Health Care seminar
7 October 2022
Welcome and meet the team

Steve Foots, Chief Executive Officer
Our strategic priorities

Health Care
Take advantage of the biologics revolution via:
- Investment in novel fast growing therapeutics solutions
- Development of leading strategic platforms
- Winning with innovation

Crop
Providing sustainable solutions to farmers via:
- Transition to a sustainable portfolio
- Investment in carbon reduction
- Development of delivery systems for novel biopesticides
Croda portfolio of growth businesses

Life Sciences
- Health Care
- Crop Protection
- Seed Enhancement
- Crop Care

Consumer Care
- Beauty Actives
- Beauty Care
- Fragrances and Flavours
- Home Care

Supported by: Industrial Specialties

All businesses: minimum of 1.5x GDP growth, >20% ROS, >2x ROIC

Smart science to improve lives™
Objectives and agenda for today

Objectives
- Meet the team
- Introduce Croda Health Care strategy
- Explore each growth platform
- Introduce innovation pipeline

Agenda
- Strategic focus
- Growth platforms
- Strategic execution
- Q&A
Meet the team

Executive Committee

Steve Foots
Chief Executive Officer

Jez Maiden
Group Finance Director

Daniele Piergentili
President, Life Sciences

Life Sciences leadership team

Freek Snieders
Senior Vice President, Croda Health Care

Laura Reilly
VP Marketing Life Sciences

Ritesh Tanna
Finance Director Life Sciences

Health Care leaders

James Lawrence
Global Business Director Protein and Small Molecule Delivery

Peter Tygesen
Managing Director Adjuvant Systems

Dr Steve Burgess
Managing Director Nucleic Acid Delivery

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Health Care – strategic focus

Daniele Piergentili, President Life Sciences

Freek Snieders, Senior Vice President Health Care
Where we have come from
Evolution of a world class partner for drug delivery – aligned with market need

pre 2000
Consumer Health
Market leader in topical and oral care

2000+
Promotion of standard excipients

2010+
Patient health #1
Development of speciality excipients

2018
Patient health #2
Vaccine adjuvants acquisition

2020
Patient health #3
Lipids acquisition, complementary adjuvants

2022
New strategic focus

Smart science to improve lives™
Delivering across development lifecycle & customers

Over 5,000 customers – globally

Pie chart shows breakdown of total customers 2021; other customers include contract manufacturers and generics

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Where we are now
What we said in 2019 – delivering our promises

- Accelerate speciality excipient growth
  - 20% CAGR speciality excipient sales
- Leverage selling network
  - Doubled vaccine adjuvant sales
- Target adjacencies
  - Acquired Avanti Polar Lipids
- Biologics presence
  - Key role in Pfizer Covid-19 vaccine
- Deliver high growth rates
  - Successful, profitable growth

Reported sales growth 2019-21

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Croda Health Care in context

Croda sales 2021

- Consumer Care: £763m
- Life Sciences: £361m
- Industrial Specialties: £193m
- Divested: £572m

Total: £1,890m

Life Sciences sales 2021

- Health Care: £572m
- CV-19 lipids: £361m
- Crop Protection: £193m
- Seed Enhancement: £572m

Total: £1,890m

Croda sales 2021 shows estimated analysis of PTIC sector had divestment occurred at start of 2021

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Health Care 2017-21
– increased sales; improved mix

Reported sales growth 2017-21 excluding COVID-19 lipid system sales

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Health Care 2017-21 – global footprint in drug delivery

- **PA, USA**: x2 capacity
- **NJ, USA**: New R&D Centre
- **UK**: New scale up site
- **Denmark**: x2 capacity
- **Alabama, USA**: x2 capacity
- **Japan**: +50% capacity

Key locations and investment developments:

- **Manufacturing sites**: Distributed across North America, Europe, and Japan.
- **Innovation centres**: Focused on research and development enhancements.
- **Sales offices**: Key locations for sales and distribution.
- **Major investment since 2017**: Significant growth in capacity and capabilities.

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Health Care 2017-21 – acquired adjacent technologies

Vaccine adjuvants (2018)
- Leading independent producer
- Expansion in existing vaccines
- Novel vaccine development

Lipid systems (2020)
- R&D leader
- Emerging delivery technology
- Potential for significant growth

Benefits to Croda
- Expanded patient health platforms
- Bring deep pharma knowledge
- Expanded GMP manufacturing

Benefits to acquisition
- Leverage global network
- Innovation collaboration
- Access investment for faster growth

GMP is the highest quality and regulatory standard for pharmaceutical production

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Positioning Croda for future growth

2017-21
• Accelerated growth
• Enhanced profitability
• Broadened technology platforms
• Commercialised novel technology
• Built global footprint

Croda edge
• Innovation and customer intimacy
• Breadth of portfolio
• Industry leader
• Highly differentiated
• Proven track record

Excipients 100 years  Adjuvants 80 years  Lipids 50 years
Market trends driving growth
Biologics – higher growth and value opportunity

Global pharmaceutical market value:

>$1.2 trillion
CAGR 6%

Small molecule
65% CAGR: 5%

Biologics
35% CAGR: 10-30%

Ibuprofen
Cost/treatment < $1

Zolgensma
Cost/treatment > $1m

Increasing importance of Biologics

Market value: Statista, 2021. CAGR 2022-27
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The biologics revolution

1st generation
Small molecules:
Eg Ibuprofen
<$1/ treatment
1 indication

2nd generation
Proteins (mAbs):
Eg Keytruda
>$1,000 / treatment
>40 indications

3rd generation
Nucleic Acids:
Eg Zolgensma
>$500,000 / treatment
…..infinite possibilities

Higher specificity of the treatment / lower toxicity / more personalised
Increasing value of active ingredient
Increasing complexity of delivery
A developing market with growing needs

Bubble size is the size of the market today. Date ranges for CAGR %s vary and cover the period to 2026 to 2030. Exclude COVID-19 vaccines.
Croda Pharma – our vision

**Today – Health Care**
Supplier of excipients, custom lipids & vaccine adjuvants

- Delivering high quality ingredients
- Via unique purification & synthesis know-how

**Future – Croda Pharma**
Global leader in empowering biologics delivery

- Delivering solutions and systems
- Via leading synthesis, system formulation and application technology know-how

Opportunities for new business models and higher margins
Our strategic focus
Empowering biologics delivery
A developing market with growing needs

Development need

Small molecule

Biologics

Growth potential (%)

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Strategic focus – Croda Pharma platforms

Small Molecule Delivery

Protein Delivery

Adjuvant Systems

Nucleic Acid Delivery

Sustain

Lead

Develop
Strategic Platforms – delivering increased value

Example

Nucleic Acid Delivery

Processing

Drug delivery

Complex biologic manufacture and delivery = increased value and opportunity
Strategic focus – lead and develop growth platforms

Protein Delivery
The leading portfolio of speciality excipients providing optimal systems for protein / mAbs stabilisation and delivery as well as solutions to improve bioprocessing yields

Adjuvant Systems
The world-leading vaccine adjuvants systems portfolio to enable all pharma companies to boost their therapeutic vaccines

Nucleic Acid Delivery
Innovative high purity lipid & polymer-based systems for bioprocessing and delivery of next generation nucleic acid therapeutics
Part 2: Teach-in – growth platforms

**Objective** – for each platform understand:
- Market definition
- Evolution of Croda’s position
- Market scale
- Why Croda will win
- Growth opportunities
- Investment
Growth platform
– Protein and Small Molecule Delivery

James Lawrence – Global Business Director
What is protein delivery?

Protein Delivery

- Protein active ingredients are manufactured by biological means, via cells, bacteria or yeast. They are large, sensitive molecules.
- Protein-based medicines are typically injected into the body, protecting their complex structure from being broken down by digestion if taken orally.
- A Monoclonal Antibody (mAb) is a type of protein which binds specifically to certain cells to stimulate the patient's immune system to attack those cells.

Proteins are sensitive, presenting challenges through their storage, manufacturing and administration. Excipients form key components of delivery systems for protein processing and drug delivery.
Heritage – capturing increasing value

Moving from consumer health to pharmaceuticals

Consumer health
Standard excipients
Speciality excipients
Delivery systems

Addressing more complex drug delivery challenges

Small molecule

Large molecule

Tablet
Topical cream
Liquid capsule
Injectable (small molecule)
Injectable (protein biologic)
Injectable (mAb biologic)
Vaccine

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Excipient market
– Croda targeting high growth and higher value niches

- Excipient market estimated to be worth 1-2% of overall drug market
- Excipients for small molecule APIs continue to grow mid-single digit %
- Excipients for large molecule APIs growing more quickly
- Croda focuses on high growth and high value niches
- Parenteral formulations require the highest level of purity and performance

Parenteral means administered by some route other than through the gastrointestinal tract, typically injection.

SOURCE:
Kline 2021
Protein market – biologics offer highest growth

- Proteins / mAbs market value $300bn today; 10% CAGR
- Biologics share continues to increase
- Sensitive biologic APIs can usually only be administered by injection and require high purity, high performance excipients
- 60% of total drug product pipeline is for injectable delivery

Market value: Kline 2021. Development Pipeline data based on total number of projects: Pharmacircle.

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Why Croda will win – improving the performance of drug products

Croda focuses on value not volume
Sales of parenteral excipients

Value
- Croda
- Roquette
- Pfanstiehl
- BASF
- NOF
- Other

Volume
- Roquette
- Tereos
- Merck
- Universal
- Cargill
- Other

No competitor has comparable portfolio of high purity excipients

Differentiated positioning
- Highest purity
- Batch-to-batch consistency
- Customer proximity
- Broadest range of speciality excipients

Sales of parenteral excipients by supplier 2020, Kline 2021

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Innovation
– supporting customers from big pharma to start-ups

>1,400 direct customers supplied globally
Supply all of top 20 big pharma companies
Balanced portfolio of customers
Partnering with academic researchers
24 live Open Innovation projects

Current breakdown by customer type

- Big Pharma
- CMO
- Generic
- Small Pharma
- Research
- Distributor
- Other

Pie chart shows breakdown of total customers 2021

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Innovation – growth projects across many applications

mAbs to treat cancer
Speciality excipients for cancer applications

mAb treatment to preserve sight
Speciality excipients to combat macular degeneration

Oral insulin delivery system
Speciality excipient with superior solubility
  • Alternative to injection
  • Prevents breakdown in gut; promotes absorption
  • Phase 3 US clinical trial
Innovation – developing delivery and bioprocessing solutions

Over 2,000 customer projects for formulation delivery solutions

<table>
<thead>
<tr>
<th>Protein / mAb delivery</th>
<th>Bioprocessing aids</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Croda formulation ingredients enable delivery</td>
<td>• Croda building range of process aids / reagents for use in bioprocessing</td>
</tr>
<tr>
<td>• Transitioning from ingredient supplier to solutions provider</td>
<td>• Addressing the challenges faced by the market today</td>
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</table>

Case study – global biopharma company
- Experiencing quality issues with injectable mAb formulation
- Variability within the approved specification was identified as cause
- Croda developed unique specification - predictable supply and quality
- Issue resolved – customer buying for global use

Purity and batch-to-batch consistency remain the key quality attributes

Case study – new product
- Croda has developed high performance process aid – unique product
- Will deliver guaranteed performance with higher yield

Smart science to improve lives™
Investing in growth

1. Innovation
   - Expansion of R&D capabilities from Europe/US to new markets in Asia e.g. India
   - Drug formulation team
     - Demonstrating impact / providing solutions
   - Biotech processing team
     - High purity process aids and reagents for biopharma process

2. Knowledge
   - Increase in Protein Delivery teams in target markets
   - Technical expertise and business development specialists
   - Building global network to empower biologics delivery

3. Capacity
   - Additional capacity in US, Europe and Asia
   - Building portfolio of purification technologies
Building a valuable innovation pipeline

Chart shows expected peak annual sales value of new products. X axis is anticipated launch date. Y axis is relative probability of success influenced by technical, regulatory and commercial factors.

Weighted value by 2030: ~£150m

Smart science to improve lives™
Key takeaways

**Market-leading position**
- 20 year track record in excipient systems for the pharma industry
- Recent 10-30% annual growth in speciality excipients – meeting needs for growing biologics drug delivery market

**Significant growth opportunity**
- Protein/mAb market worth $300bn and growing 10% per annum
- Increasing complexity and value add from speciality excipient development

**Exciting future growth**
- 2022-25: 10%+ annual growth expected from existing customer pipeline, leveraging Croda’s recent capacity expansion
- 2026-30: significant innovation pipeline in protein delivery and bioprocessing
Growth platform – Adjuvant Systems

Peter Tygesen, Managing Director, Adjuvant Systems
What is an adjuvant system?

Vaccine adjuvant systems enable efficacious vaccine development in novel areas
Considerable emerging demand for new tailored solutions

- Vaccine adjuvants are drug delivery systems administered together with an antigen to boost the desired immune response
- Adjuvant systems comprise multiple active components and aid design of vaccines against difficult pathogens
- Therapeutic vaccines help the body fight an already-contracted disease
- Prophylactic vaccines prevent disease
Heritage – capturing increasing value

1939
First Superfos adjuvant plant

1990
Brenntag Biosector established

2001
Site in Frederikssund opened

2012
Croda acquires Biosector and its vaccine adjuvant portfolio

2018
Plant expansion

2019
Croda acquires Biosector and its vaccine adjuvant portfolio

2022
Croda Adjuvant Systems strategy launched

2022
Croda acquires Avanti Polar Lipids expanding its reach into vaccines

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Prophylactic vaccine market – WHO driving growth

Vaccine market today

Global sales by region

- Value
- Volume

- NA & Europe = RoW
- EM = RoW

Global sales by manufacturer

- Value
- Volume

- Top 4
- Others
- Top 4 = Mainly Asian companies

Growth drivers

WHO Immunisation Agenda 2030 | Government pandemic preparedness programmes

IMPLEMENTING THE IMMUNIZATION AGENDA 2030:
A Framework for Action through Coordinated Planning, Monitoring & Evaluation, Ownership & Accountability, and Communications & Advocacy

Global sales by region

Source: marketsandmarkets.com. NA is North America, EM is Emerging Market, RoW is rest of the world. Top 4 vaccine companies are GSK, Pfizer, Sanofi, and Merck

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Therapeutic vaccine market – new vaccines accelerating growth

Growth drivers – therapeutic vaccines
- Expansion of vaccinology in new therapeutic areas
- For example:
  - Oncology
  - Neurology
- Typically higher value
- Creating large unmet need for new adjuvant systems

Source: www.pharmacircle.com based on total number of pipeline projects
Vaccine adjuvant market – growth driven by adjuvant systems

Heritage business
- Aluminium adjuvants
- Still regarded as the "gold standard"
- Applicable in ~30% of marketed vaccines in infectious diseases

Vaccine adjuvant systems
- Single component adjuvants
  - Lipids, saponins etc
- Multi component systems for desired immune response

Source: marketsandmarkets.com

Smart science to improve lives™
Why Croda will win
– uniquely diverse portfolio and expertise

Croda Vaccine Adjuvant Systems

- Unique range of adjuvants and excipients
- Formulation expertise for vaccine delivery
- Immuno-logical expertise for efficacy of adjuvant systems
- Strong IP position

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Innovation – partnering with customers in R&D

Customer R&D challenges
- Complex pathogens = “moving targets” for vaccines
- New administration routes for patient convenience
- New therapeutics

Current breakdown by customer type
- Pharma
- Academic
- Biotech / start ups
- Pharma (via distributors)
- Distributors
- Government Institute

Key partners
- Pharma companies (including all top 4)
- Academic research, Government institutes
- Biotech and start ups

Example Partners
- Pharma
  Croda is supplying Janssen with the adjuvant for the HIV-1 vaccine currently in clinical phase 3
- Biotech
  Croda is working with Evaxion Biotech on their proprietary pipeline in immunotherapy in cancer and infectious disease

>200 samples for discovery, preclinical and clinical development to
>60 different R&D groups
YTD 2022

Pie chart shows breakdown of total customers in 2021
Smart science to improve lives™
Innovation
– growth projects in new therapeutic areas

Heritage business

Adjuvant systems

New administrative routes

Typical vaccines:
- HPV, hepatitis B, Conjugate Pneumococcal
  Aluminium adjuvants in 30% of all marketed human vaccines

Project examples:
- Herpes Zoster, Cancer, Alzheimer, RSV, Malaria
  Therapeutic vaccine projects
  +75% in current portfolio

Example: patch formulation
  • Non-invasive formulation technologies and innovative vaccines platforms

>100 commercial customers
~100 preclinical and clinical projects
>10 projects

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Investing in growth

1. Innovation
• Internal R&D and licensing for new adjuvants and systems
• New R&D centre of excellence – combining formulation and immunology know-how
• Establishing partnerships in academia, start ups and biotech

2. Knowledge
• Adding key resources to R&D, manufacturing and supply chain
• Growing sales and marketing to support ambitious strategy

3. Capacity
• Denmark – mineral and saponin-based adjuvants and systems
• Avanti – lipid-based adjuvants and systems
• New US multi-platform scale-up site

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Building a valuable innovation pipeline

Chart shows expected peak annual sales value of new products. X axis is anticipated launch date. Y axis is relative probability of success influenced by technical, regulatory and commercial factors.

Weighted value by
2030: ~£80m
2035: ~£200m

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Key takeaways

**Market-leading position**
- Best invested third party adjuvant supplier
- Unique pipeline of adjuvants AND building blocks for innovative adjuvant systems to support new vaccine development

**Significant growth opportunity**
- WHO programme driving growth in heritage vaccines
- Rapid development of new vaccine applications, particularly therapeutics

**Exciting future growth**
- 2022-25: driven by existing customer pipeline and expansion of constrained capacity
- 2025-30: building innovation pipeline in adjuvant systems
Growth platform
– Nucleic Acid Delivery

Dr. Stephen W. Burgess
Managing Director, Nucleic Acid Delivery
What are nucleic acids?

- Present in all cells and essential for all forms of life
- Two major forms:
  - Deoxyribonucleic acid (DNA)
  - Ribonucleic acid (RNA)
- Primary role is to store and process genetic information
- Introduction of nucleic acids into cells counteracts defective genes in inherited and acquired disorders

Nucleic acid therapeutics require sophisticated delivery technologies to overcome inherent challenges. Lipid Nanoparticles (LNP) are preferred delivery systems for nucleic acids, comprising multiple components.
Heritage – building relationships for success

- Avanti founded to supply research market
- Exosurf receives market approval
- Avanti initiates work with Acuitas
- Croda acquires Avanti expanding reach into nucleic acid delivery

1967 - 1985
Avanti founded to supply research market

1985
Exosurf receives market approval

1990-2017
Avanti initiates work with Acuitas

2017
Clinical support of gene therapy trials

2020
BioNTech and Pfizer engage Avanti to supply lipids for development of COVID-19 vaccine

GMP is the highest quality and regulatory standard for pharmaceutical production
Smart science to improve lives™
Market – rapidly expanding nucleic acid therapy development pipeline

Rapidly expanding pipeline
- 2,500 projects – increasing rapidly
- Mostly early phases of development – beginning to commercialise over next 5-7 years

Growth of nucleic acid therapies
>20% CAGR

<table>
<thead>
<tr>
<th>Therapy Type</th>
<th>Growth Rate</th>
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<tbody>
<tr>
<td>Viral vector</td>
<td>15%</td>
</tr>
<tr>
<td>mRNA</td>
<td>17%</td>
</tr>
<tr>
<td>Cell and gene therapy</td>
<td>&gt;25%</td>
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</tbody>
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Source: Pharmacircle based on total number of pipeline projects

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Market – targeting high-growth technologies

Nucleic acid delivery >20% CAGR

Market segment: mRNA

$\text{m commercial-scale mRNA applications}$

<table>
<thead>
<tr>
<th>Year</th>
<th>CV19</th>
<th>Prophylactic vaccines</th>
<th>Therapeutic vaccines</th>
<th>Therapeutics</th>
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<tbody>
<tr>
<td>2025</td>
<td></td>
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<td>2030</td>
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<td>2035</td>
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- Non-CV mRNA vaccines / therapeutics market: $25bn by 2035
- Of which, lipid component niche: $1.5bn

Market segment: gene editing

- Gene editing market: >$5bn in 2021
- CAGR >20%; $36bn by 2030
- Of which, lipid component niche: a further $1.5bn

Gene editing market

>20% CAGR


Genome Editing Market, Global Outlook and Forecast 2022-2030, Allied Market Research, August 2022

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Why Croda will win – unique position from discovery to commercial supply

**Technology development**
- leading global R&D expert

**R&D** – collaboration based on technical expertise

**Scale-up** – transferability to GMP manufacture

**Commercialisation** – Production capability to support commercial supply

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**Competitors**
- One primary competitor supplying core lipid products for legacy liposomal drugs
- Three primary competitors supplying nucleic acid delivery space
- No competitor with comparable diverse portfolio of lipid products or pipeline projects

**Differentiated positioning**
- Strong brand loyalty through Avanti R&D business and expert technical collaborations
- Unique formulation expertise in lipid-based delivery
- Unique portfolio of lipids to develop next-generation materials for nucleic acid delivery
- Ability to support discovery through commercial launch and beyond

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**Strengthening customer relationship**
Innovation – partner in pharma research

Current research customers

- Pharma / biotech
- Government institutes
- Pharma via distributors
- Research Institutes
- Distributors
- Academic research

~50% of total research sales in pharma/biotech space

Key Partners

Research and clinical development

Avanti is a preferred manufacturer for Acuitas Therapeutics and their licensing partners to support clinical development.

Customer collaborations

In addition to being a key supplier, Avanti/Croda is actively collaborating with BioNTech on advanced materials to improve vaccine delivery and tolerability.
**Innovation** – growth projects at forefront of nucleic acid revolution

**Prophylactic vaccines**
- 76 projects
- Croda contributing to >50% of these projects

**Therapeutic vaccines**
- 32 projects

**Therapeutics**
- 72 projects
- 100-1,000x more lipid required

**Gene editing**

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**Example: influenza**
- 8 clinical trials; 1 in Phase 3
- Flu / RSV / CV19 combinations
- ~1.5bn influenza vaccines pa

**Example: cancer immunotherapy**
- 17 clinical trials; 5 in Phase 2
- mRNA for patient-specific cancers
- Targeting breast, melanoma, prostate, ovarian cancer

**Example: protein replacement**
- 2 clinical trials; Phase 2
- Targeting cardiac disease and cystic fibrosis
- Programmes in pre-clinical studies for haemophilia A/B and multiple metabolic diseases

**Example: Genetic heart disease**
- Affecting 31m worldwide
- Single course turns off specific problematic genes
- Combats arterial plaque forming
- World’s first gene editing patient dosed in 2022

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Smart science to improve lives™
Investing in growth

1. Innovation
- Future extensions to pipeline from Avanti R&D and licensing
- New products to improve lipid nanoparticle delivery systems
- New transfection agents for cell & gene therapy

2. Knowledge
- R&D to support customers with application data
- Sales and marketing to support ambitious strategy

3. Capacity
- R&D capability, Avanti, US
- Further capacity at UK site, supported by UKG co-investment
- Establish new multiproduct scale up at new US site, supported by USG co-investment
Building a valuable innovation pipeline

Chart shows expected peak annual sales value of new products. X axis is anticipated launch date. Y axis is relative probability of success influenced by technical, regulatory and commercial factors.

Weighted value by 2030: ~ £150m

Smart science to improve lives™
Key takeaways

**Market-leading position**
- Avanti established as global leader in lipid delivery – first to commercialise Covid lipids
- Strong R&D presence in pharma gives access to drug / vaccine discovery and clinical development

**Significant growth opportunity**
- Covid-19 confirmed therapeutic application of nucleic acid – thousands of opportunities in clinical development
- mRNA vaccines will greatly improve existing treatments, with gene editing being the next revolution in medicine

**Exciting future growth**
- 2022-25: lipid demand stabilizing, customer project portfolio broadening, new capacity for future expansion
- 2026-30: commercialisation of clinical pipeline in lipid systems
Empowering biologics delivery – strategy execution

Daniele Piergentili, President Life Sciences
Empowering biologics delivery

**Growth platform**

- **Protein Delivery**
  - Leading partner for high purity excipients and bioprocessing aids

- **Adjuvant Systems**
  - Broadest portfolio of vaccine adjuvants and systems

- **Nucleic Acid Delivery**
  - Unique portfolio of lipids, polymers and functional ingredients to create unique solutions and systems

**Market Opportunity**

- **Lead**
  - >10% market CAGR with limited competition driven by therapeutic mAbs blockbusters

- **Lead**
  - >13% market CAGR with very limited competition serving the therapeutic vaccines market

- **Develop**
  - >20% market CAGR fueled by the genome revolution – nucleic acid therapeutics should represent >30% of pipelines in the next 10 years

**UVP is unique value proposition**

Smart science to improve lives™
Strategy execution

A new strategy and brand

Croda Pharma
Empowering biologics delivery

- Small Molecule Delivery
- Protein Delivery
- Nucleic Acid Delivery
- Adjuvant: Systems

A clear execution plan

- Innovation
- Knowledge
- Capacity
- M&A and licensing
Innovation – Smart science to improve lives™

Opportunities for new business models and margin expansion

- Sustainable sources
- Unique quality
- Unique technology

- IP
- Value/outcome
- Unique solution

New business models
Innovation – exciting pipeline across all platforms

£380m weighted value by 2030
- Balanced across platforms
- Balanced in project type
- Balanced in project size
- Risk adjusted for regulatory, technical, and market introduction

Chart shows expected peak annual sales value of new products. X axis is anticipated launch date. Y axis is relative probability of success influenced by technical, regulatory and commercial factors.

Smart science to improve lives™
Knowledge – building on strong global foundations

Leveraging combined knowledge, enriching innovation

Expanding our teams, digitalising our approach

Establishing market-facing, technology-led teams to drive ambition

Knowledge – building on strong global foundations

Leveraging combined knowledge, enriching innovation

Expanding our teams, digitalising our approach

Establishing market-facing, technology-led teams to drive ambition
## Capacity – capex with government co-investment

<table>
<thead>
<tr>
<th>Protein Delivery</th>
<th>Adjuvant Systems</th>
<th>Nucleic Acid Delivery</th>
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<tbody>
<tr>
<td><strong>Capex 2020-21</strong></td>
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<tr>
<td>Doubled US capacity</td>
<td>Doubled capacity in Denmark</td>
<td>Established UK scale-up site</td>
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<tr>
<td>50% more capacity in Japan</td>
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<tr>
<td><strong>Capex 2022-24</strong></td>
<td></td>
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<tr>
<td>R&amp;D / projects expansion</td>
<td>New US multi-product scale-up site</td>
<td>UK capacity expansion</td>
</tr>
<tr>
<td>£40m</td>
<td>£45m + £50m US Government co-investment</td>
<td>£25m + £15m UK Government co-investment</td>
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Capex 2022-24 is additional to routine replacement and growth investment.
M&A and licensing – clear framework

Technology / Knowledge

Partner

License pipeline

Platform acquisition
Sustainable value creation
2021-25 – continued customer driven growth

**Proteins / small molecules**
- High-single digit % sales CAGR 2021-25

**Adjuvant systems**
- Double digit % sales CAGR 2021-25

**Nucleic acids**
- Double digit % non-CV19 sales CAGR 2021-25

**Faster growth for biologic APIs**
**Accelerating growth through new systems**
**Rapidly developing portfolio**
2025+ – sales growth accelerated by innovation

Future growth rates are management forecasts, excluding Nucleic Acid COVID-19 sales. Innovation pipeline value is weighted based on technical, market and regulatory factors.

Smart science to improve lives™
2030 ambition – £1bn pharma opportunity

- 2021
  - CV19
- Customer-driven
  - Low double digit % growth
- Innovation pipeline
  - ~£380m
- M&A
- 2030

£1bn
Key takeaways

**Strong Delivery**
- Built a leading portfolio of speciality excipients
- ‘Buy and build’ expansion strategy working well

**Significant growth opportunity**
- Biologics revolution provides a unique market opportunity
- ‘Empowering Biologics Delivery’ strategy
- Based on three growth platforms with a clear execution plan

**Exciting future growth**
- 2022-25: low double digit % customer-driven growth pipeline
- 2026-30: exciting innovation pipeline to accelerate opportunities
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