year in movements both in management, and in strategic focus.

We are very fortunate to have secured a CEO of Greg Collier's standing and experience, as are we fortunate to have a Chief Medical Officer with the vast drug development and regulatory experience of Mitchell Glass. I thank them both for the progress they made this year.

In the last 12 months your company has initiated three phase II FDA-regulated clinical trials, and inlicenced a new compound for development.

Dr Collier will speak to these programs in more detail in his presentation, however I am pleased to stand before you and report that having three assets in development has de-risked our future growth prospects to a considerable extent.

We have made great strides in our autoimmune program with INV103, or Cpn10. Since we last met in this forum, an IND has been opened with the FDA, and a phase II trial in lupus patients is now well underway.

In our respiratory program, our phase II asthma trial of INV102 (nadolol) which is funded by the National Institutes of Health, has progressed well, and we look forward to interim information emerging in coming months.

Our smoking cessation program is enhanced, with data from this trial targeted to underpin our inhaled programs in COPD and cystic fibrosis.

We expect that in 2014 we shall significantly advance the preclinical inhaled programs of our respiratory franchise towards clinical status. This shall include the progression of INV104 (zafirlukast) which is targeted to be developed as the first inhaled, non-steroidal, anti-inflammatory treatment for asthma.

#### Invion Limited ABN 76 094 730 417 GPO Box 1557, Brisbane, QLD, 4001. P +61 7 3295 0500 F +61 7 3295 0599 www.inviongroup.com

#### ASX ANNOUNCEMENT



It is appropriate that in this address I acknowledge the legal proceedings commenced in February 2012. As was last reported to you, the company has continued to meet all requirements and obligations to progress the matter expeditiously. There have, however, been a number of interlocutory hearings in recent months, which have caused delays to the process that are outside the company's control. Trial dates are now set down for May 2014, and the Board stands firm in its commitment to bringing the case to resolution as swiftly as possible.

Before closing, I take this opportunity to thank my colleagues on the Board, for their skill, enthusiasm and commitment to Invion. I thank the management and the staff of Invion, and I again thank you, our shareholders, for your continued interest and support.

\*\*\*

#### **About Invion Limited**

Invion is a life sciences company focussed on the development of treatments for major opportunities in respiratory disease and autoimmune disease. The Group has three drug assets in development, and three phase II clinical trials, regulated by the Food & Drug Administration (FDA), currently underway in the United States. **INV102 (nadolol)** a beta blocker (beta adrenergic inverse agonist) currently used to treat high blood pressure and migraine, is being repurposed to treat chronic inflammatory airway diseases, including asthma and chronic obstructive pulmonary disease (COPD). **INV104 (zafirlukast)** is a *leukotriene receptor antagonist* (LTRA) or *anti-leukotriene* that reduces inflammation, constriction of the airways, and the build-up of mucus in the lungs. **INV103 (ala-Cpn10)** is a modified, naturally occurring human protein which has been proposed as a founding member of the Resolution Associated Molecular Pattern (RAMPs) family hypothesised to maintain and restore immune homeostasis. Invion is an ASX listed company (ASX:IVX), with its clinical headquarters in Delaware, USA.

#### FOR MORE INFORMATION CONTACT

Managing Director and CEO: Dr Greg Collier. P: 07 3295 0506 <u>investor@inviongroup.com</u> Media/ IR: Jane Lowe, Buchan Consulting P: 02 9237 2800 <u>jlowe@buchanwe.com.au</u>

# Invion Limited (ASX:IVX)

Clinical-stage life sciences company targeting chronic inflammation

CEO presentation 2013 AGM



#### Disclaimer

This presentation has been prepared by Invion Limited (Invion or the Company) solely for its use at presentations to be made by the Company. The information contained in this presentation is an overview and does not contain all information necessary to make investment decisions. Although reasonable care has been taken to ensure that facts stated in this presentation are accurate and that the opinions expressed are fair and reasonable, no representation, expressed or implied, is made as to the fairness, accuracy, completeness or correctness of the information and opinions contained in this presentation and no reliance should be placed on such information or opinions. This presentation does not constitute an offer, invitation, solicitation or recommendation with respect to the purchase or sale of any security in the Company nor does it constitute financial advice nor take into consideration your investment objectives. This presentation contains or may contain forward-looking statements that are based on management's belief, assumptions and expectations and on information currently available to management. All statements that are not historical, including those statements that address future operating performance and events of developments that we expect or anticipate will occur in the future, are forward looking statements. Although management believes these forward looking statements are fair and reasonable you should not place undue reliance on these statements.

### Invion: targeting inflammation

- > 3 drug candidates in development
  - > Developing two new respiratory franchises
    - INV102 (nadolol): beta blocker being repurposed to treat inflammatory airway diseases asthma, COPD, cystic fibrosis and smoking cessation failures
    - > INV104 (zafirlukast): inhaled anti-leukotriene that reduces inflammation, constriction of the airways, and the build-up of mucus in the lungs
  - > An early partnering opportunity
    - > INV103 (ala-Cpn10): modified, naturally occurring human protein hypothesised to reduce inflammatory markers to maintain and restore immune homeostasis
- > 3 FDA-regulated phase II clinical trials currently underway



#### Management team with proven track record

Invion's management and board have significant experience repurposing drugs for new markets and guiding drugs through FDA regulatory and approval processes.

#### Greg Collier, PhD., Managing Director and Chief Executive Officer

- > 20 year career in pharma research, development and commercialisation
- CEO ChemGenex Pharmaceuticals (sold to Cephalon \$230M)
- > 150 peer reviewed publications, 33 patents
- > Roche Award for Excellence

#### Mitchell Glass, M.D., Executive VP R&D and Chief Medical Officer

- > 5 FDA approved drugs
- > Managed more than 40 drug developments including "first in class"
  - > Led development of beta blocker carvedilol (Coreg)
  - > Led development phases I III of oral zafirlukast (Accolate)
- > Board certified pulmonary and critical care specialist
- > 25 year veteran of Pharma (AZ, GSK) and Biotech (AGIX)



## Current pipeline: three phase II underway

	preclinical phase I phase II
INV103 (ala-Cpn10)	
Lupus (SLE)	PK, safety and IL-6 reduction; for partnering
INV102 (nadolol)	
Asthma	NIH funded, US\$4m non-dilutive (oral program)
Smoking cessation	in patients with established COPD (oral program)
COPD	inhaled delivery
Cystic fibrosis	inhaled delivery
INV104 (zafirlukast)	
Asthma	inhaled delivery



# 18 month pipeline

	1H14	2H14	1H15
INV103 (ala-Cpn10)			
Lupus (SLE)	completion ph II study	IV/SC bridging	CMC for phase IIB*
INV102 (nadolol)			* with partner
Asthma	initial ph II data (oral)	ongoing phase II study, c	ompletion 2Q15
Smoking cessation	phase II interim and final data	EOP2 meeting (oral)	ph III enrolling
COPD	inhaled formulation, development	to IND	ph I enrolling
Cystic fibrosis	inhaled formulation and development		IND and CTA
INV104 (zafirlukast)			
Asthma	inhaled formulation, development	to IND and CTA	ph I enrolling
Inhaled franchise expansion			
Nadolol + ICS (INV105)			feasibility - asthma
Nadolol + LAMA (INV106)			feasibility - COPD
Nadolol + antibiotic (INV107)			feasibility - cystic fibrosis
Zafirlukast + ICS (INV108)			feasibility - asthma
Zafirlukast + LABA (INV109)			feasibility - asthma
Nadolol + zafirlukast (INV110)			feasibility - asthma / COPD



#### Targeting autoimmune disease INV103 (ala-Cpn10): modified natural human protein

## INV103 (ala-Cpn10): background and rationale

- > Minimally modified form of naturally occurring protein
- > Maintains heptameric structure and function
- > Intracellular function: prevent protein misfolding
- Extracellular function: Cpn10 proposed as a founding member of the Resolution Associated Molecular Pattern (RAMPs) family (Shields et al, Clin Exp Immunol, 2011, 165: 292-300)
  - > Hypothesis: Maintain and restore homeostasis
  - > Critical component of prevention of autoimmunity
  - > Area of intense interest in immunology
- > Significant clinical data base > 250 patients
  - demonstrated anti-inflammatory and immunoregulatory activity in multiple indications including RA, psoriasis
- > Strong pre-clinical data in lupus animal model (3 studies)
  - reduced renal and circulating levels of key pro-inflammatory mediators (TNF-α, IL-6 and MCP-1) reduced CD4+ T cells and auto-reactive T cells and increased the number of activated DC (critical in the establishment of self tolerance)
- > Toxicology support through 3 months' dosing
- > Intellectual Property position: composition of matter protection in all major markets (US 2026)



## INV103: completed clinical trials

Phase	Indication	Route	Total patients	INV103 patients	Doses
1a	Healthy volunteers	IV/SC	19	14	1.2, 5.5, 10mg IV 5mg SC
1b	Multiple Sclerosis	IV	12	9	2.5 or 5mg, 5 doses
2a	Multiple Sclerosis	IV	50	39	Placebo, 5mg
2	Ulcerative Colitis	IV	8	8	5mg 2x weekly
2a	Plaque Psoriasis	IV	24	24	5, 7.5 or 10mg 2x weekly
2a	Rheumatoid Arthritis	IV	23	23	5, 7.5 or 10mg 2x weekly
1a	Healthy volunteers	SC	24	16	10,30,60,100mg sc
1a	Healthy volunteers	SC	22	17	30, 30x2, 60, 60x2, 80mg/weekly
2a	Rheumatoid Arthritis	SC	155	105	Placebo, 25mg, 75mg 2x weekly



## INV103: phase II trial design – lupus

Trial name	INV103 (ala-Cpn10) in mildly active Systemic Lupus Erythematosus (lupus)				
Trial design	Double-blinded, randomized, placebo-controlled, intravenous dosing				
Patients	32 subjects (8 subjects per dose cohort, 4 cohorts)				
Timing	Commenced Q3 2013 Initial data Q4 2013				
Inclusion criteria	Mild lupus without clinical kidney disease				
Principal Investigator	Alan Kivitz, M.D., Stanley Cohen, M.D.				
Sites	Altoona, Pennsylvania; Dallas, Texas				
Doses	10 mg - 300mg twice weekly				
Primary endpoint	Reduction from baseline serum IL-6 levels				
Safety endpoints	Safety and toxicity; pharmacokinetics; assessment of anti-drug antibodies				
Exploratory endpoints	SELENA-SLEDAI score (disease activity index); pharmacodynamics; markers of systemic inflammation and vascular damage				
Comment	Clinical program under US IND				
Regulatory Status	www.clinicaltrials.gov ID: NCT01838694				

## INV103: milestones

	1H14	2H14		1H15
INV103 (ala-Cpn10)				
Lupus (SLE)	completion ph II study	V/SC bridging		CMC for phase IIB*
	ongoing BD activities	joint development		
INV102 (nadolol)				* with partner
Asthma	initial ph II data (oral)	ongoing phase II stud	ly, cor	npletion 2Q15
Smoking cessation	phase II interim and final data	EOP2 meeting (oral)		ph III enrolling
COPD	inhaled formulation, developmer	t to IND		ph I enrolling
Cystic fibrosis	inhaled formulation and develop	ment		IND and CTA
INV104 (zafirlukast)				
Asthma	inhaled formulation, developmer	t to IND and CTA		ph I enrolling
Inhaled franchise expansion				
Asthma, COPD, cystic fibrosis				feasibility



#### Targeting respiratory disease Two proprietary and unique respiratory franchises



#### Respiratory therapeutics: oral program INV102 in asthma and COPD (smoking cessation)

# INV102 (nadolol)

- > Generic drug being repurposed for a new target
- > Suite of patents granted and in prosecution
- > Aim to develop an inhaled drug for the treatment of respiratory diseases including asthma and COPD
- > Short term path to commercialisation with oral treatment
- > Nadolol is uniquely an inverse  $\beta$ -agonist in the airway
  - > inactivates intracellular inflammatory events that are stimulated
    - > spontaneously or
    - > by  $\beta$  agonists
- > Clinical data to date
  - > Two phase II clinical trials completed
    - > Safety profile enhanced by titration starting at very low doses
    - > Dose-related reduction of airway hyper-responsiveness
- > Goals of oral INV102 (nadolol) program
  - > Asthma program (phases II and III) is NIH funded
  - > Invion utilises this program to provide data support for its inhaled program
  - Smoking cessation program is a 'speed to market' strategy with primary goal of providing data to support the inhaled program

### Preclinical studies demonstrate airway healing



Control lung tissue

Lung tissue of 'asthmatic' mice: epithelial cells have been converted to mucusproducing goblet cells. No effect of alprenolol.

Lung tissue of 'asthmatic' mice **treated** with INV102 (nadolol) for 28 days: restored epithelium

#### Proof of concept has been achieved in pre-clinical studies with inhaled INV102



## Medical, regulatory and commercial precedent

Precedent: Chronic Heart Failure (CHF)

FROM CONTRAINDICATED Warning against use of beta blockers in CHF for > 25 years. Carvedilol annual sales (1998) \$40m

TO STANDARD OF CARE

After careful titration, beta blocker Carvedilol reduced mortality in all classes of CHF First in class: Carvedilol peak annual sales \$1.5 BILLION (2010)

Invion target: Chronic Obstructive Pulmonary Disease (COPD)

#### FROM

#### **CONTRAINDICATED**

Warning against use of beta blockers in COPD for > 25 years. Nadolol current sales: \$ nominal (generic)

#### ТО

#### **STANDARD OF CARE**

After careful titration, beta blocker INV102 (nadolol) targeted to reduce airflow obstruction due to damaged airways. Target: First in class

NOTE: The effect of INV102 (nadolol) on airways cells is unique among  $\beta$  blockers.  $\beta$ 1 success in the heart (CHF) mitigates the risk of  $\beta$ 2 success in the lung (COPD)



### Completed two phase II clinical trials: POC

- > Objective: Proof-of-concept to evaluate safety and effects on airway with escalating doses administered to 19 subjects with mild asthma
- Primary endpoint: Objective measure of airway hyper-responsiveness (PC20 MeChFEV1), the diagnostic hallmark of asthma
- > Key Findings:
  - > Safety: well tolerated in doses up to 40mg
  - > Efficacy: airway hyper-responsiveness:
    - > dose response with ineffective dose at 10mg/day
    - > 9 -10 weeks of treatment produced a dose-dependent decrease in airway hyperresponsiveness that achieved clinically significant improvement
  - > Lung function:
    - > attenuation of first dose decrease in FEV1 by titration
    - > same benefit and commercial strategy as Coreg in CHF
  - > Findings led US NIH to fund larger phase II study in asthma patients



## INV102: phase II trial design – smoking cessation

Trial name	INV102 (nadolol) in smoking cessation of patients with pre-existing COPD			
Trial design	Double-blinded, randomised, placebo-controlled			
Patients	130 (65 per arm: 54 needed for analysis)			
Timing	Commenced Q3 2013 Initial data 1H 2014			
Inclusion criteria	Previously failed to quit, have COPD and chronic cough			
Principal Investigator	Prof Mario Castro			
Sites	Washington University (St Louis)			
Doses	2.5mg, 5mg, 10mg, 25mg, 50mg (dose titration)			
Primary endpoints	Abstinence from smoking in last 2 weeks of trial			
Secondary endpoints	Number of cigarette-free days; clinical COPD questionnaire; MMRC Dyspnea Scale; markers of COPD; sputum markers of COPD			
Safety endpoints	Change in FEV1; requirement for rescue medication; COPD exacerbation rate			
Comment	Data will support broader oral and inhaled development program			
Regulatory Status	www.clinicaltrials.gov ID: NCT01825122			

## INV102: phase II trial design – mild asthma

Trial name	INV102 (nadolol) in mild asthma (NIMA)					
Trial design	Double-blinded, randomised, placebo-controlled, multi-centre					
Patients	60 subjects (30 subjects in each of two treatment arms)					
Timing	Commenced Q1 2013 Expected completion 2015					
Inclusion criteria	Mild asthma: only $\beta$ agonists as needed					
Principal Investigator	Nicola A. Hanania, M.D., M.S., Baylor College of Medicine					
Sites	Baylor, Washington University, Duke University					
Doses	1.25mg, 2.5mg, 5mg, 10mg, 25mg, 50mg (dose titration)					
Primary endpoints	Improved airway hyper-responsiveness via change in methacholine PC20 (based on FEV1)					
Safety endpoints	Safety of titration and 6 months' dosing					
Exploratory endpoints	Reduced airway inflammation and mucous metaplasia; increased β2AR density, affinity and signaling in airway epithelial cells; change in exhaled (eNO)					
Comment	Clinical program under US IND (submitted Feb '07)					
Regulatory Status	www.clinicaltrials.gov ID: NCT01804218					

# Oral program: milestones

	1H14	2H14	1H15		
INV103 (ala-Cpn10)					
Lupus (SLE)	completion ph II study	IV/SC bridging	CMC for phase IIB*	$\geq$	
INV102 (nadolol)				~	
Asthma	initial ph II data (oral)	ongoing phase II study	v, completion 2Q15		
	Histopathology and spu	tum data de-risk inhaled IN	VV102 program	_	
Smoking cessation	phase II interim and final data	EOP2 meeting (oral)	ph III enrolling		
	Histopathology and sputum data de-risk inhaled INV102 program				
COPD	inhaled formulation, development	nt to IND	ph I enrolling	$\geq$	
Cystic fibrosis	inhaled formulation and develop	inhaled formulation and development			
INV104 (zafirlukast)				-	
Asthma	inhaled formulation, developme	nt to IND and CTA	ph I enrolling		
Inhaled franchise expansion				-	
Asthma, COPD, cystic fibrosis			feasibility	$\supset$	



### Respiratory therapeutics: inhaled program INV102 (nadolol) in COPD & cystic fibrosis INV104 (zafirlukast) in asthma

### INV102: inhaled development targets

- > Develop franchise across broad range of respiratory inflammation
  - > realize full value of franchise

#### > INV102 monotherapy

- > COPD (chronic bronchitis): signs and symptoms followed by reduction of exacerbations
- Cystic fibrosis (EU)

#### > INV102 combination therapy

- > Nadolol + ICS (INV105): severe asthma
- > Nadolol + LAMA (INV106): COPD
- > Nadolol + antibiotics (INV107): cystic fibrosis



# Inhaled program: development plan

	1H14		2H14		1H15
INV103 (ala-Cpn10)					
Lupus (SLE)	completion ph II study	$\geq$	IV/SC bridging	$\rightarrow$	CMC for phase IIB*
INV102 (nadolol)					
Asthma	initial ph II data (oral)	$\geq$	ongoing phase II study	, con	npletion 2Q15
Smoking cessation	phase II interim and final data	$\geq$	EOP2 meeting (oral)		ph III enrolling
COPD	inhaled formulation, developme	ent to	o IND		ph I enrolling
Cystic fibrosis	inhaled formulation and develop	inhaled formulation and development			IND and CTA
INV104 (zafirlukast)				_	
Asthma	inhaled formulation, developme	ent to	DIND and CTA		ph I enrolling
Inhaled franchise expansion				_	
Nadolol + ICS (INV105)					feasibility - asthma
Nadolol + LAMA (INV106)					feasibility - COPD
Nadolol + antibiotic (INV107)	]				feasibility - cystic fibrosis
Zafirlukast + ICS (INV108)					feasibility - asthma
Zafirlukast + LABA (INV109)					feasibility - asthma
Nadolol + zafirlukast (INV110)					feasibility - asthma / COPD

## INV104 (zafirlukast)

- > Leukotriene Receptor Antagonist (LTRA) or anti-leukotriene
- > Targeted as first inhaled non-steroidal anti-inflammatory treatment for asthma
- > Established activity by inhalation route with excellent flow and deposition (MDI and DPI)
- > Large market potential with mitigated risk of a reformulated drug
- > Data to date
  - > Well defined CMC/TOX/ADME and safety profile: > 4M patients as oral Accolate (AZ)
  - > 7 studies showed excellent prevention of asthma, cold air and exercise induced bronchospasm (EIB) without detectable drug blood levels
  - > FDA response to pre-IND meeting requires limited toxicology package
    - > 2 species x 28 days + 6 months, 1 species
- > Intellectual Property position
  - > Expired zafirlukast patents (public domain)
  - > New patent protection from combination, delivery, and linked diagnostic filings



### INV104: inhaled development targets

 Develop non-steroidal anti-inflammatory therapeutics franchise across broad range of respiratory inflammation targets

#### > INV104 monotherapy

- > Inhaled zafirlukast for mild to moderate asthma marked by atopy
- > Inhaled zafirlukast for exercise-induced bronchospasm
- > Inhaled zafirlukast leukotriene-driven asthma (e.g. triad asthma)

#### > INV104 combination therapy

- > Zafirlukast + ICS (INV108): moderate asthma (pure anti-inflammatory combination)
- > Zafirlukast + LABA (INV109): pediatric asthma
- > Zafirlukast + nadolol (INV110): asthma/ COPD



# Respiratory franchise: oral & inhaled programs

	1H14	2H14		1H15
INV103 (ala-Cpn10)				
Lupus (SLE)	completion ph II study	IV/SC bridging		CMC for phase IIB*
INV102 (nadolol)				
Asthma	initial ph II data (oral)	ongoing phase II study	, com	npletion 2Q15
Smoking cessation	phase II interim and final data	EOP2 meeting (oral)		ph III enrolling
COPD	inhaled formulation, development	to IND		ph I enrolling
Cystic fibrosis	inhaled formulation and developm	pent		IND and CTA
INV104 (zafirlukast)				
Asthma	inhaled formulation, development	to IND and CTA		ph I enrolling
Inhaled franchise expansion				
Nadolol + ICS (INV105)				feasibility - asthma
Nadolol + LAMA (INV106)				feasibility - COPD
Nadolol + antibiotic (INV107)				feasibility - cystic fibrosis
Zafirlukast + ICS (INV108)				feasibility - asthma
Zafirlukast + LABA (INV109)				feasibility - asthma
Nadolol + zafirlukast (INV110)				feasibility - asthma / COPD

### Invion is developing a robust respiratory franchise

- > Two drugs: INV102 (nadolol) and INV104 (zafirlukast)
- > Multiple opportunities for new patents
- > Proprietary doses and formulations
- > Synergies in development expertise and know how
  - > GMP requirements: Chemistry and Manufacturing
  - > GLP requirements: Toxicology and pharmacokinetics (including NO blood levels)
  - > Clinical studies
  - > KOLs
- > Integrated plan for next 18 months





### Summary

- ✓ 3 drug assets with multiple paths to market
- ✓ early partnering opportunity for INV103 (ala-Cpn10)
- ✓ two de-risked novel and proprietary inhaled respiratory franchises
- ✓ 3 FDA-regulated phase II clinical trials
- ✓ experienced management team
- ✓ significant valuation drivers: 12-18 months

### Corporate snapshot

Sector	Life Sciences (Biotechnology)
Principal activities	Clinical-stage pharmaceutical drug development
Pipeline	3 drug assets, multiple clinical and pre-clinical programs
Operations	Australia & USA
ASX code	IVX
Share price (12-Nov-13)	\$0.12 (12 cents)
Shares on issue	~463M
Options on issue	~31M
Market cap (12-Nov-13)	\$55M
Cash at bank (30-Jun-13)	\$3.03M
Anticipated R&D tax credit inflow	\$1.46M
Cash burn (12 months to 30-June-13)	~\$6M





Dr Greg Collier Managing Director and CEO Invion Limited

GPO Box 1557 Brisbane, QLD, 4001 Australia P: +61 7 3295 0500 E: greg.collier@inviongroup.com W: www.inviongroup.com

CEO presentation 2013 AGM