AstraZeneca
What science can do

Meet AZN management: BioPharmaceuticals

Mene Pangalos, Executive Vice President, BioPharmaceuticals R&D

Ruud Dobber, Executive Vice President, BioPharmaceuticals Business Unit

25 March 2021

Interactive event for investors and analysts. This webinar is being recorded.
https://astrazeneca.zoom.us/webinar/register/WN_bGgqh6nRS120V4JAbnFLvQ

Forward-looking statements

In order, among other things, to utilise the 'safe harbour' provisions of the US Private Securities Litigation Reform Act of 1995, AstraZeneca (hereafter 'the Group') provides the following cautionary statement: this document contains certain forward-looking statements with respect to the operations, performance and financial condition of the Group, including, among other things, statements about expected revenues, margins, earnings per share or other financial or other measures. Although the Group believes its expectations are based on reasonable assumptions, any forward-looking statements, by their very nature, involve risks and uncertainties and may be influenced by factors that could cause actual outcomes and results to be materially different from those predicted. The forward-looking statements reflect knowledge and information available at the date of preparation of this document and the Group undertakes no obligation to update these forward-looking statements. The Group identifies the forward-looking statements by using the words 'anticipates', 'believes', 'expects', 'intends' and similar expressions in such statements. Important factors that could cause actual results to differ materially from those contained in forward-looking statements, certain of which are beyond the Group's control, include, among other things: the risk of failure or delay in delivery of pipeline or launch of new medicines; the risk of failure to meet regulatory or ethical requirements for medicine development or approval; the risk of failure to obtain, defend and enforce effective intellectual property (IP) protection and IP challenges by third parties; the impact of competitive pressures including expiry or loss of IP rights, and generic competition; the impact of price controls and reductions; the impact of economic, regulatory and political pressures; the impact of uncertainty and volatility in relation to the UK's exit from the EU; the risk of failures or delays in the quality or execution of the Group's commercial strategies; the risk of failure to maintain supply of compliant, quality medicines; the risk of illegal trade in the Group's medicines; the impact of reliance on third-party goods and services; the risk of failure in information technology, data protection or cybercrime; the risk of failure of critical processes; any expected gains from productivity initiatives are uncertain; the risk of failure to attract, develop, engage and retain a diverse, talented and capable workforce; the risk of failure to adhere to applicable laws, rules and regulations; the risk of the safety and efficacy of marketed medicines being questioned; the risk of adverse outcome of litigation and/or governmental investigations; the risk of failure to adhere to increasingly stringent anti-bribery and anti-corruption legislation; the risk of failure to achieve strategic plans or meet targets or expectations; the risk of failure in financial control or the occurrence of fraud; the risk of unexpected deterioration in the Group's financial position; and the impact that the COVID-19 global pandemic may have or continue to have on these risks, on the Group's ability to continue to mitigate these risks, and on the Group's operations, financial results or financial condition. Nothing in this document, or any related presentation/webcast, should be construed as a profit forecast.

Agenda

BioPharmaceuticals Business Unit

BioPharmaceuticals R&D

COVID-19

Q&A

Chronic diseases are a staggering, growing burden to patients and society

	T2 Diabetes	Heart Failure	Chronic Kidney Disease	Asthma	COPD	Lupus[1]
2020 Global Prevalence	463 million[2]	64 million[3]	840 million[4]	339 million[5]	384 million[6]	5 million[7]
Mortality per year	1.6 million[8]	50% die within 5 yrs[9]	1.2 million[10]	400k[11]	3.1 million[12]	**SLE –** a top 20 cause of death for women (US)[13]

The ambition is to transform treatment for billions of people living with chronic diseases

1. Systemic lupus erythematosus, Cutaneous lupus, lupus nephritis 2. Ogurtsova K, et al. Diabetes Res Clin Pract. 2017;128:40–50 3. Global Burden of Disease Study 2016. Lancet. 2017;390:1211-1259 4. Jager, et al. Nephrology Dialysis Transplantation 2019;34:1803-1805 5. GINA, The Global Asthma Report 2018 6. Adeloye D, et al. J Glob Health. 2015;5(2):020415 7. Lupus Foundation of America. Lupus facts and statistics [Online]. 709–33 8. WHO. Diabetes [online] 9. Mozaffarian D, et al. Heart Disease and Stroke Statistics-2016 Update: A Report From the American Heart Association. Circulation. 2016;133(4):e38-360 10. Carney EF. Nature. 2020:16;251 11. Global Asthma Report. 2014 [online] 12. The Guardian. 2012 [online] 13. Yen EY, Singh RR. Arthritis Rheumatol. 2018; 70(8):1251-55. 13.

Leading with an unmatched portfolio and growing pipeline

Unmatched portfolio

CVRM[1]

farxiga (dapagliflozin)

BRILINTA ticagrelor tablets

Roxadustat Capsules

LOKELMA™ powder for oral suspension Sodium zirconium cyclosilicate

R&I[2]

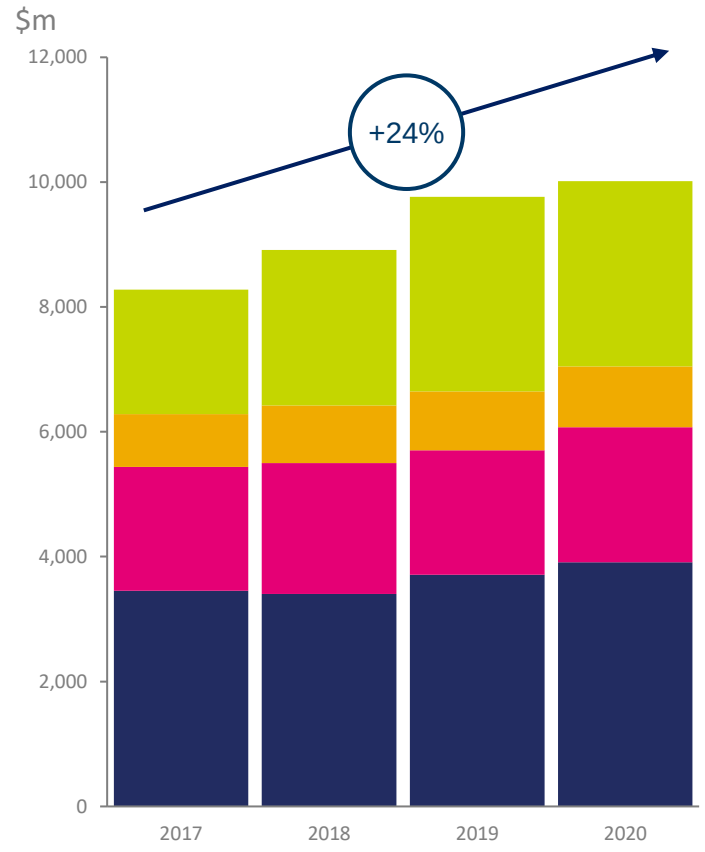
BREZTRI AEROSPHERE (budesonide, glycopyrronium, and formoterol fumarate) Inhalation Aerosol

Symbicort budesonide/formoterol

Fasenra (benralizumab) Subcutaneous Injection 30 mg

1. Cardiovascular, Renal & Metabolism 2. Respiratory & Immunology.

New CVRM and R&I today



US Europe Established Rest of World (ERoW) Emerging markets (EM)

Product Sales at actual exchange rates. Growth rate at CER.

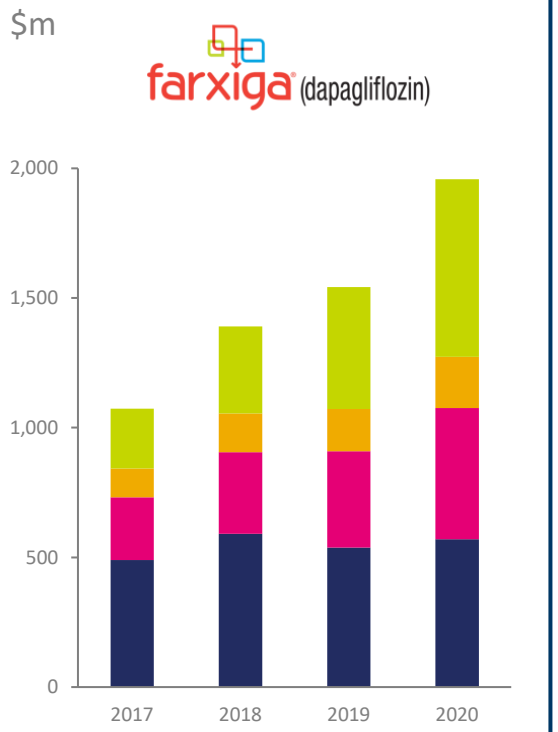
Portfolio tomorrow

Phase III LCM	Phase III NME
Farxiga DAPA-CKD SGLT2 CKD	roxadustat[6] HIF-PH anaemia of CKD, MDS
Farxiga DAPA-MI SGLT2 prevention of HF and CV death following a MI[3]	PT027[7] ICS/SABA asthma
Farxiga DELIVER SGLT2 HFpEF[4]	anifrolumab TULIP Type I IFN receptor SLE
Fasenra EDD[5] diseases	tezepelumab[8] TSLP severe asthma
Fasenra IL5R COPD	nirsevimab[9] mAb-YTE passive RSV immunisation
Breztri LABA/LAMA/ICS asthma	brazikumab IL23 Crohn's disease

3. Acute myocardial infarction 4. Heart failure with preserved ejection fraction 5. Eosinophilic driven diseases including: eosinophilic granulomatosis with polyangiitis, eosinophilic esophagitis, hypereosinophilic syndrome, nasal polyps, bullous pemphigoid 6. Collaboration with FibroGen Inc. 7. Collaboration with Avillion LLP. 8. Collaboration with Amgen Inc. 9. Collaboration with Sanofi S.A.

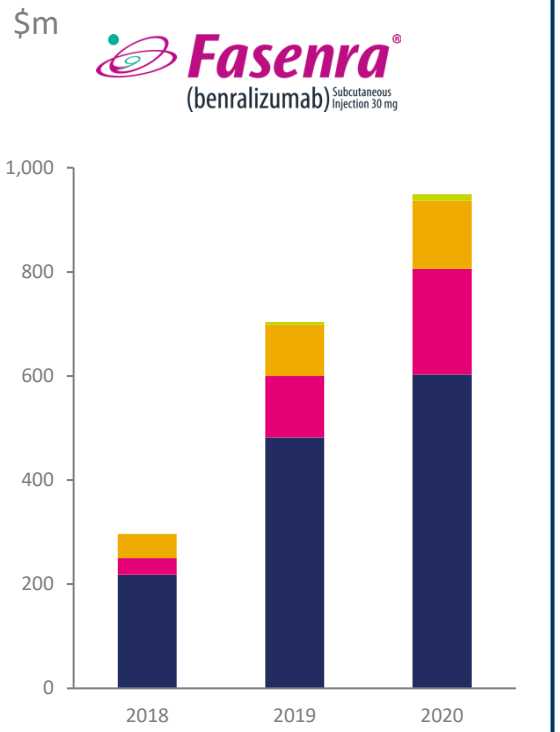
Strong commercial execution

T2D[1] and HF[2]



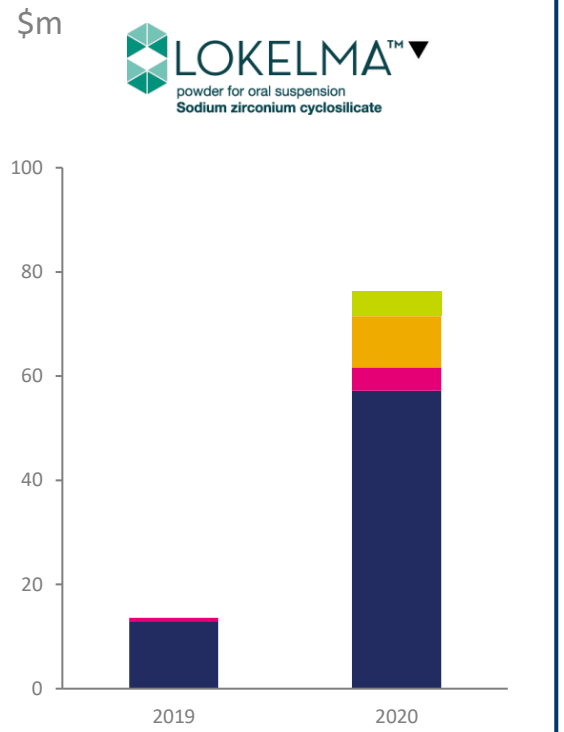
CKD[3] under review

Severe asthma



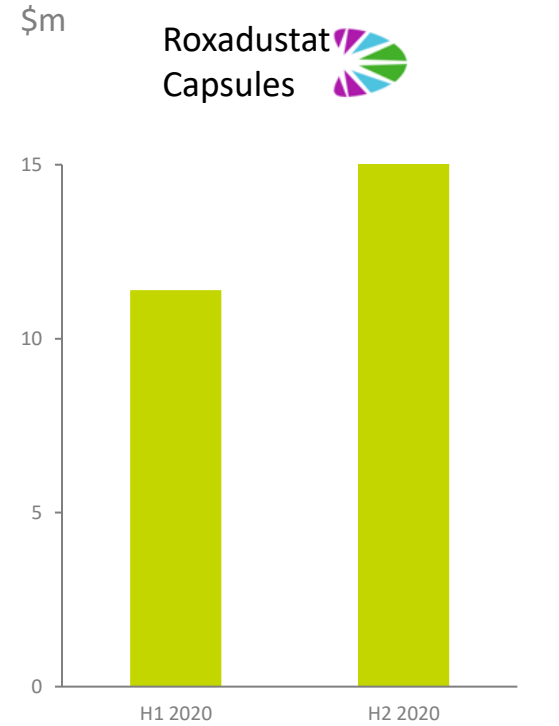
A leading biologic medicine[4]

Hyperkalaemia



Accelerated momentum

Anaemia of CKD



Strong start in China

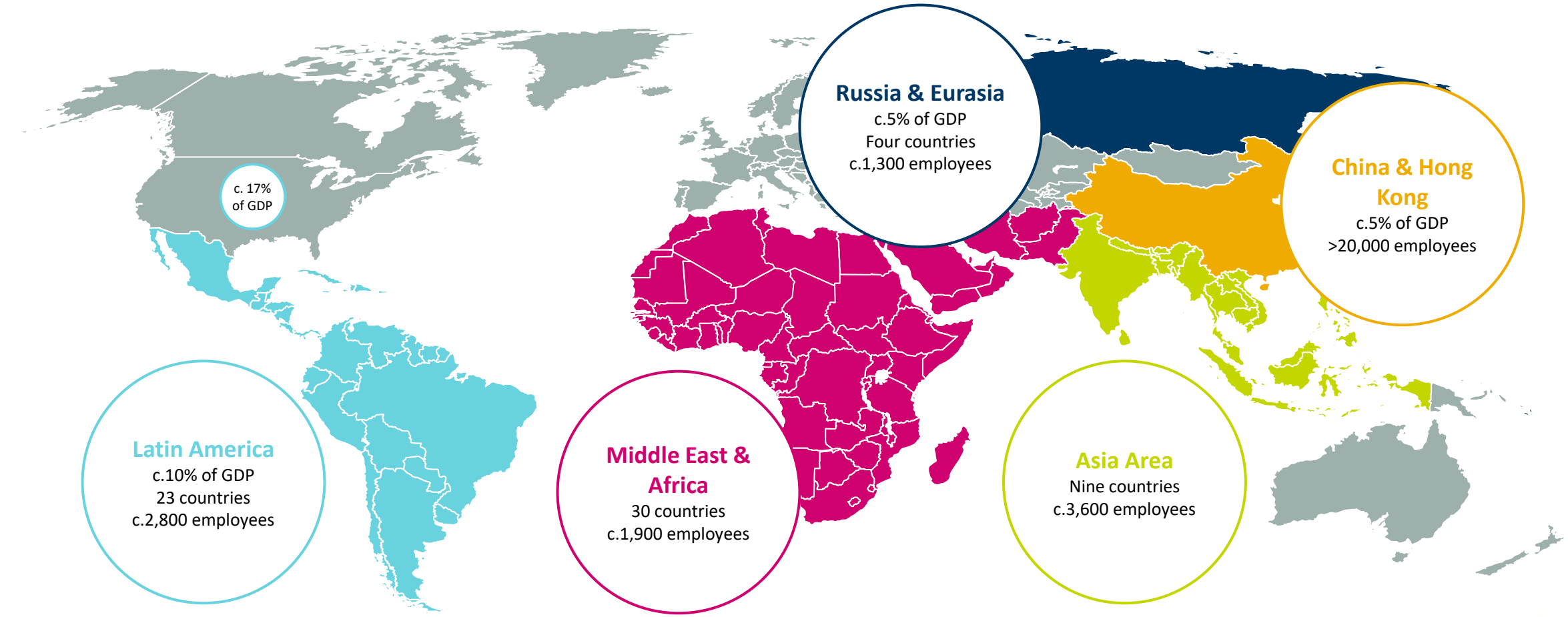
US Europe ERoW EM

Product Sales at actual exchange rates. 1. Type-2 diabetes 2. Heart failure 3. Chronic kidney disease 4. Leading novel biologic medicine in severe asthma in many markets based on new to brand prescriptions. Market shares are total patient share in severe, uncontrolled asthma; specialty pharmacies and 'buy and bill' market, IQVIA market research.

Total revenue booked by AstraZeneca. Collaboration with FibroGen Inc. which booked in-market sales ($72.5m) in China in 2020.

Emerging markets

Footprint across four continents and over 70 countries



Source: The World Bank, https://data.worldbank.org/indicator/SH.XPD.CHEX.GD.ZS.

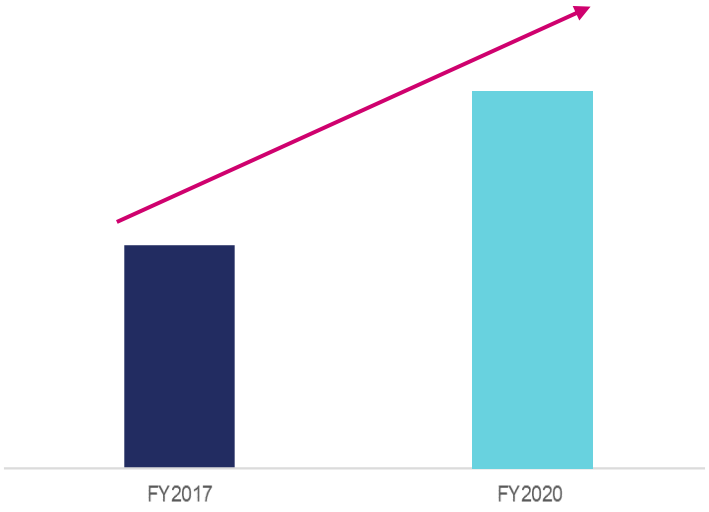
Emerging markets

Strong growth both in China and other EMs

China

+68%

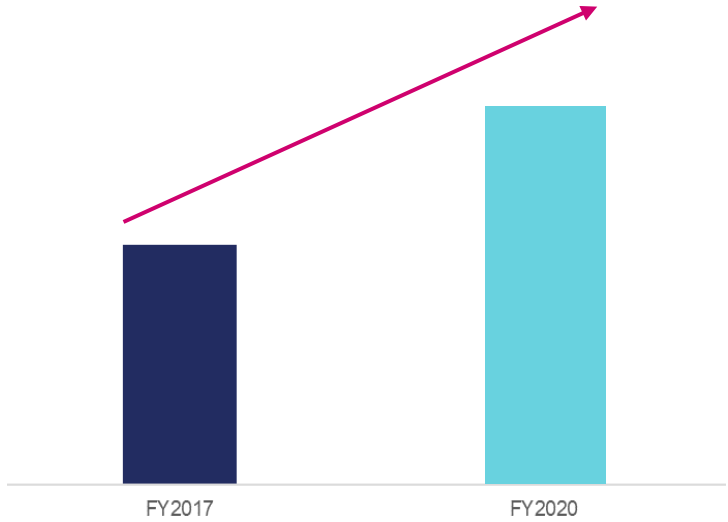
Growth in New CVRM and R&I product sales



EMs ex. China

+56%

Growth in New CVRM and R&I product sales

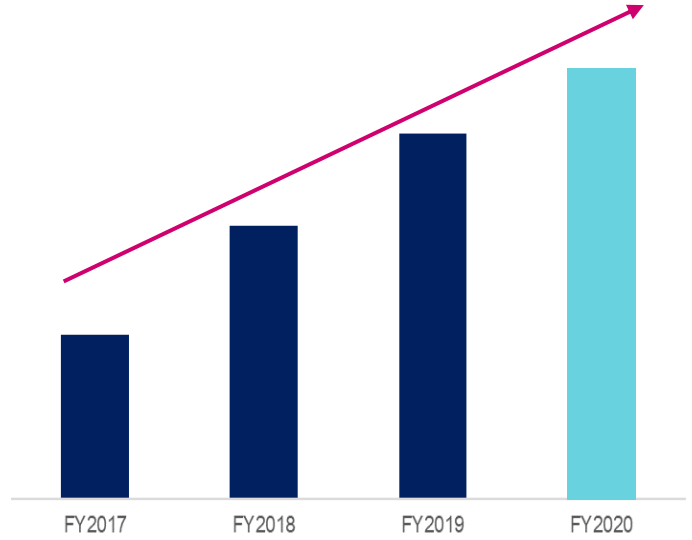


EMs ex. China: *Forxiga*

farxiga (dapagliflozin)

Ranked #1

Farxiga is ranked as the number one SGLT2 inhibitor in nine EM ex. China countries



Product sales at actual exchange rates. Growth rates at CER.

Unique opportunity to transform kidney care by 2025

Underdiagnosed and undertreated

>2 billion

People at risk of developing CKD[1]

c.840 million

Estimated people with CKD[2]

+12%

Actual people diagnosed with CKD[3]

Expanding early diagnosis and care

Three thousand

Hospitals participating

800 thousand

Patients screened to date

50%

Screened patients that have elevated albumin-to-creatinine ratio (ACR)

Transforming CKD management

Partnerships

Will increase treatment at Stage 3 by 2025

1. Liyanage T, Ninomiya T, Jha V, Neal B, Patrice HM, Okpechi I, Zhao MH, Lv J, Garg AX, Knight J, Rodgers A, Gallagher M, Kotwal S, Cass A, Perkovic V. Worldwide access to treatment for end-stage kidney disease: a systematic review. The Lancet. 2015 May 16;385(9981):1975-82. doi: 10.1016/S0140-6736(14)61601-9. Epub 2015 Mar 13. PMID: 25777665 2. Kitty J Jager, Csaba Kovesdy, Robyn Langham, Mark Rosenberg, Vivekanand Jha, Carmine Zoccali, A single number for advocacy and communication - worldwide more than 850 million individuals have kidney diseases, Nephrology Dialysis Transplantation, Volume 34, Issue 11, November 2019, Pages 1803–1805, https://doi.org/10.1093/ndt/gfz174 3. Vaidya SR, Aeddula NR. Chronic Renal Failure 2019. Available at: https://knowledge.statpearls.com/chapter/0/28357 (Accessed Oct 2020).

Transforming care for 1m patients with severe asthma by 2030

Aiming for biologics uptake similar to other inflammatory diseases

Headroom for growth

34 million

Patients with severe asthma[1,2]

45%

treated in primary care[3]

15%

eligible patients receive a biologic[3,4]

Accelerating uptake and access

Digital

Activation and referral tools driving specialist treatment review

Enabling @home monitoring treatment

39 thousand

Patients enrolled

42%

Patients self-administer *Fasenra*

1. GINA, The Global Asthma Report 2018 2. Wenzel S, et al. *Am J Respir Crit Care Med*. 2005;172:149-160 3. AstraZeneca 4. Versus 45% in rheumatoid arthritis (US).

Building the BioPharmaceuticals team of the future

Unmatched portfolio

farxiga (dapagliflozin)

BRILINTA ticagrelor tablets

Roxadustat Capsules

LOKELMA™ powder for oral suspension Sodium zirconium cyclosilicate

BREZTRI AEROSPHERE (budesonide, glycopyrronium, and formoterol fumarate) Inhalation Aerosol

Symbicort budesonide/formoterol

Fasenra (benralizumab) Subcutaneous Injection 30 mg

Transform treatment for billions of people living with chronic diseases

Reimagining healthcare delivery

Data analytics
Omnichannel
Go-to-market models

Strong & diverse talent pipeline

Building next generation capabilities in new specialty areas

Agenda

BioPharmaceuticals Business Unit

BioPharmaceuticals R&D

COVID-19

Q&A

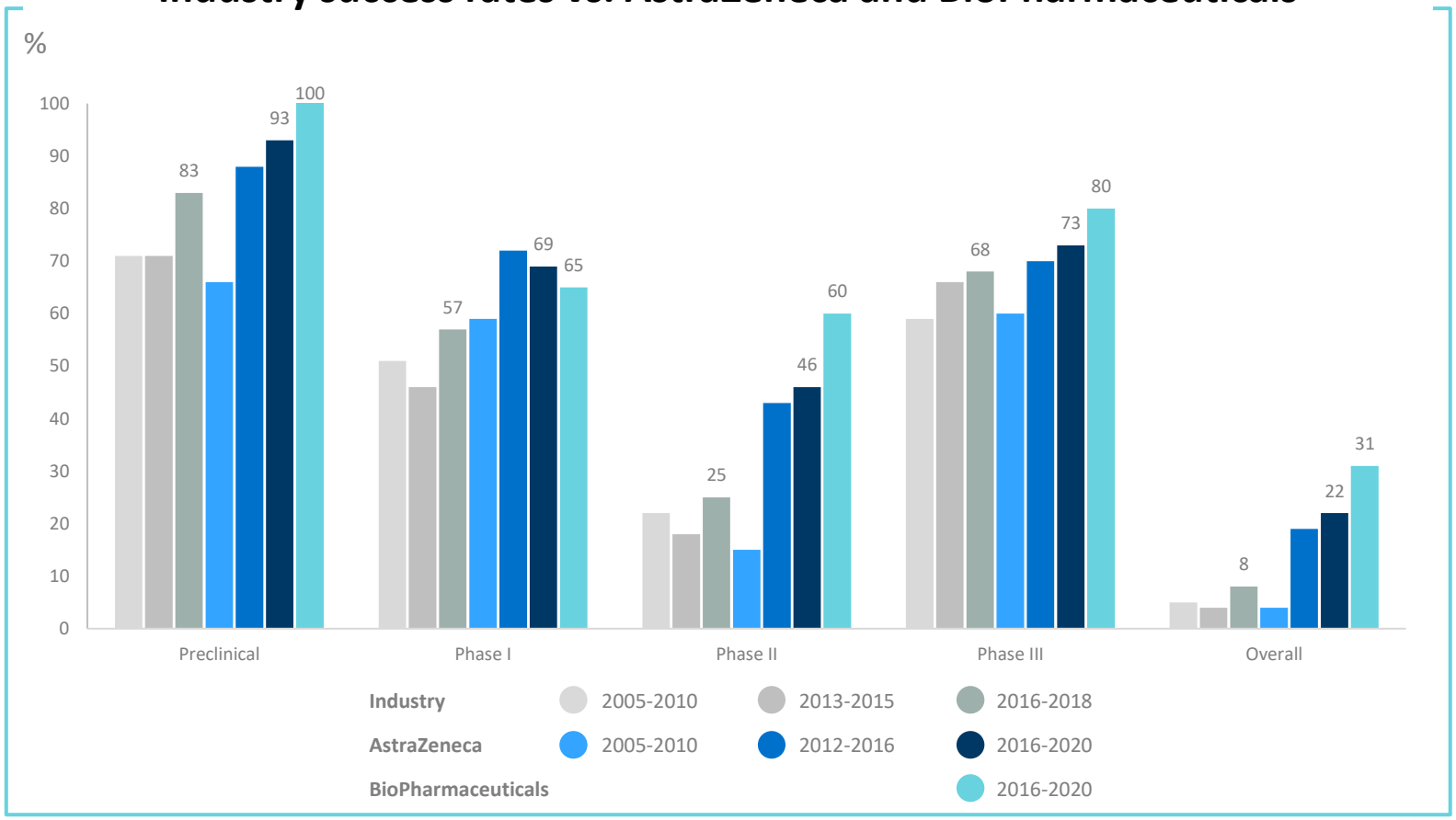
AstraZeneca's 5R framework has increased productivity

- Identifying the **right target**
- Making sure the molecule gets to the **right tissue** where it is needed
- Ensuring the **right safety** with minimal side effects
- Selecting the **right patients** that will benefit
- Defining the **right commercial** value and future viability

---

- Embedding the **right digital** solutions to improve efficiency and deliver quality gains

Industry success rates vs. AstraZeneca and BioPharmaceuticals



Source: AstraZeneca based on industry benchmarks (peer companies) provided by CMR International (Clarivate).

R&D productivity in 2020

Progress made across all R&D

123

high-impact journal[1] manuscripts published in 2020 (vs. four in 2012)

39%

increase in the number of Phase II projects from 2016-2020

890

journal publications overall in 2020 (vs. 367 in 2012)

15

projects with validated mechanism of action in 2016-2020

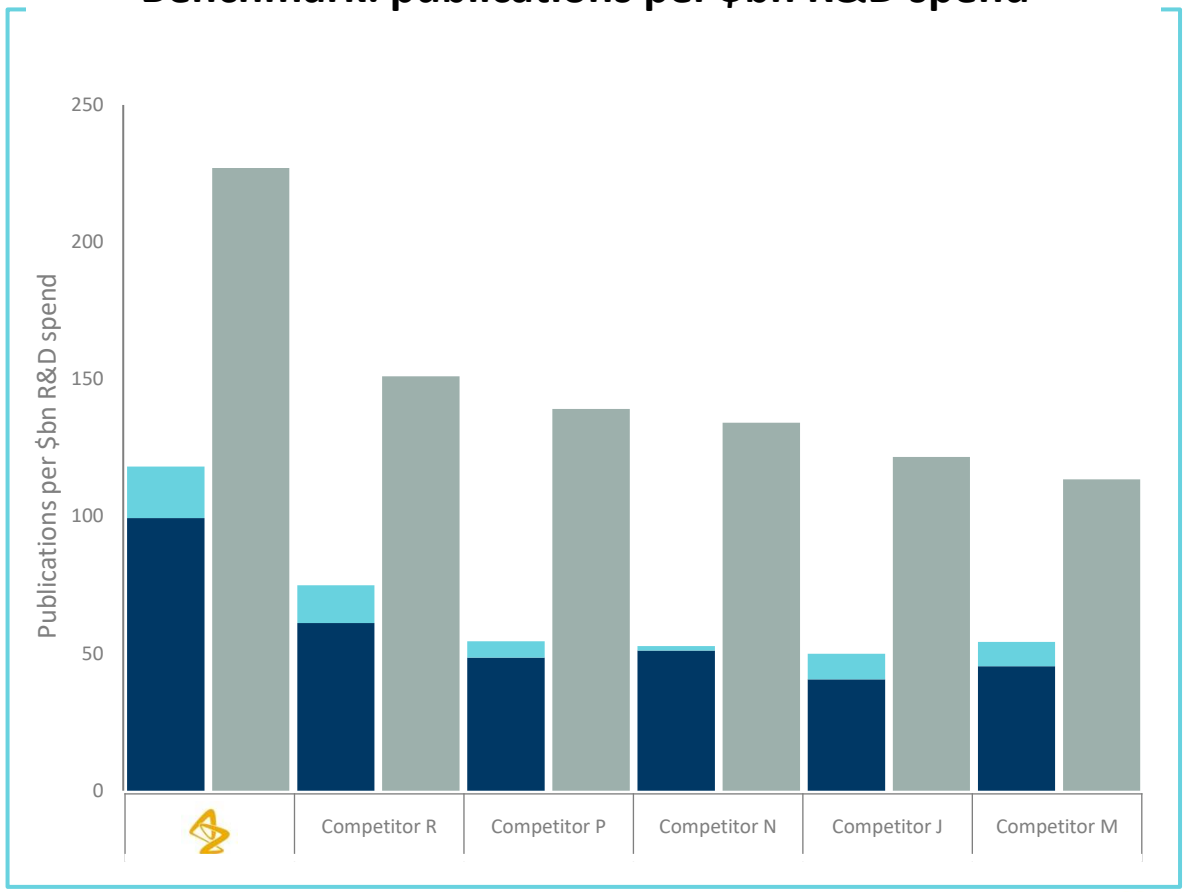
20

projects with regulatory designations in 2020

29

regulatory approvals in 2020

Benchmark: publications per $bn R&D spend[2]

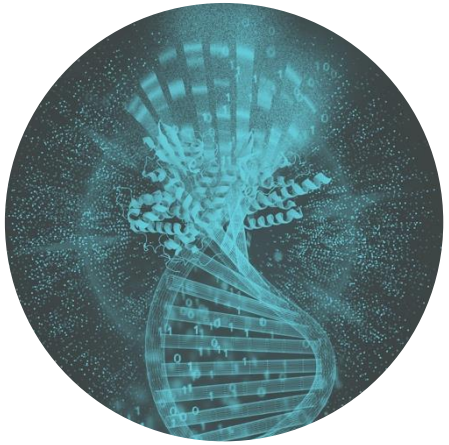


High impact publications **High quality publications[2]** Total publications

1. High-impact peer-reviewed journals are those with an impact factor (IF) exceeding 15 using Thomson Reuters (TR) five year IF score.

2. TR five year IF. 3. High-quality peer-reviewed journals with IF ≥5 <15 using TR five year IF score. Contains exception list considered by AstraZeneca as high quality but has IF <5. Source: Scopus retrieval (algorithm includes journal publications up to Phase III), AstraZeneca analysis.

Focus areas to further improve productivity



Enhancing disease understanding

Broadening therapeutic platforms

Predicting clinical outcomes

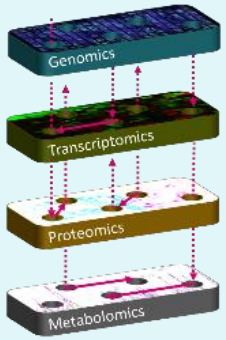
Pioneering new approaches in the clinic

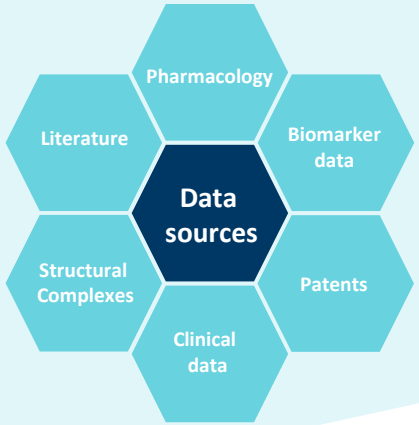
Data science and artificial intelligence (AI)

Identifying new targets through AI-enabled big data

Data collection | Identify top candidates | In vitro screening | In vivo validation | Selection of top candidates

Multiomics



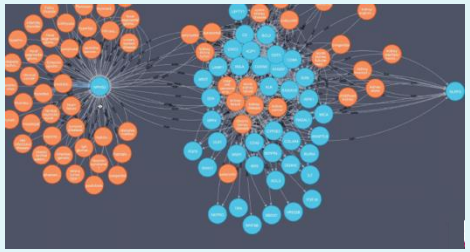


biobank[uk]

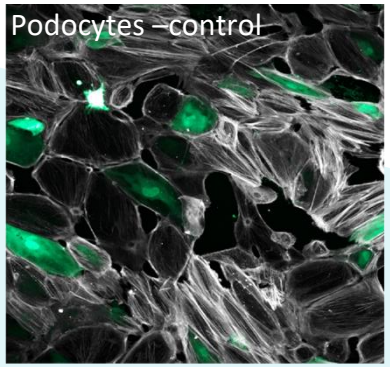
FINNGEN

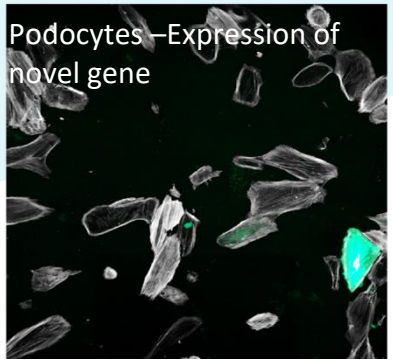
COLUMBIA UNIVERSITY

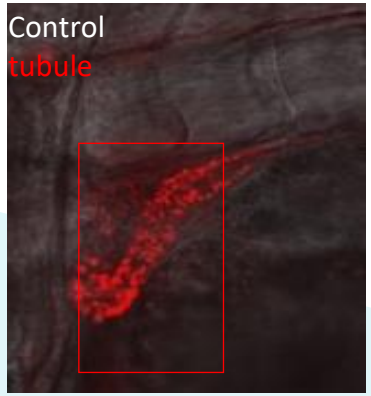
AI and knowledge graphs



BenevolentAI





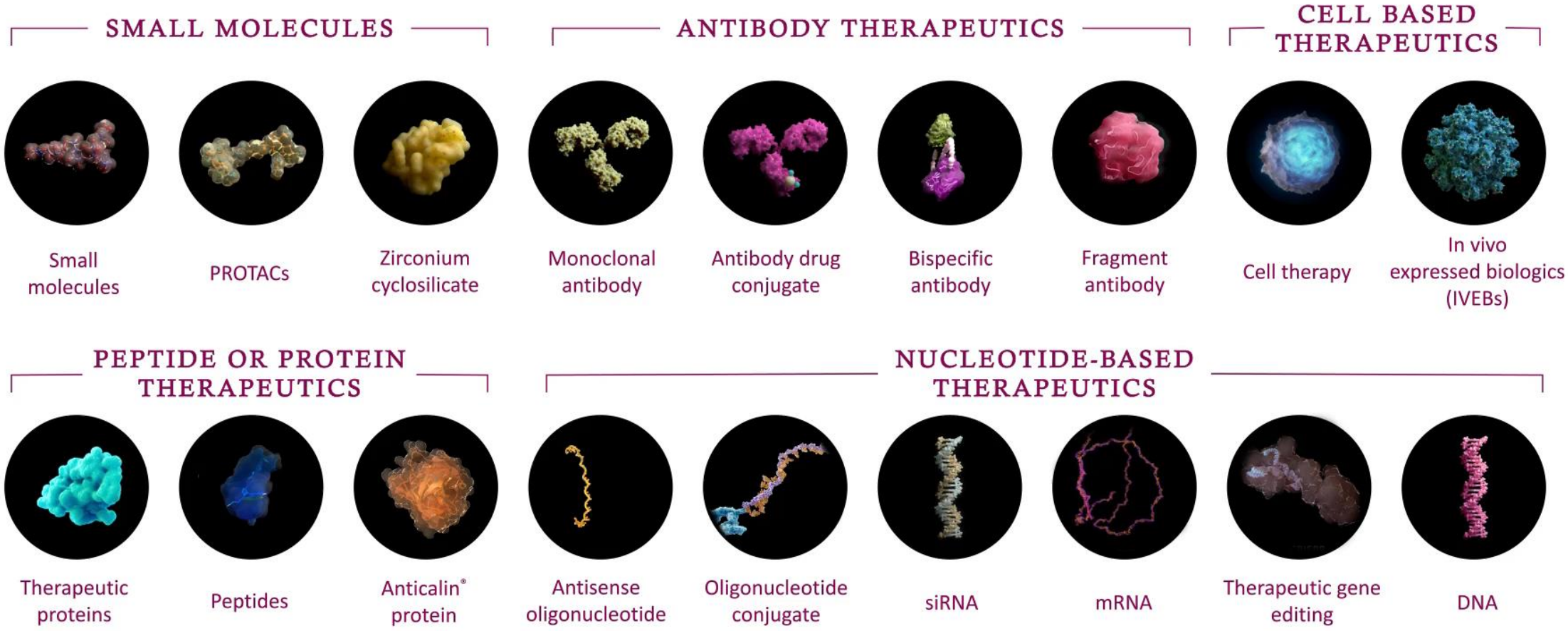


Four

novel pipeline medicines identified and validated in less than two years

Source: Groopman et al. *NEJM* (2019); Povysil et al. *JAMA* (2020); Kumar et. al. American Society of Nephrology Congress October (2020).

A broad set of therapeutic platforms to target any biology



PROTACs = proteolysis targeting chimeras, siRNA = small interfering RNA, mRNA = messenger RNA, RNA = ribonucleic acid, DNA = deoxyribonucleic acid.

Novel PROTAC chemistry advances project portfolio

Current status

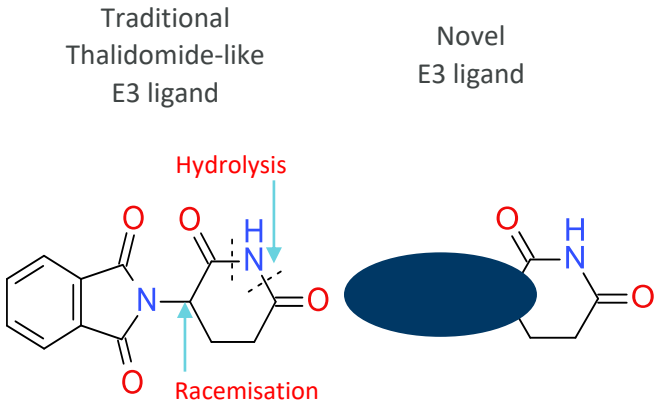
16
PROTAC projects

Five
Projects with in vivo efficacy

Five
E3 ligases enabled for project application

Three
Projects in lead optimisation

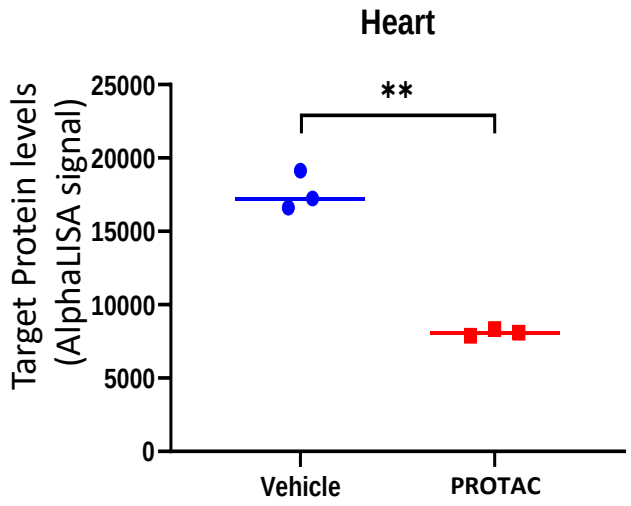
Novel E3 ligand with reduced safety risk



Potency	260 nM	161 nM
Stability	$T_{1/2}$ <30 min	$T_{1/2}$ >200 h
Racemisation	Yes	No
Teratogenic	Yes	No

Patent applications filed in 2020

In vivo activity of PROTACS for a cardiovascular target



**significance in Welch test (p 0.005).

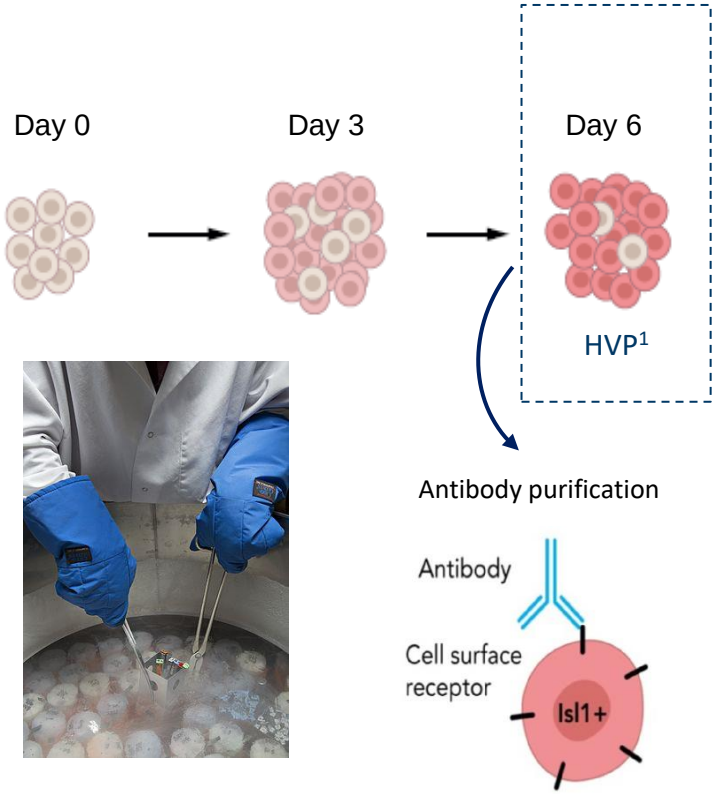
Source: Pike et al. *Drug Discov. Today* (2020); Edmondson et al. *BioOrg. Med. Chem. Lett*. (2019).

Source: US63/085384 & US63/085376.

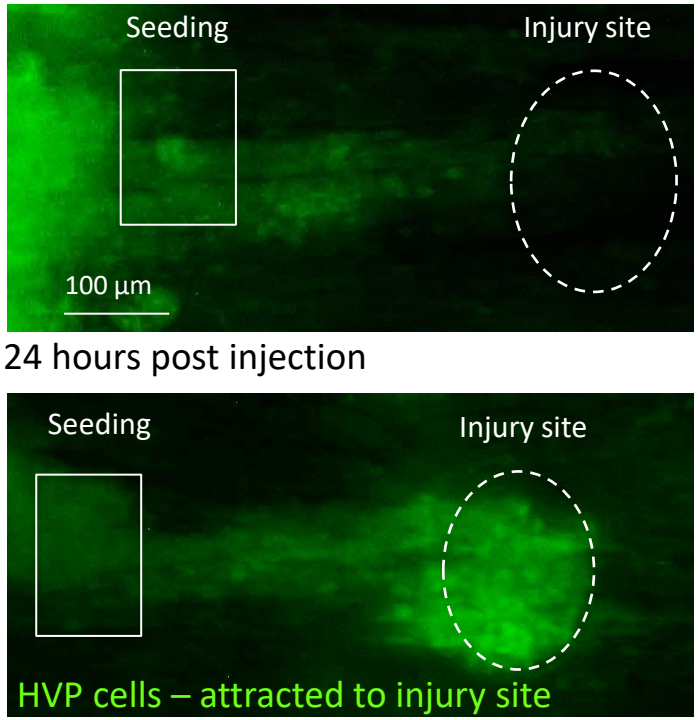
Source: AstraZeneca data on file.

Cell therapy approaches focused on regeneration ongoing across all therapy areas

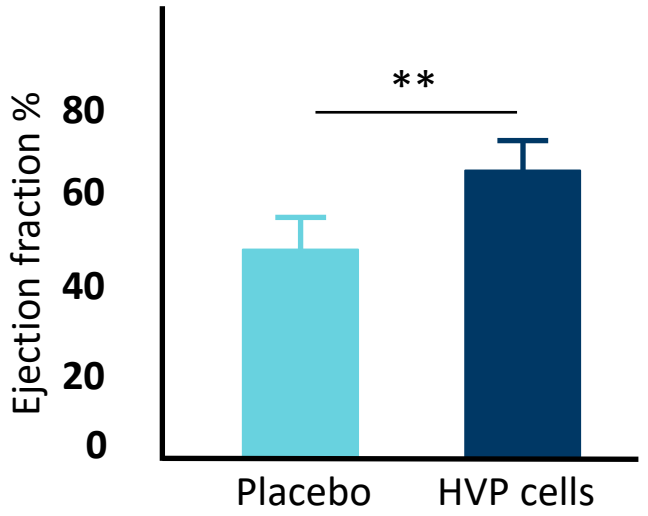
Heart stem cells formed from embryonic stem cells in six days



HVP cells migrate to injury site after injection in damaged NHP[2] heart



Increased ejection fraction in infarcted mice at two months



**p < 0.01.

1. Human ventricular progenitor cells.

2. Non-human primate.
Source: Karl-Ludwig Laugwitz / Kenneth R.Chien.

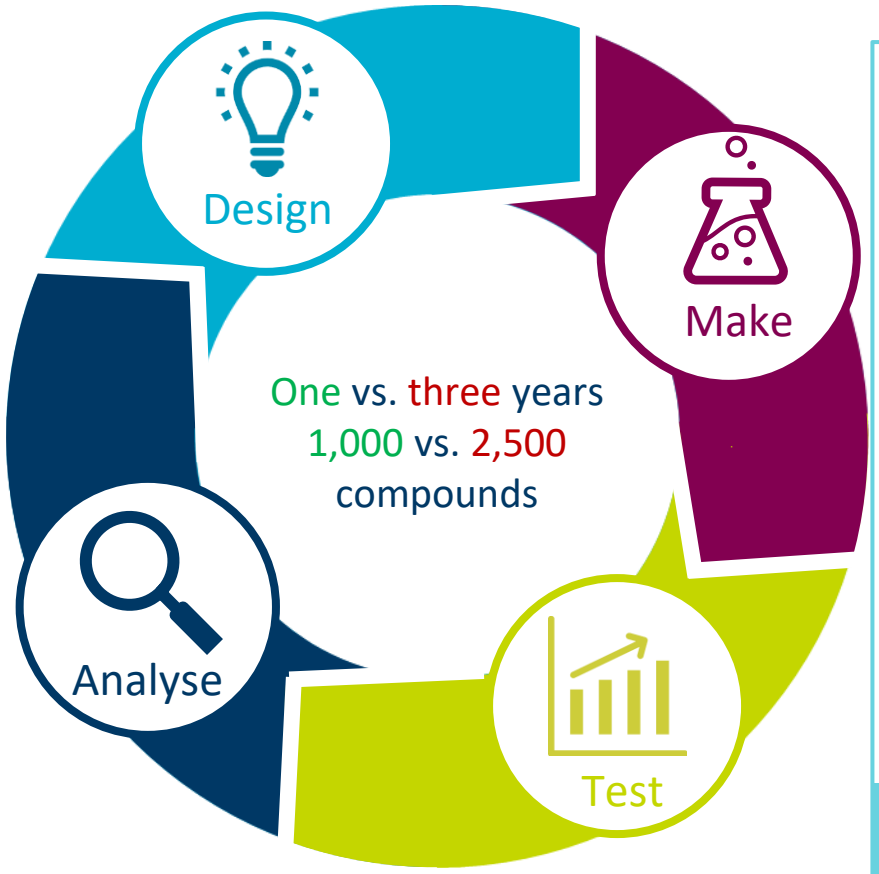
Source: AstraZeneca data on file.

AI-led small molecule discovery is driving 70% efficacy

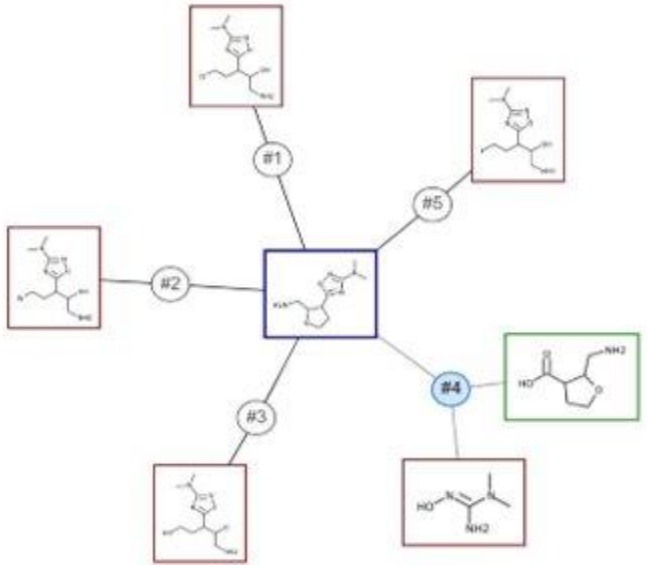
50% of small molecule projects are applying AI approaches

In-house
REINVENT platform

Creation, selection and testing of >10^{60} molecules in silico



In-house
AiZynth platform

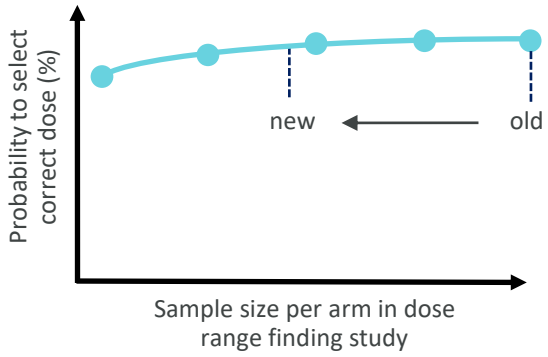


Chemical reaction prediction to define optimal synthetic route

Source: Kotsias et al. *Nature Machine Intelligence* (2020); Blaschke et al. *J.Chem.Inf.Model.* (2020); Segler et al. *ACS Cent Sci* (2018); Olivecrona et al. J. *Cheminformatics* (2017).

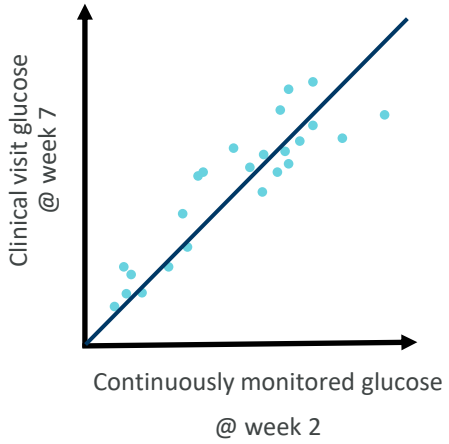
Predictive science continues to improve our clinical trial performance

Quantitative modelling



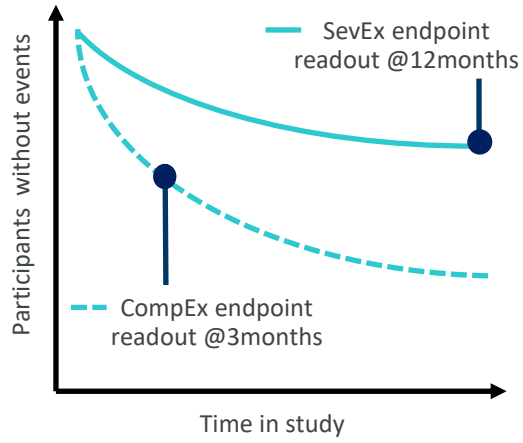
Quantitative modelling can reduce study size, without impacting probability of success

Continuous monitoring



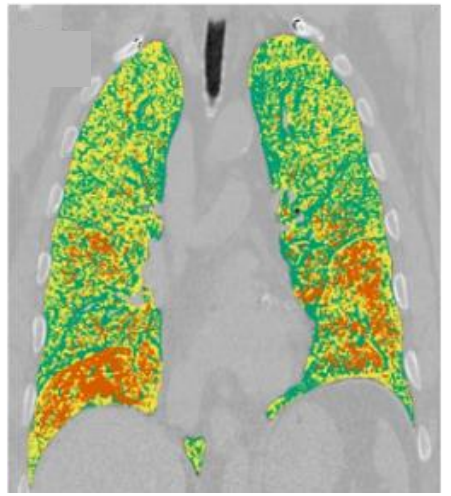
Continuous monitoring can shorten trials and predict earlier success

Novel CompEx[1] endpoints



Novel endpoints can predict and accelerate efficacy readouts

Advanced imaging



COPD[2] with small airway disease

Advanced imaging can help elucidate potential for disease modification

1. Composite exacerbation.

2. Chronic obstructive pulmonary disease.

Accelerating clinical efficiency through digital innovation

DAPA-MI[1] is world's first indication-seeking registry-based randomised controlled outcomes trial

Evaluating *Farxiga* for prevention of heart failure and CV[2] death following an acute MI

6,400 patients in only two countries rather than c.25

R

***Farxiga* 10mg once daily on top of SoC[3]**

Placebo once daily on top of SoC

Accelerating and expanding patient recruitment

SWEDEHEART

MINAP Myocardial Ischaemia National Audit Project

Use of registries drives broader patient access, routine clinical follow up and aims to reduce recruitment times by a third

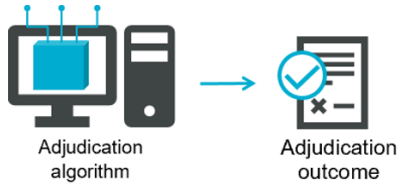
Reducing patient and investigator burden

60% reduction in patient burden index compared to DAPA-HF[4] by using routinely collected clinical data from the registries

Patient app for information sharing and data collection

Health and trial information, patient reported outcomes and medication use

AI event adjudication



Detection and self-report of events

Goal for adjudication in four minutes rather than current four months will accelerate future trial close out

50% per patient cost reduction without impacting timelines

1. Myocardial infarction 2. Cardiovascular.

3. Standard of care 4. Heart failure.

Overall BioPharmaceuticals pipeline

Innovation to fuel sustainable growth

Phase I	Phase II			Phase III		Under Review
AZD0284 RORg[1] psoriasis	anifrolumab Type I IFN[13] receptor LN[14]	cotadutide GLP-1[31]/glucagon T2D[32]	MEDI6012 LCAT[39] CV	AZD7442 LAAB[51] combination COVID-19	*Fasenra* NATRON IL5R HES[59]	anifrolumab TULIP Type I IFN receptor SLE
AZD0449 Inhaled JAK[2] inhibitor asthma	anifrolumab Type I IFN receptor SLE[15] SC[16]	cotadutide GLP-1/glucagon obesity	MEDI6570 LOX-1[40] CV disease	brazikumab¶ IL23 Crohn's disease	*Fasenra* OSTRO, ORCHID IL5R nasal polyps	*Farxiga* DAPA-CKD SGLT2 CKD
AZD2373 Podocyte health nephropathy	AZD1402# inhaled IL4Ra[17] asthma	cotadutide GLP-1/glucagon NASH	MEDI7352 NGF[41]/TNF[42] OA pain	*Breztri* KALOS LABA[52]/LAMA[53]/ICS[54] asthma	*Fasenra* RESOLUTE IL5R COPD	
AZD2693 NASH[3]	AZD4831 MPO[18] HFpEF[19]	cotadutide GLP-1/glucagon DKD[33]	MEDI7352 NGF/TNF PDN[43]	*Farxiga* DAPA-MI SGLT2 prevention of heart failure and CV death following an MI[55]	nirsevimab# mAb-YTE[60] passive RSV[61] immunisation	
AZD3366 CD39L3[4] CV[5] disease	AZD5718 FLAP[20] CKD	*Fasenra* ARROYO IL5R[34] CSU[35]	navafenterol# MABA[44] COPD	*Farxiga* DELIVER SGLT2 HFpEF	PT027# ICS/SABA[62] asthma	
AZD3427 Relaxin ThP[6] CV disease	AZD5718 FLAP CAD[21]	*Fasenra* HILLIER IL5R AD[36]	roxadustat# HIF[45]-PHI[46] CIA[47]	*Fasenra* FJORD IL5R BP[56]	roxadustat# HIF-PHI anaemia MDS[63]	
AZD4041# orexin 1 receptor antagonist opioid use disorder	AZD7986# DPP1[22] COPD[23]	MEDI3506 IL33[37] DKD	suvratoxumab alpha-Toxin Staphylococcus pneumonia	*Fasenra* MANDARA IL5R EGPA[57]	tezepelumab# NAVIGATOR TSLP severe uncontrolled asthma	
AZD8154 Inhaled PI3Kgd[7] asthma	AZD8233 PCSK9[24] hypercholesterolemia	MEDI3506 IL33 AD	tezepelumab# TSLP[48] AD	*Fasenra* MESSINA IL5R EOE[58]		
MEDI0618# PAR2[8] antagonist mAb[9] OA[10]	AZD8601# VEGF-A[25] cardiovascular	MEDI3506 IL33 COPD	tezepelumab# TSLP COPD			
MEDI1341# alpha synuclein Parkinson's disease	AZD9567 SGRM[26] CID[27]	MEDI3506 IL33 asthma	verinurad URAT1[49] CKD / HFpEF			
MEDI1814# amyloid beta Alzheimer's disease	AZD9977+*Farxiga* MCR[28]+SGLT2[29] heart failure	MEDI3506 IL33 COVID-19[38]	Zibotentan+*Farxiga* ETA1[50]+SGLT2 CKD			
MEDI8367 avb8[11] CKD[12]	brazikumab IL23[30] ulcerative colitis	MEDI5884# cholesterol modulation CV				

Highlighted in breakout sessions

Other pipeline medicines

1. RAR-related orphan receptor gamma 2. Janus kinase inhibitor 3. Non-alcoholic steatohepatitis 4. Ectonucleoside triphosphate diphosphohydrolase-3 5. Cardiovascular 6. Human leukaemia monocytic cell line 7. Phosphoinositide 3-kinases gamma delta 8. Protease activated receptor 2 9. Monoclonal antibody 10. Osteoarthritic pain 11. alpha-v-beta-8 integrin 12. Chronic kidney disease 13. Interferon 14. Lupus nephritis 15. Systemic lupus erythematosus 16. Subcutaneous 17. Interleukin 4 receptor alpha 18. Myeloperoxidase 19. Heart failure with preserved ejection fraction 20. 5-lipoxygenase-activating protein 21. Coronary artery disease 22. Dipeptidyl peptidase 1 23. Chronic obstructive pulmonary disease 24. Proprotein convertase subtilisin kexin 9 25. Vascular endothelial growth factor A 26. Selective glucocorticoid receptor modulator 27. Chronic inflammatory diseases 28. Mineralocorticoid receptor 29. Sodium-glucose co-transporter-2 30. Interleukin 23 31. Glucagon-like peptide 1 32. Type-2 diabetes 33. Diabetic kidney disease 34. Interleukin 5 receptor 35. Chronic spontaneous urticaria 36. Atopic dermatitis 37. Interleukin 33 38. Coronavirus disease 2019 39. Lecithin–cholesterol acyltransferase 40. Lectin-type oxidised low-density lipoprotein receptor 1 41. Nerve growth factor 42. Tumour necrosis factor 43. Painful diabetic neuropathy 44. Muscarinic beta 2-agonist 45. Hypoxia-inducible factor 46. Prolyl hydroxylase inhibitor 47. Chemotherapy induced anaemia 48. Thymic stromal lymphopoietin 49. Urate transporter 1 50. Endothelin receptor A antagonist 1 51. Long-acting antibody 52. Long-acting beta agonist 53. Long-acting muscarinic antagonist 54. Inhaled corticosteroid 55. Myocardial infarction 56. Bullous pemphigoid 57. Eosinophilic granulomatosis with polyangiitis 58. Eosinophilic esophagitis 59. Triple modification, M252Y/S254T/T256E, of the fragment crystallisable region of an IgG antibody which extends its half life - Robbie, G.J., et al. *Antimicrob Agents Chemother*, 2013. 57(12): p. 6147-53 61. Respiratory syncytial virus 62. Short acting beta agonist 63. Myelodysplastic syndrome # Medicine developed in collaboration ¶ Registrational Phase II/III trial.

Agenda

BioPharmaceuticals Business Unit

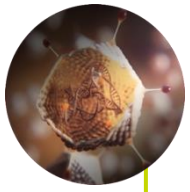
BioPharmaceuticals R&D

COVID-19

Q&A

COVID-19 treatment and prevention approaches

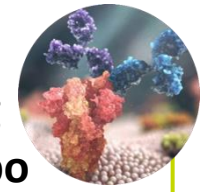
Advancing vaccine, antibody, other options



COVID-19 Vaccine AstraZeneca (*C19VAZ*)

- UK emergency use authorisation; EU conditional marketing authorisation
- Real world data from UK rollout showing >80% protection against hospitalisation
- US Phase III met the primary endpoint

Granted conditional approval or emergency use in >70 countries



AZD7442 long-acting antibody (LAAB) combo

- Potential to offer immediate protection
- Late-stage trials in both prophylaxis and treatment
- US Government agreements for potential supply of 700,000 doses in 2021

First data in H1 2021

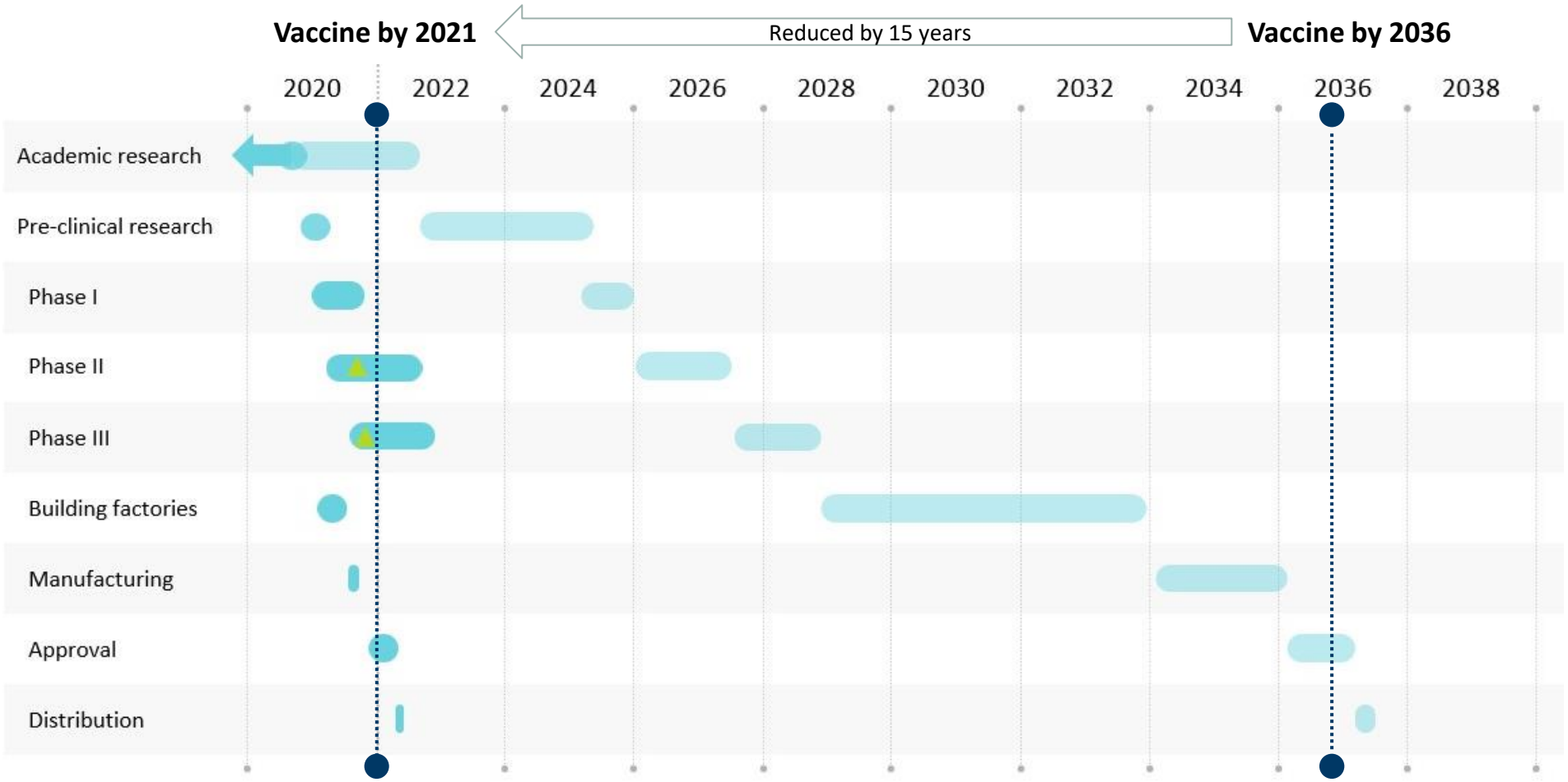
Other COVID efforts continue

- ***Farxiga***
  DARE-19 Phase III trial
- **MEDI3506**
  ACCORD Phase II trial
- ***Symbicort***
  INHASCO Phase IIIa trial
- ***Pulmicort***
  TACTIC-COVID Phase IIIa trial
  STOIC Phase II trial positive

First data in H1 2021

Vaccine development typically takes a decade or longer

C19VAZ: an unprecedented acceleration



▲ Interim analysis

Source: adapted from Plotkin´s Vaccines (7th edition).

COVID-19 Vaccine AstraZeneca

Shown to be safe and effective in clinical trials and real-world data

Protection from hospitalisation and severe disease

First dose protection

Increased efficacy with a longer dosing interval

US Phase III trial primary analysis

100%
efficacy against severe disease, hospitalisation and death

76%
efficacy from day ≥15 after second dose in all adult age groups

85%
efficacy from day 15 after first dose in adults 65 years and over

Real world effectiveness

94%
effective against hospitalisation in enriched elderly population[1]

80%
effective against hospitalisation in ≥80 years with extensive comorbid disease[2]

73%
effective from day 35 after first dose in older adults (≥70 years)[3]

1. Vasileiou E et al. Preprint published online. *The Lancet*. 2021 2. Bernal JL et al. Preprint published online. *The Lancet*. 2021 3. Hyams C et al. Preprint published online. *The Lancet*. 2021.

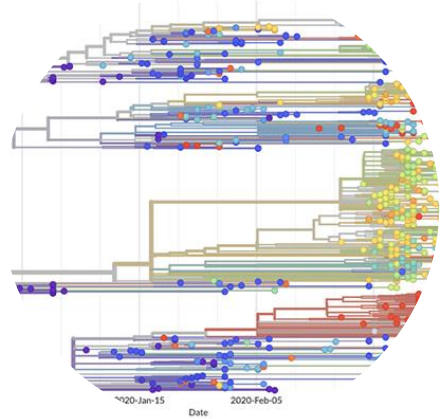
Clinical priorities

Establishing optimal dosing regimen

Different populations

- Older adults ✓
- Paediatrics - started
- Pregnant women

Heterologous boosting



New variants

AZD7442 long-acting antibody (LAAB) combination

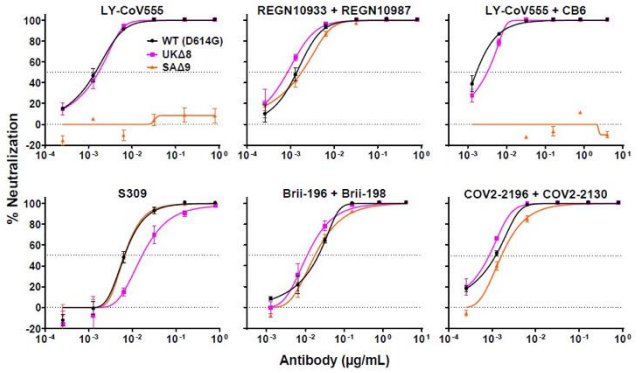
COVID-19 unmet needs persist even during a successful vaccine rollout

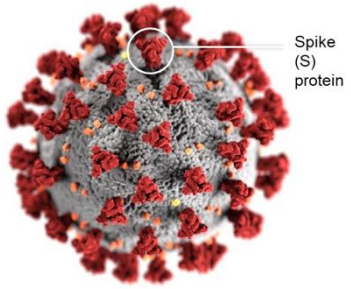
AZD7442

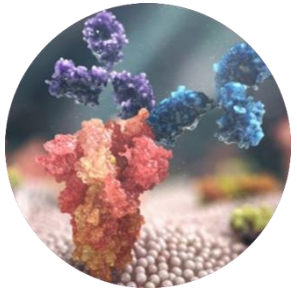
- Extended half-life using YTE[1]
- Intra-muscular administration
- Potent and synergistic combination
- >2% of population immune suppressed[2]

2021 capacity of 1-2m doses

Neutralisation profiles of therapeutic mAbs[3,4]







Phase III trials

- PROVENT and STORMCHASER Phase III trial in pre- and post-exposure prophylaxis; 300mg IM[5] dose; potential for 12 months protection
- TACKLE Phase III trial of 600mg IM in outpatient setting and collaborator trials

First data H1 2021

1. Triple modification, M252Y/S254T/T256E, of the fragment crystallisable region of an IgG antibody which extends half life - Robbie, G.J., et al. *Antimicrob Agents Chemother*, 2013. 57(12): p. 6147-53 2. Harpaz, R., et al *JAMA*. 2016;316(23):2547-2548.

3. Monoclonal antibody 4. Increased Resistance of SARS-CoV-2 Variants B.1.351 and B.1.1.7 to Antibody Neutralization, David D. Ho et al. bioRxiv 2021.01.25.428137.

5. Intra-muscular.

Agenda

BioPharmaceuticals Business Unit

BioPharmaceuticals R&D

COVID-19

Q&A

Questions & Answers

<u>To ask a question</u>
Webinar
Click ’Raise Hand’ (preferred):

or type your question into the Q&A box (alternative)

Phone
*6 - Toggle mute/unmute
*9 - Raise hand

Meet AZN management: BioPharmaceuticals

Four Q&A-focused, virtual breakout sessions

Opening session and Q&A
14:30-15:20 GMT

Mene Pangalos, Ruud Dobber

https://astrazeneca.zoom.us/webinar/register/WN_bGgqh6nRS120V4JAbnFLvQ
Webinar ID: 96770774469 | IR moderator: nick.stone@astrazeneca.com

New CVRM: emerging pipeline

Session 1: 15:30 GMT
Session 2: 16:15 GMT

Regina Fritsche Danielson, Tomas Andersson, Lori Kreamer

https://astrazeneca.zoom.us/webinar/register/WN_geSO9qdvR1GP_ysnR79e8A

Webinar ID: 92950815561
IR moderator:
christer.gruvris@astrazeneca.com

New CVRM: near-term opportunities

Session 1: 15:30 GMT
Session 2: 16:15 GMT

Elisabeth Björk, John Houghton, Joris Silon

https://astrazeneca.zoom.us/webinar/register/WN__3rpTdMKRnCkrhf2_ksHYA

Webinar ID: 95741428905
IR moderator:
nick.stone@astrazeneca.com

Respiratory & Immunology: emerging pipeline

Session 1: 15:30 GMT
Session 2: 16:15 GMT

Maria Belvisi, Ben Fenby, Iain Chessell

https://astrazeneca.zoom.us/webinar/register/WN_mahGJExaRViDh7sxJ6zIow

Webinar ID: 95277051413
IR moderator:
tom.waldron@astrazeneca.com

Respiratory & Immunology: near-term opportunities

Session 1: 15:30 GMT
Session 2: 16:15 GMT

Richard Marshall, Pablo Panella, Gerard O'Malley, Micki Hultquist

https://astrazeneca.zoom.us/webinar/register/WN_WkP2l8waRWiCoa9ROqIkUQ

Webinar ID: 95741428905
IR moderator:
josie.afolabi@astrazeneca.com

If you cannot connect using Zoom Webinar on a computer or device, please use the following phone details:
+441314601196 | +46844682488 | +16699006833, including the appropriate Webinar ID

Event closes c.17:00 GMT

Use of AstraZeneca conference call, webcast and presentation slides