N4 Pharma

Investor Presentation

MELLO 2018

N4 PHARMA

Introduction

- Established in 2014, RTO onto AIM May 2017
- Specialist pharmaceutical company with two divisions:
  - Reformulation of existing generic drugs; and
  - Silica nanoparticle delivery system (Nuvec®)
- Lower risk, less costly, quicker to market than traditional drug development
- Lead Generic product, sildenafil MR (more commonly known as Viagra), undertaking proof of concept clinical trials
- Nuvec® research program leading to early collaborations
- Built around a strong IP portfolio in both divisions
- Highly experienced management team

Business Model

- Develop new versions of existing drugs either already on market (generics) or in development (vaccines)
- License to big pharmaceutical companies for milestones and royalties

1

- ***Unmet patient need***
- ***Global market potential***
- ***Identify & select therapeutic products with side-effects, stability or efficacy issues***

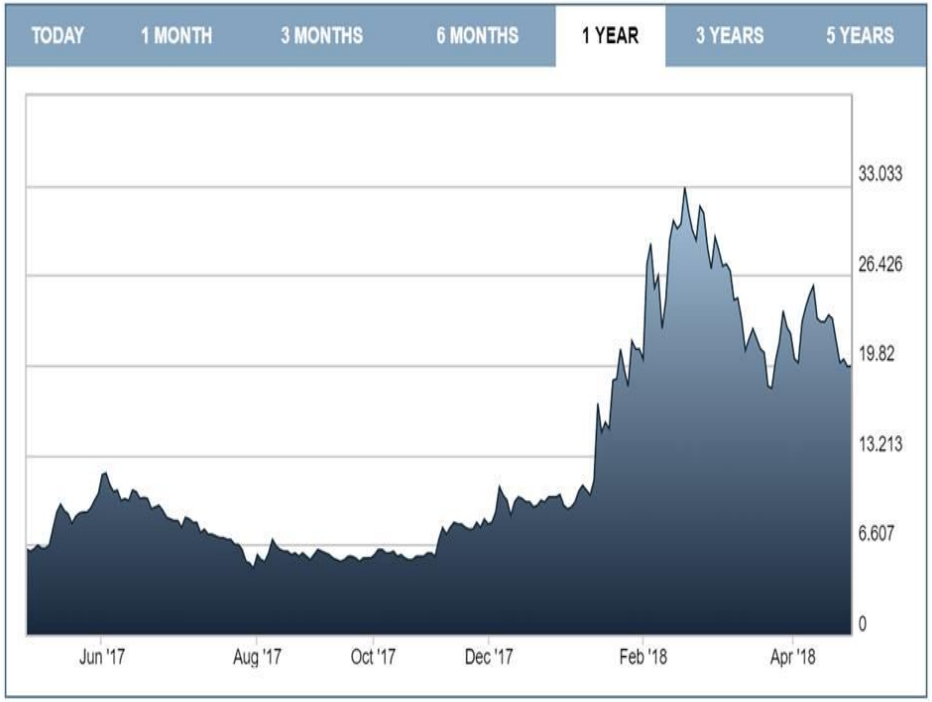
2

- ***Patent reformulations of improved generic***
- ***Improve DNA/RNA delivery using proprietary technology platform***

3

- ***License re-formulated products to global pharma market***
- ***License delivery technology to pharma & biotech for own programs***

One year on: SP up over 200%



- Commencement of in-vivo research programme for Nuvec®
- First collaboration announced
  - MedImmune to evaluate Nuvec® technology
- Appointment of Andrew Leishman as Head of Nuvec® development
- Commencement of sildenafil human clinical trial
- £784k raised via warrant exercises since 1 January 2018
- Strong cash position through to 2019

Source: London Stock Exchange

Sildenafil MR

The Perfect Erectile Dysfunction Product

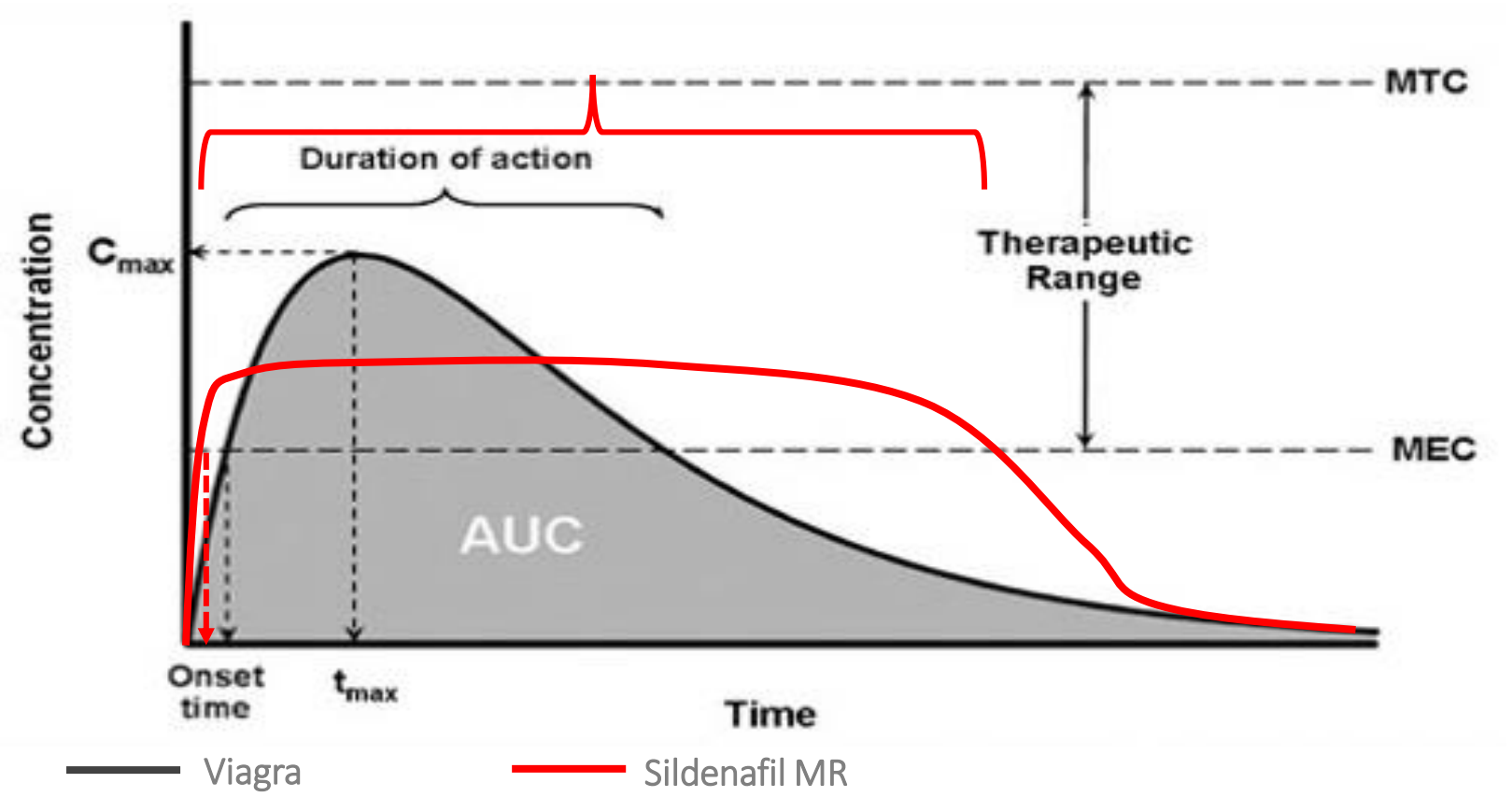
- Sildenafil MR is specifically developed to meet the needs of those patients suffering from ED

	Onset of action	Duration	Affected by food	Market size **
Sildenafil MR (N4 Pharma)*	**15-30 mins***	**12-20 hours***	**No**	**In development**
Viagra (Sildenafil)	1 hour	4-6 hours	Yes	$1.6bn
Cialis (Tadalafil)	2-4 hours	36 hours	No	$2.5bn
Levitra (Vardenafil)	40-50 mins	5-7 hours	Partial	$0.2bn
Stendra (Avanafil)	15-20 mins	4-6 hours	Partial	n/a
MED2002 Gel (Futura)	5-10 mins	30 mins	No	In development

** Target ** Source: Evaluate Pharma 2016*

Target Product Profile

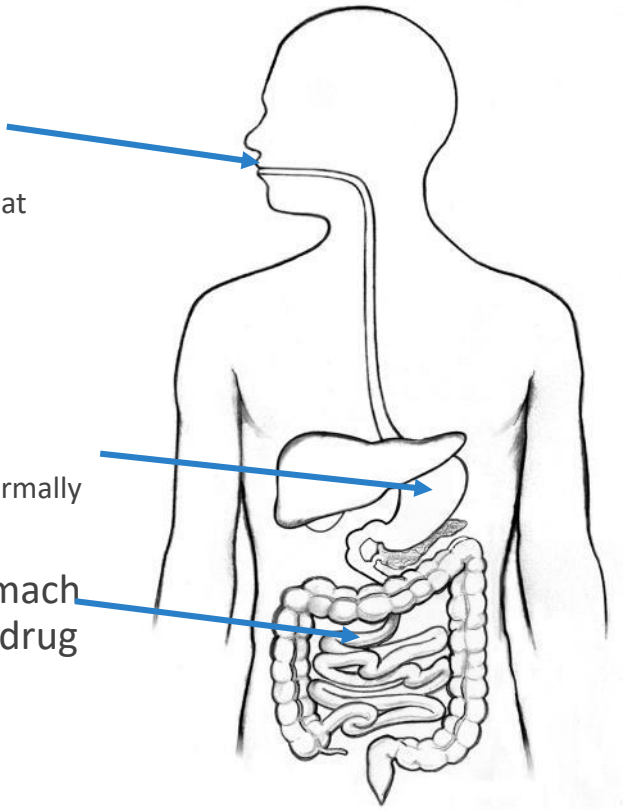
- Sildenafil MR targets a flatter faster onset and longer lasting plasma concentration in the effective therapeutic window



Our sildenafil Product

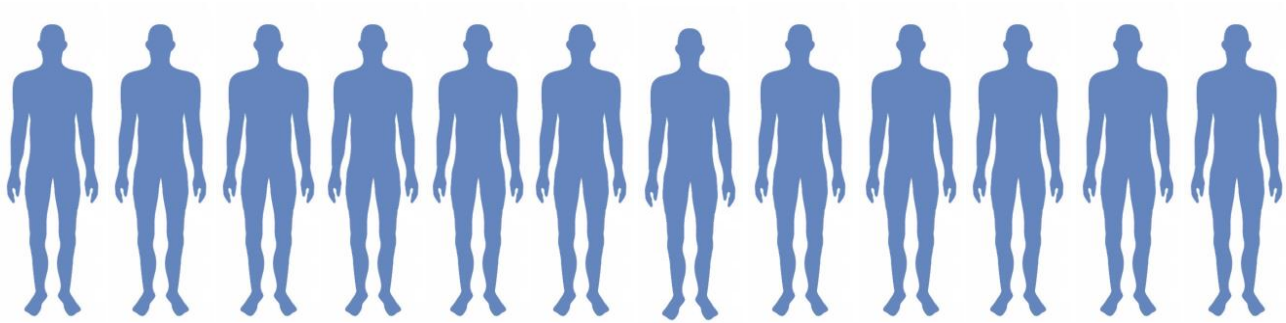
- Sildenafil MR is a multiple action tablet comprised of an inner core of sildenafil citrate (80%) with an outer coat of sildenafil base (20%)

- Sildenafil MR placed under the tongue for 60 seconds
  - Initial release of sildenafil as outer coat partially dissolves
  - Delivers drug straight to bloodstream bypassing stomach
  - Rapid onset of action
- Tablet then swallowed
  - Remainder of outer coat dissolves normally in the stomach
- Inner core dissolves slowly in stomach and small intestine to enable the drug to last longer



Commencement of human clinical trials

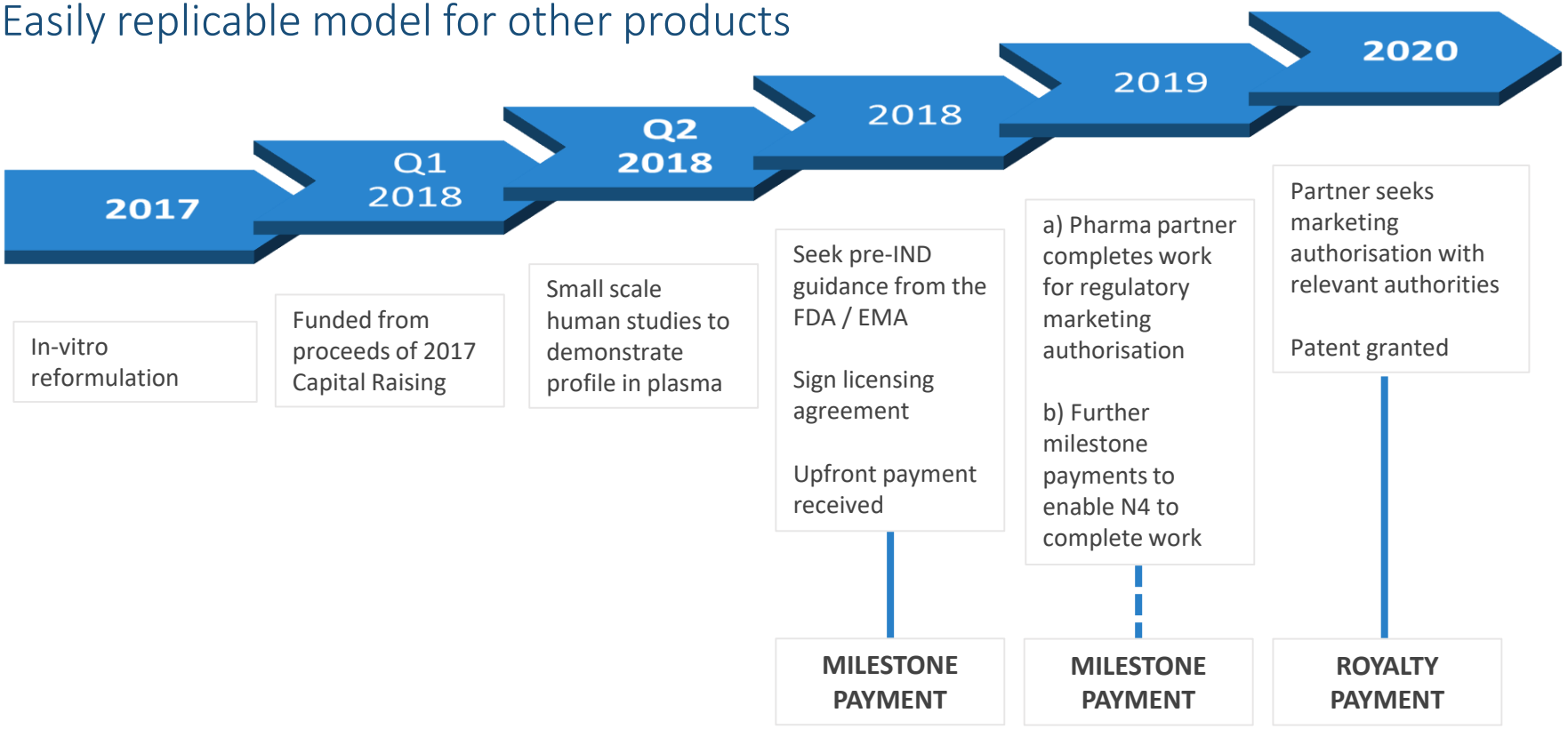
- Lead product sildenafil MR commenced proof of concept clinical trial – Q2 2018
- Four way crossover study in 12 healthy subjects
- Comparing reformulated 100mg sildenafil to Viagra 50mg in both fed and fasted conditions
- Aim to measure the level of the drug in plasma achieved by the reformulated product
- Data gathered establishes whether N4 Pharma's reformulation has been sufficiently successful



Route to Market

Commercialisation of sildenafil

Easily replicable model for other products

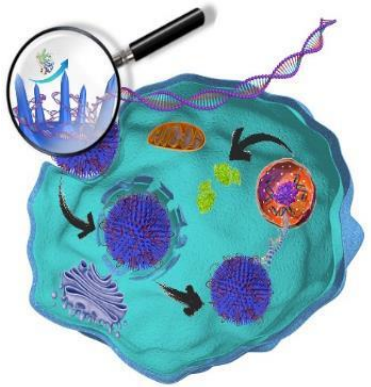


Nuvec®: Silica nanoparticle (SiNP) delivery system:

For vaccines and therapeutics

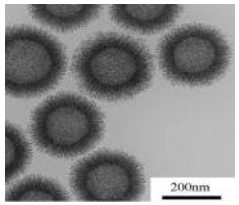
What is Nuvec®?

- A novel nucleic acid delivery system for vaccines and biological therapeutics
- Mesoporous silica nanoparticles with unique structure designed as superior alternative to lipid systems and viral-like delivery vectors
- Addresses issues typically affecting current vectors:
  - High capacity loading of nucleic acids
  - Excellent transfection properties
  - No payload leakage, with evidence of protection from complete degradation
  - Excellent preclinical tolerability without major unwanted immune responses
    - crucially no tracking to the liver



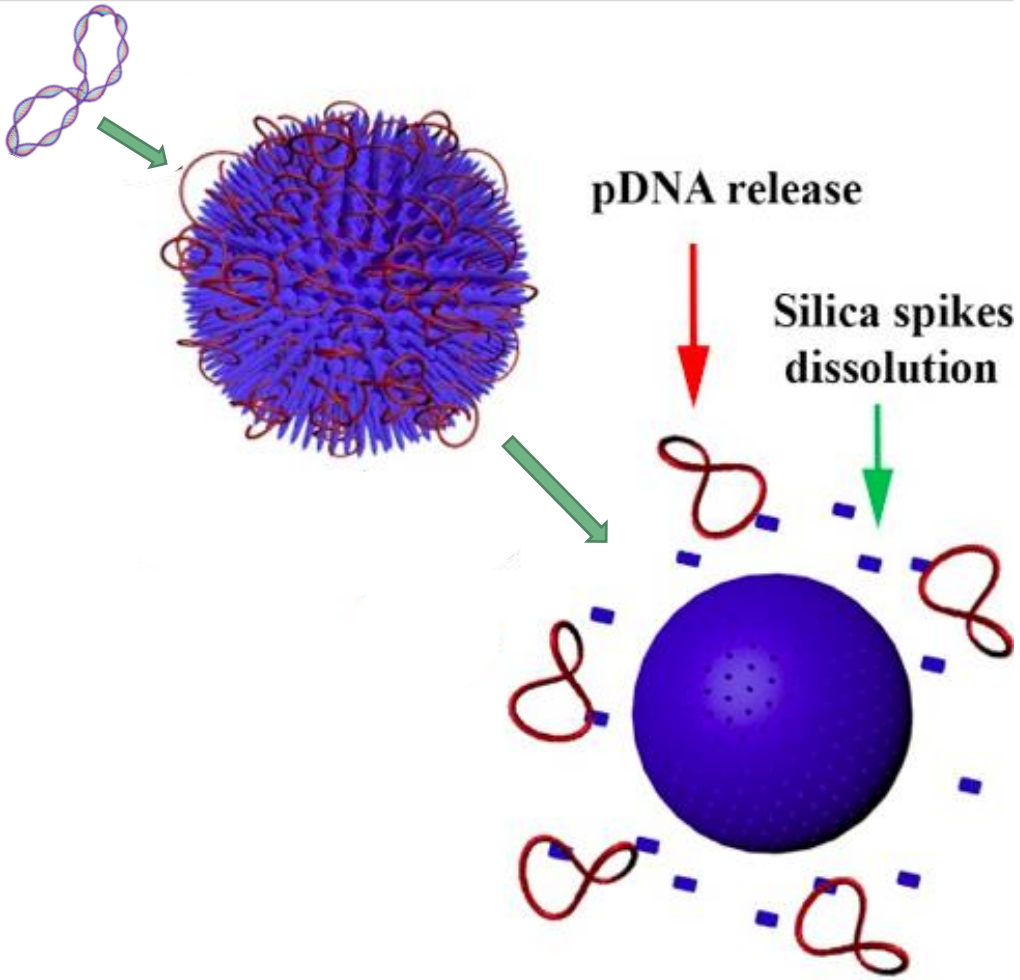
Unique Design

- Hollow nano silica particles
- Ranging from 80nm to 500nm in diameter



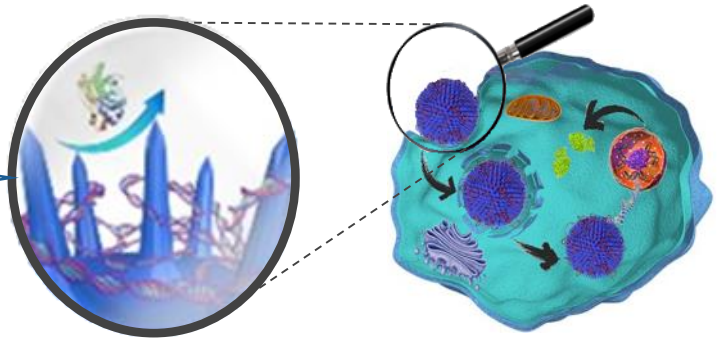
- DNA has a unique looped structure
- Difficult to attach to solid particles

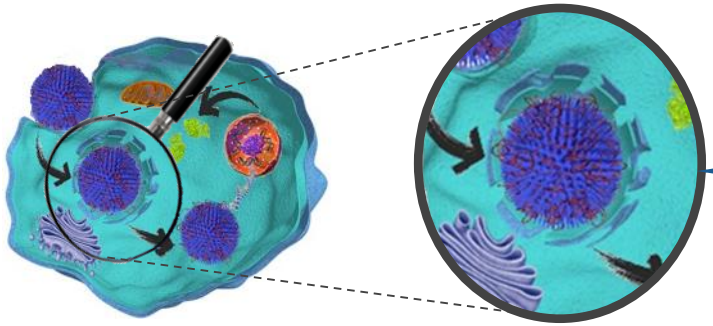
- Nuvec®
  - Hollow silica sphere
  - Covered in thin silica spikes
  - Spikes trap the DNA
  - Spikes dissolve to release DNA
  - Particle then dissolves naturally in the body



Mechanism of action to deliver DNA/RNA

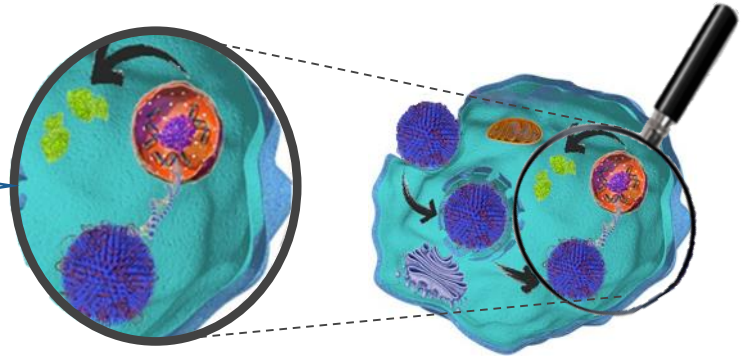
- Spikes trap and protect nucleic acid
- SiNPs attach to cell like Velcro and enter cell through process called pinocytosis





- Once inside SiNPs release contents into cytoplasm

- Nucleic acid sequence dissociates from SiNPs to allow generation of therapeutic proteins
- SiNPs degrade into harmless components



Nuvec® Further learnings since RTO

- Shows great promise as a non viral delivery vector for DNA / RNA
  - Key advantages compared to lipid and viral systems
- High capacity loading and protection of nucleic acid for effective delivery
- Excellent localised *in-vivo* transfection efficiency
- No major systemic toxicity observed even with very high doses
  - SiNPs do not appear to induce high levels of inflammatory cytokines
- Internal studies currently focused on pDNA
  - mRNA studies planned for 2018 via collaborations
- Further research in progress
  - Dose response
  - Immune response
  - Stability
  - Toxicology tests

Size of the Opportunity

Significant opportunities exist for a new novel delivery system

- The total market size for nanotechnology drug delivery was valued at $79 billion in 2012 and is expected to reach a value of $178 billion in 2019
- Large deal space:
  - Crescendo Biologics (private company)
  - Platform technology with multi-target application using special antibodies for cancer
  - Signed deal in 2016 with Takeda
    - $36m upfront payment, investment and research funding, along with preclinical milestones
    - Potential for further revenue through milestones and royalties up to $754m
- Nuvec research will inform exactly how we specialise in this market

Route to Market

Partnership opportunities with Nuvec®

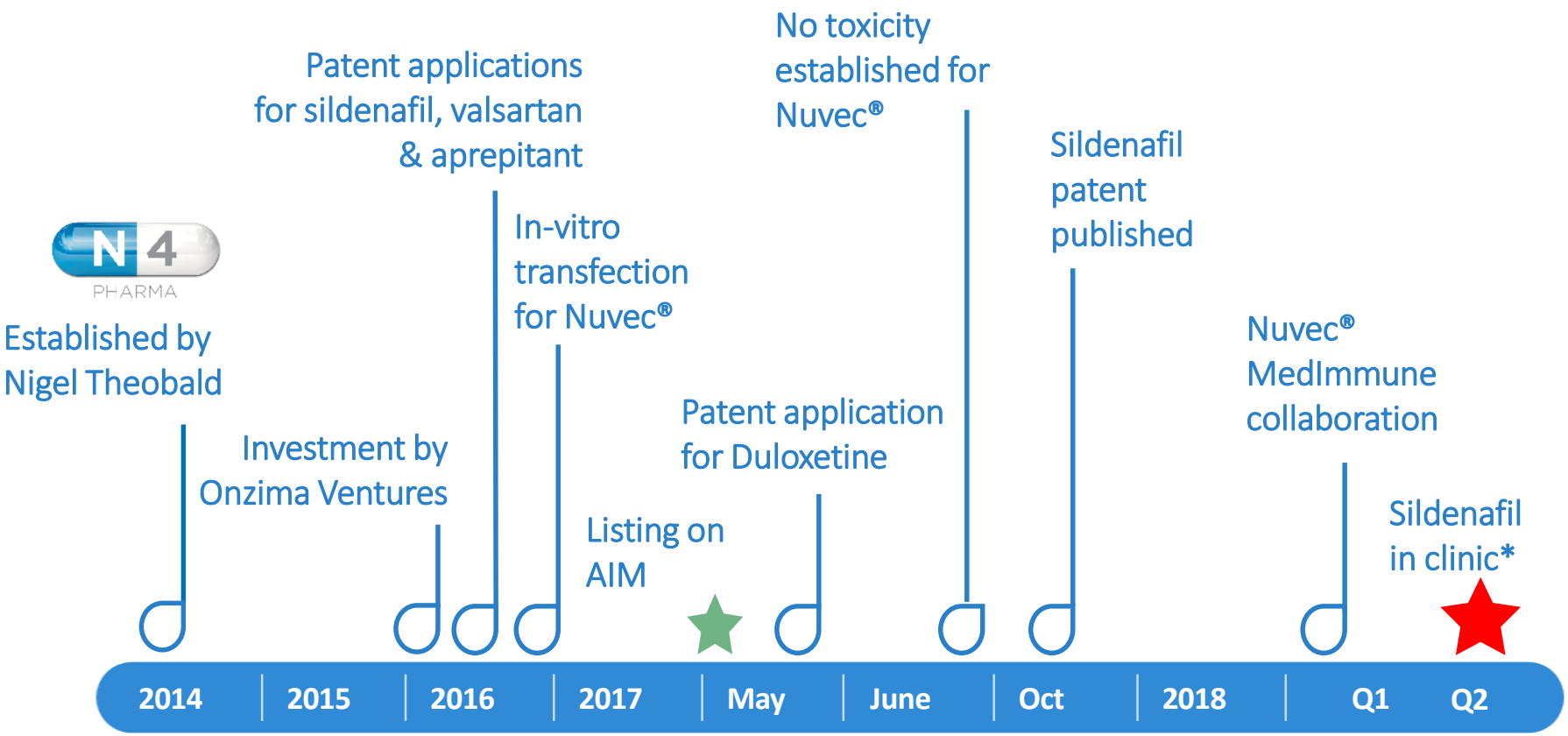
- Nuvec® has wider potential for investigation other than just cancer vaccines
  - Cancer therapeutics
  - Immunotherapy
  - Reduction in Antibiotic resistance

Summary

- Two divisions with similar business models
  - Targeting significant addressable markets
- Multiple collaboration opportunities
- Lead generic product, Sildenafil MR, in clinic
- Lower risk, less costly, quicker to market than traditional high risk drug development model
- Strong patent portfolio and IP
- Delivery system technology with huge potential for cancer vaccine and therapeutic market
- Highly experienced management team
  - Supported by experienced consultants with specialist knowledge in appropriate disciplines
- Early Nuvec® collaboration with MedImmune

Appendix

History of N4 Pharma



*Expected results end Q2 2018

Existing Pipeline and Strength of IP

Slidenafil MR Seeking to improve the speed at which sildenafil MR takes effect whilst extending the duration of action	○ UK patent filed 02 April 2016 ○ PCT patent filed 31 March 2017 ○ PCT patent published -5 October 2017
Nuvec® Silica nanoparticle non-viral delivery system for DNA and RNA	Patent licensed from University of Queensland ○ PCT patent filed 20 October 2016 ○ National phase applications October 2017
Sartans Used for the treatment of hypertension	○ UK patent filed 01 July 2016 ○ PCT patent filed 03 July 2017
Single Dose Hepatitis B Sub unit vaccine – single does reformulation of Hepatitis B surface antigen	Exclusive agreement with University of Queensland On hold- silica development focused on nuvec®
Duloxetine Reformulation of anti-depressant drug for the treatment of premature ejaculation.	○ UK patent filed 11 May 2017
Aprepitant An anti-emetic drug used in oncology.	○ UK patent filed 21 December 2016

The Board

Nigel Theobald
Chief Executive Officer

25 years' experience in healthcare & building businesses

Previously head of healthcare brands at Boots UK Limited

Grew Oxford Pharmascience Group to a £40m market cap company and managed the IPO on AIM

Paul Titley
Executive Director

Over 40 years' experience in pharmaceutical industry

Built R5 Pharmaceuticals Limited into a profitable business leading to its acquisition by Aesica Pharmaceuticals, which itself was acquired by Consort Medical for £230 million in 2014

David Templeton
Non-Executive Chairman

Experienced R&D manager with specific expertise in early clinical development

Previously worked for Pfizer, Xenova, Smithkline Beecham and GSK

Appointed as director of clinical pharmacology of Eisai Limited in 2007

Luke Cairns
Non-Executive Director

16 years' experience in corporate finance and former head of corporate finance and MD at Northland Capital Partners

Founder of LSC Advisory Limited

Associate of the Chartered Institute of Secretaries