Annual Meeting 2019

Next generation antibody therapeutics and the evolving innovation ecosystem

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medicon valley alliance

Creating Opportunities

Next Generation Antibody Therapeutics & the Evolving Innovation Ecosystem

2019 Annual Meeting Medicon Valley Alliance

Jan van de Winkel

November 4, 2019

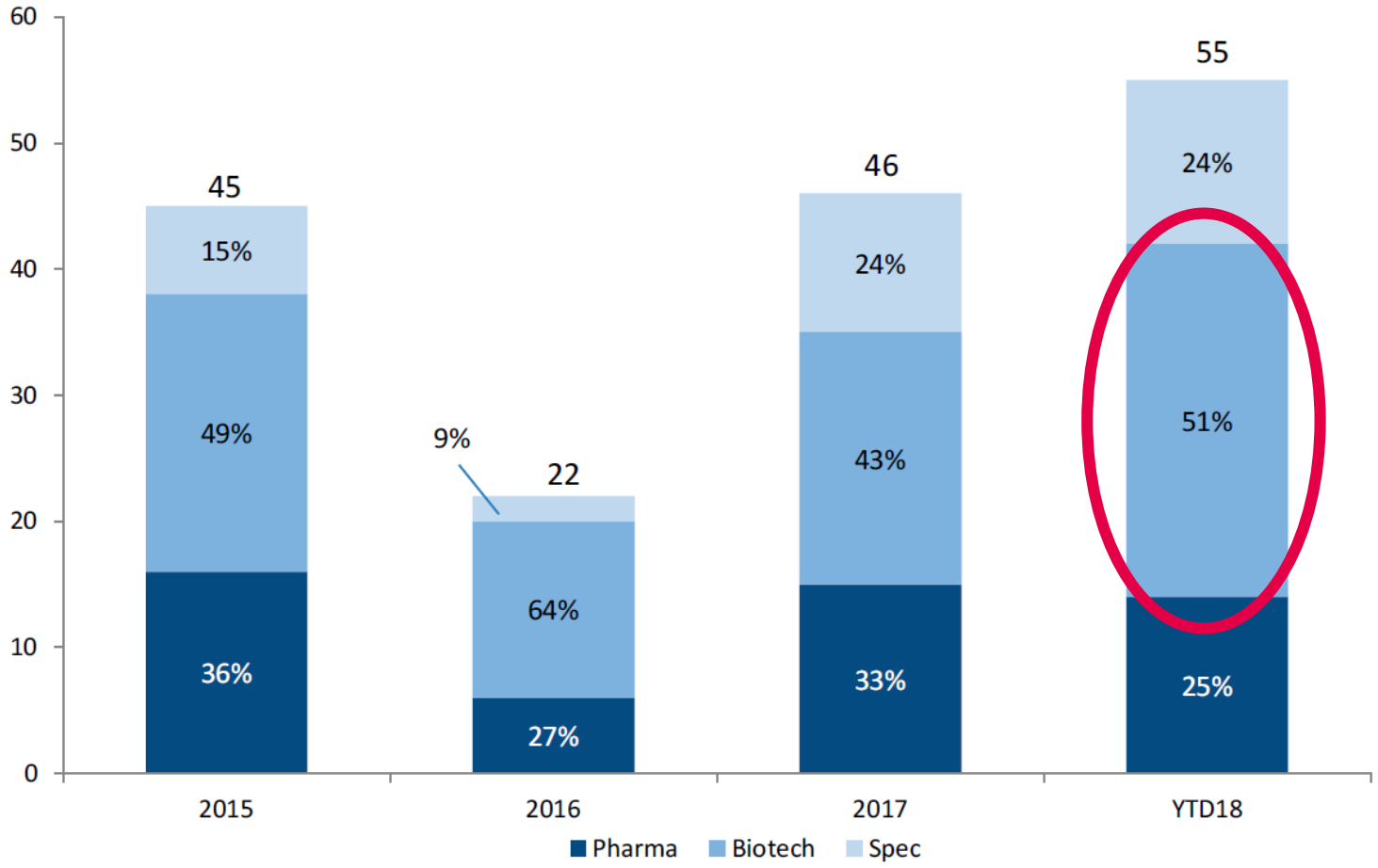
Genmab

Forward Looking Statement

This presentation contains forward looking statements. The words “believe”, “expect”, “anticipate”, “intend” and “plan” and similar expressions identify forward looking statements. All statements other than statements of historical facts included in this presentation, including, without limitation, those regarding our financial position, business strategy, plans and objectives of management for future operations (including development plans and objectives relating to our products), are forward looking statements. Such forward looking statements involve known and unknown risks, uncertainties and other factors which may cause our actual results, performance or achievements to be materially different from any future results, performance or achievements expressed or implied by such forward looking statements. Such forward looking statements are based on numerous assumptions regarding our present and future business strategies and the environment in which we will operate in the future. The important factors that could cause our actual results, performance or achievements to differ materially from those in the forward looking statements include, among others, risks associated with product discovery and development, uncertainties related to the outcome of clinical trials, slower than expected rates of patient recruitment, unforeseen safety issues resulting from the administration of our products in patients, uncertainties related to product manufacturing, the lack of market acceptance of our products, our inability to manage growth, the competitive environment in relation to our business area and markets, our inability to attract and retain suitably qualified personnel, the unenforceability or lack of protection of our patents and proprietary rights, our relationships with affiliated entities, changes and developments in technology which may render our products obsolete, and other factors. Further, certain forward looking statements are based upon assumptions of future events which may not prove to be accurate. The forward looking statements in this document speak only as at the date of this presentation. Genmab does not undertake any obligation to update or revise forward looking statements in this presentation nor to confirm such statements to reflect subsequent events or circumstances after the date made or in relation to actual results, unless required by law.

Biotech - Innovation Engine for the Pharma Industry

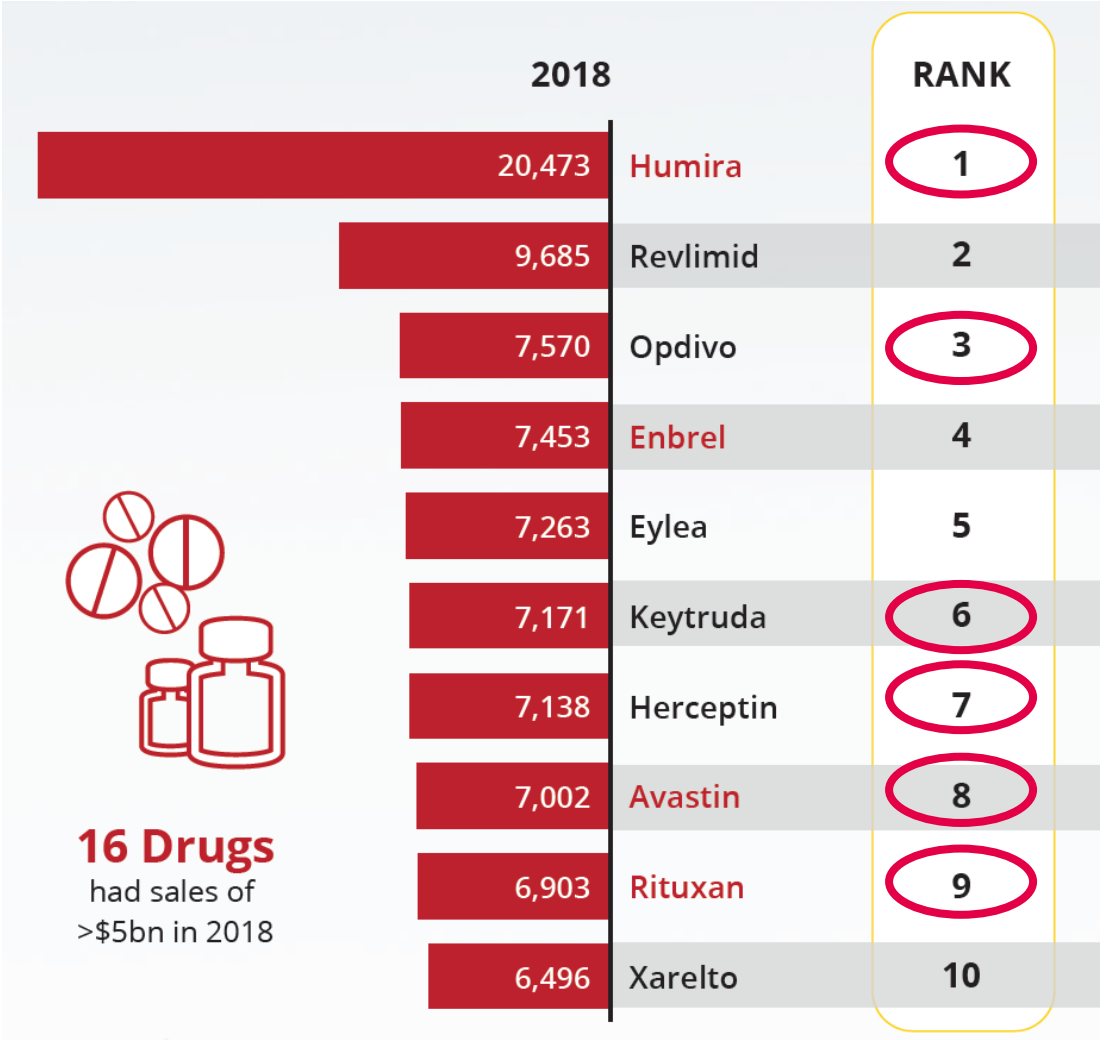
FDA Approvals ‘15-’18 Show Biotech’s Growing Share of Therapeutic Innovation



Goldman Sachs report, Europe Healthcare: Biotechnology, 2018

Antibodies Lead Biologics

Top 10 Drugs in 2018



Scrip, Aug 2019

Building a Business that Transforms Cancer Treatment

Our Core Purpose, Strategy & Vision

Core Purpose

- To improve the lives of patients by creating & developing innovative antibody products

Our Strategy

- Turn science into medicine
- Build a profitable & successful biotech
- Focus on Core Competence

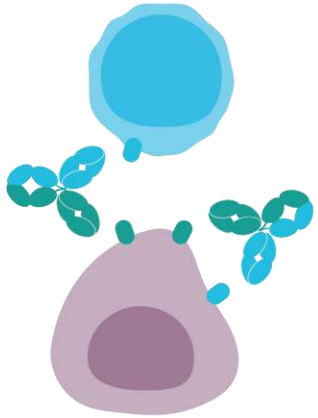
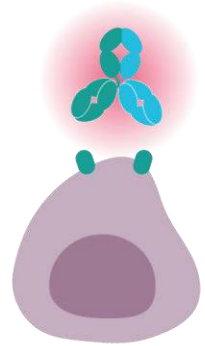
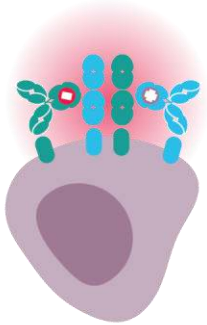
Vision

- By 2025, our own product has transformed cancer treatment and we have a pipeline of knock-your-socks off antibodies

Genmab R&D Center – Utrecht Science Park

Antibody Product Development

Naked Human Antibodies

Naked IgG	ADC	Bispecific IgG	Enhanced IgG	Enhanced bispecific IgG	Selective Enhanced IgG
HuMAb-Mouse®	Drug/linker inlicensing	DuoBody®	HexaBody®	DuoHexaBody®	HexElect®
					
Ofatumumab Daratumumab	Tisotumab vedotin Enapotamab vedotin	DuoBody-CD3xCD20 DuoBody-CD40x4-1BB DuoBody-PD-L1x4-1BB	HexaBody-DR5 / DR5	DuoHexaBody-CD37	HexElect X / Y / Z

- **Daratumumab**
  - Therapeutic human antibody targeting CD38
  - In development for treatment Multiple Myeloma, NKT-cell Lymphoma, Amyloidosis

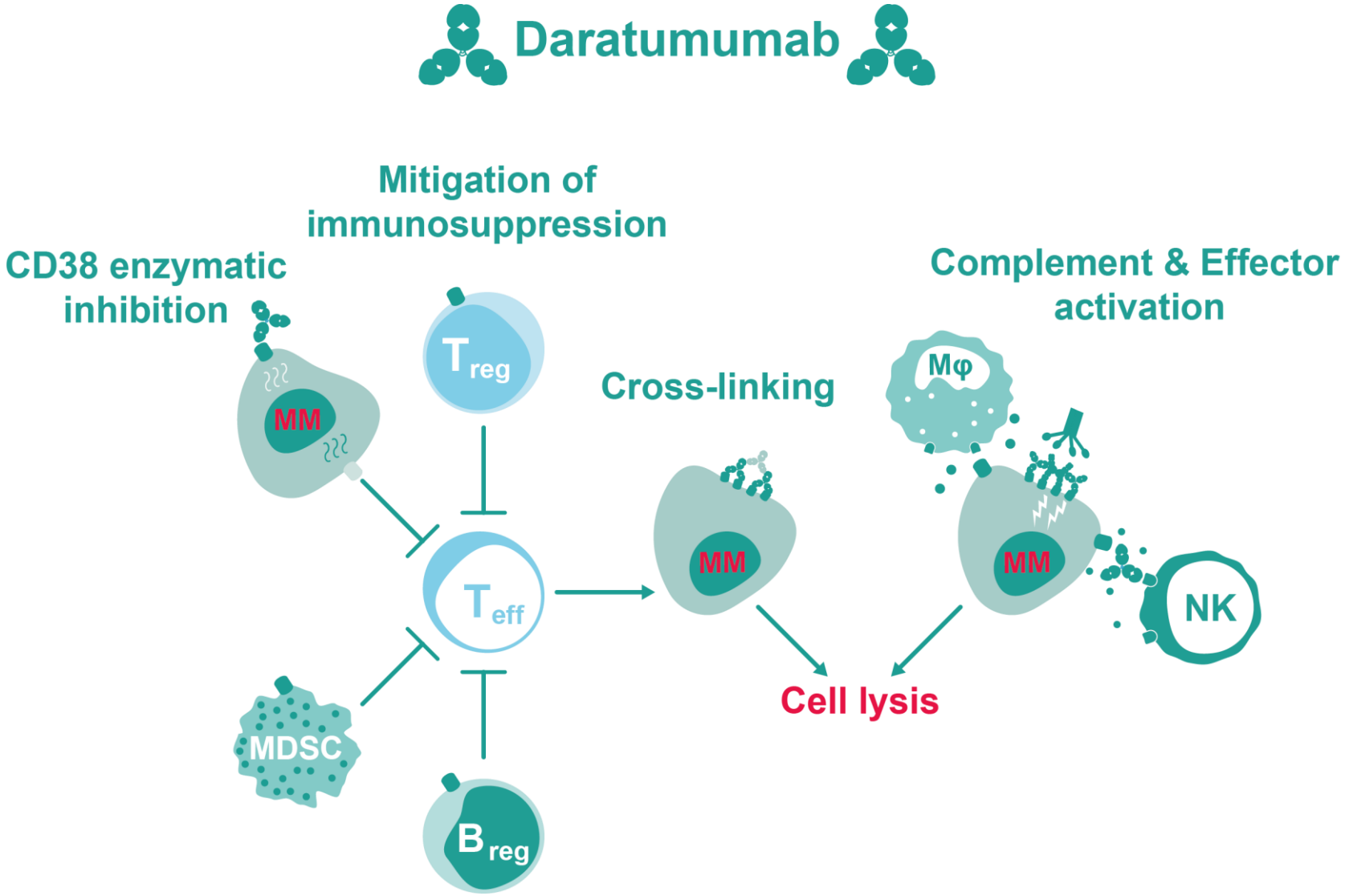
Daratumumab (Marketed as DARZALEX®)

Reshaping Treatment of Multiple Myeloma Across All Lines of Therapy

- Collaboration with Janssen Biotech
- First-in-class antibody targeting CD38
- Reshaping MM treatment in all lines of therapy: Combining with current Standard of Care & new entrants
- Unprecedented efficacy & consistent safety across Ph III studies
- Accelerating from Blockbuster to Mega Blockbuster

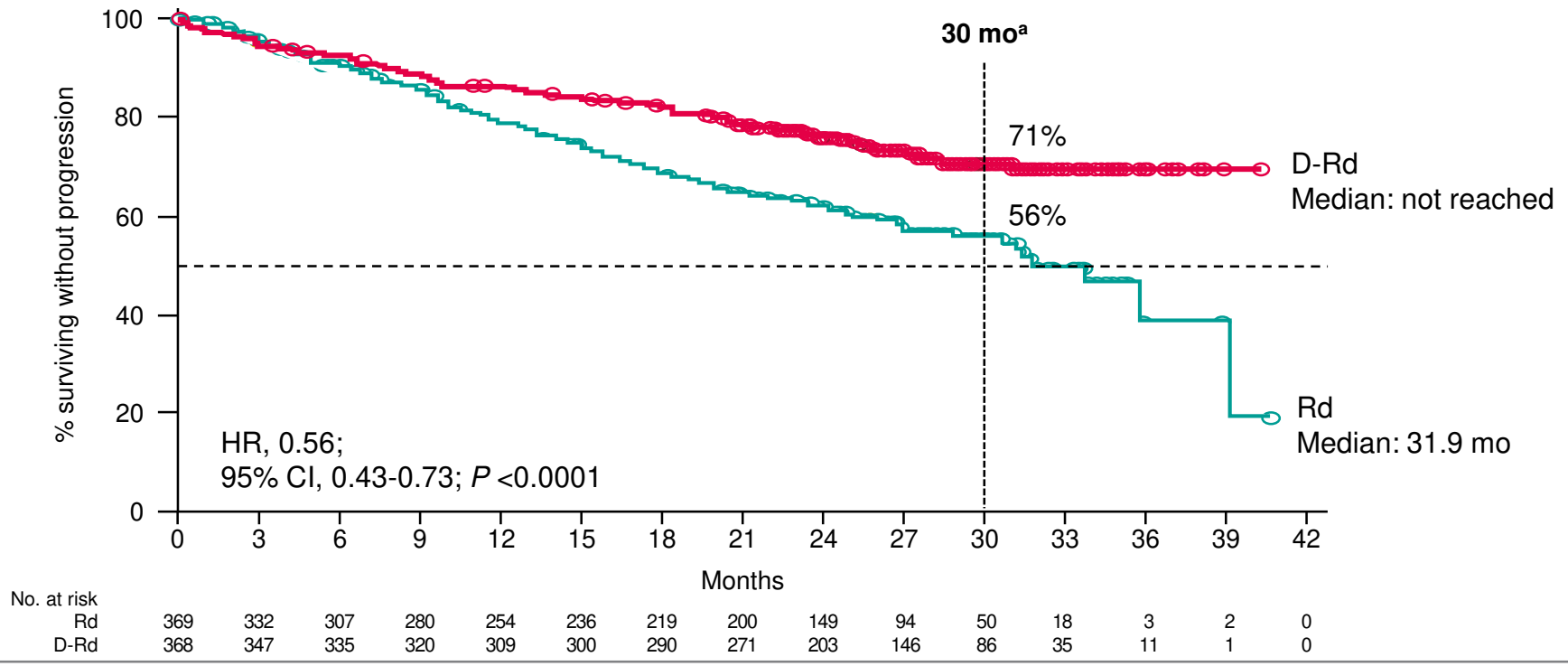
See local country prescribing information for approved indications

Daratumumab: Multiple Mechanisms of Action



Daratumumab Efficacy in Newly Diagnosed Multiple Myeloma

Phase III MAIA Trial (D+Rd): ASH Dec 2018



In D-Rd arm:

- 44% reduction risk of disease progression or death in patients receiving D-Rd
- Median PFS not reached
- **>3-fold higher MRD-negative rate**

D = daratumumab
R = lenalidomide
d = dexamethasone
PFS = progression free survival
MRD – minimal residual disease

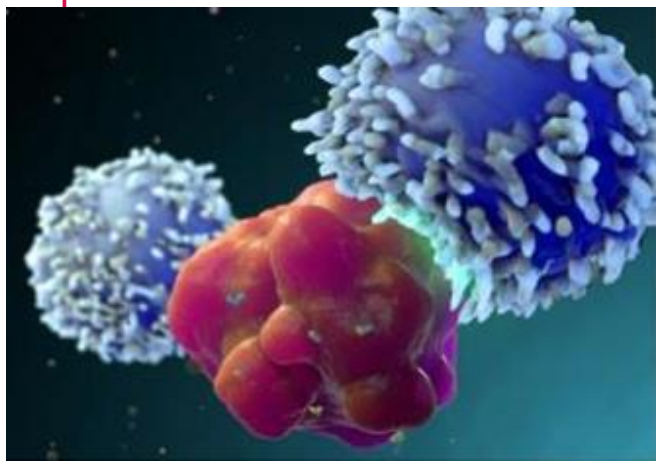
✓ **2019 – Filing & FDA Approval**

N Engl J Med 2019;380:2104-15

We Aim to Harness the Potency of the Immune System

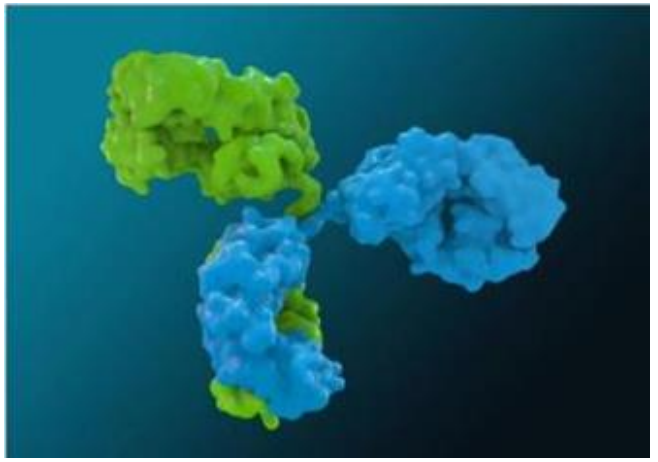
Basic Immunological Principles to Products & Technologies

The power of our immune system inspires us.



We are curious to understand basic immunological principles…

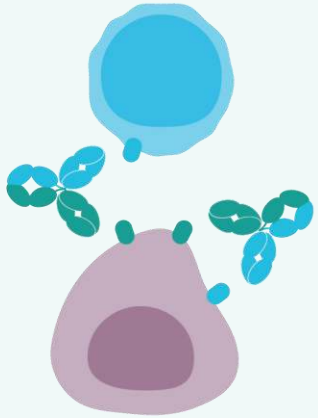
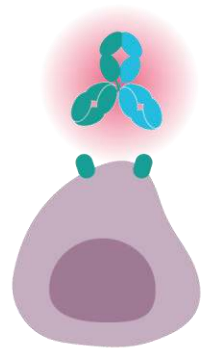
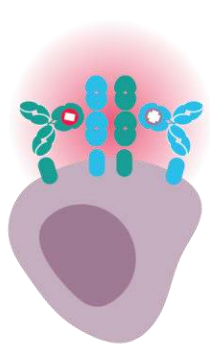
…and translate those to practical applications,



…innovative antibody products and technologies.

Antibody Product Development

Bispecific Antibodies

Naked IgG	ADC	Bispecific IgG	Enhanced IgG	Enhanced bispecific IgG	Selective Enhanced IgG
HuMAb-Mouse®	Drug/linker inlicensing	DuoBody®	HexaBody®	DuoHexaBody®	HexElect®
					
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DuoBody® technology

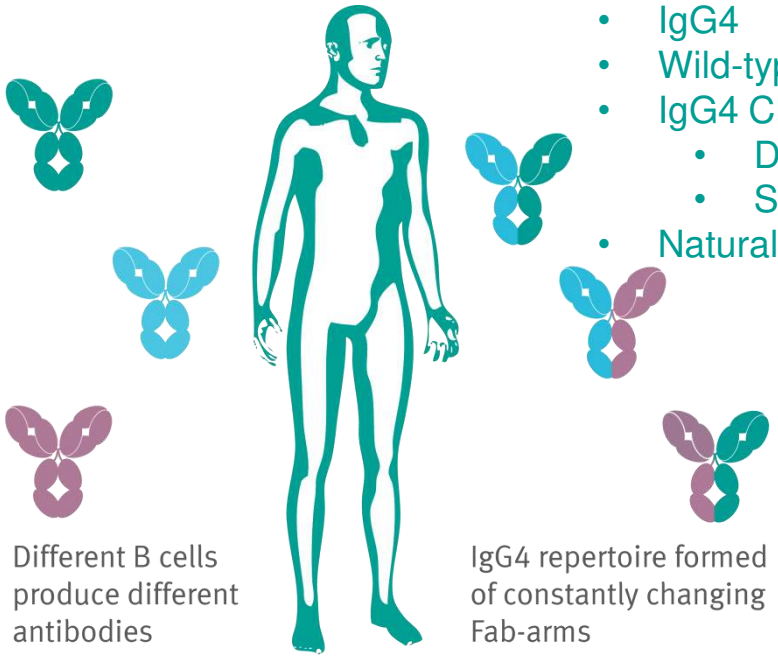
- Platform for creation of bispecific antibodies
- BsAb can engage two therapeutic targets

From Science to Bispecific Antibody Platform

Controlled Fab-arm Exchange

- Based on Fab-arm exchange, a naturally occurring process for generating bispecificity

Fab-arm exchange



- IgG4
- Wild-type IgG4 hinge (S228)
- IgG4 CH3 domain
  - Dynamic exchange
  - Stochastic process
- Natural process

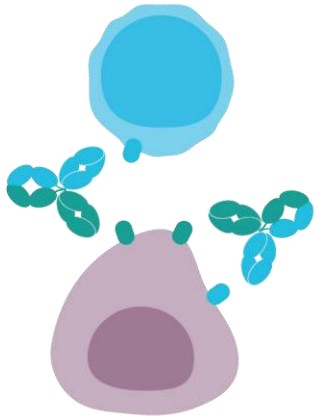
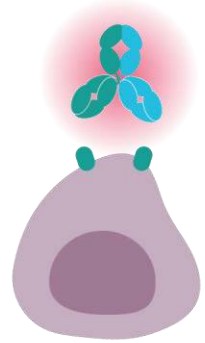
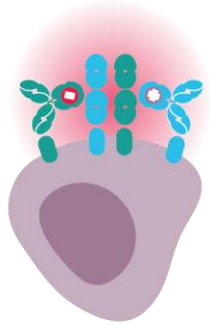
With modifications from D.R. Burton and I.A. Wilson, Science 2007: Vol. 317 no. 5844 pp. 1507-1508.

Controlled Fab-arm exchange

- IgG1
- Wild-type IgG1 hinge (P228)
- Matching CH3 mutations
  - Allow dissociation homodimers
  - Favor heterodimerization
- Bispecific antibody platform

Antibody Product Development

Enhanced Potency Antibody Technology

Naked IgG	ADC	Bispecific IgG	Enhanced IgG	Enhanced bispecific IgG	Selective Enhanced IgG
HuMAb-Mouse®	Drug/linker inlicensing	DuoBody®	HexaBody®	DuoHexaBody®	HexElect®
					
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HexaBody® technology

- Enables antibodies to readily form clusters of 6 (hexamers)
- Induces & enhances target cell killing

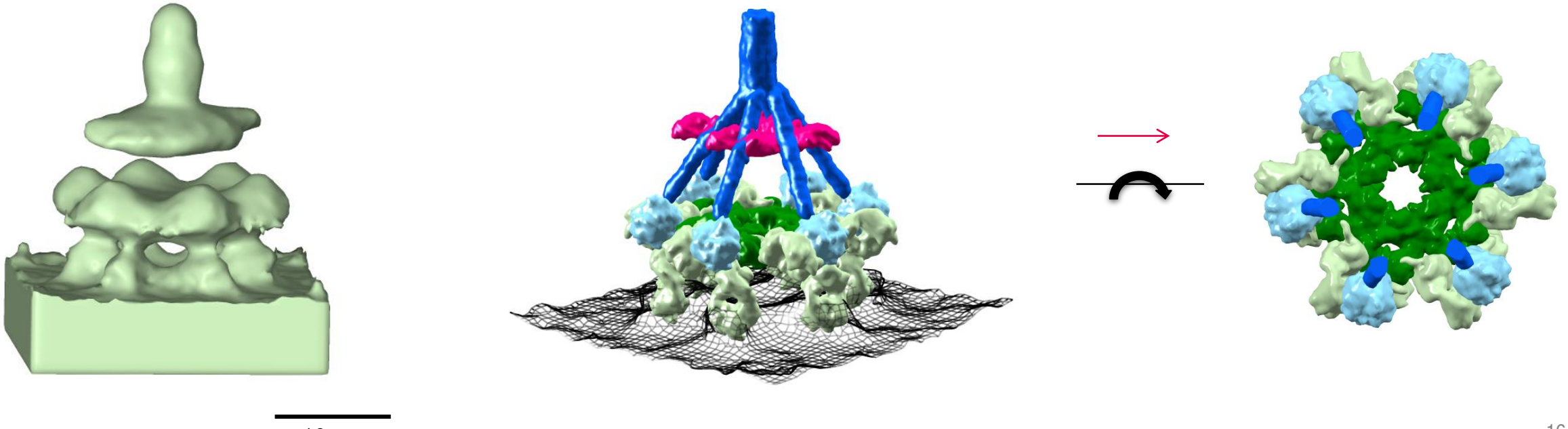
IgG1 Hexamerization by Intermolecular Fc:Fc Interactions Critical for C1q Binding and Complement Activation

REPORTS

Complement Is Activated by IgG Hexamers Assembled at the Cell Surface

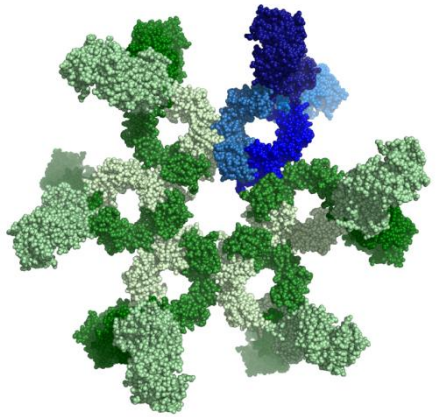
14 MARCH 2014 VOL 343 SCIENCE www.sciencemag.org

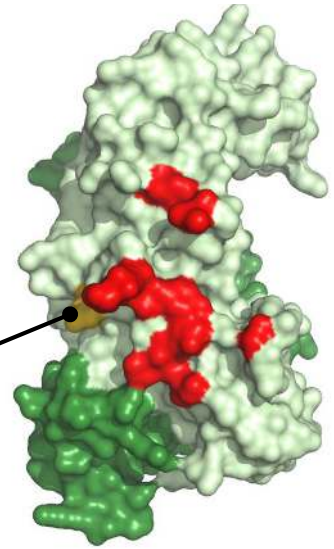
Christoph A. Diebolder,[1,2]* Frank J. Beurskens,[3]* Rob N. de Jong,[3] Roman I. Koning,[2] Kristin Strumane,[3] Margaret A. Lindorfer,[4] Marleen Voorhorst,[3] Deniz Ugurlar,[1] Sara Rosati,[5] Albert J. R. Heck,[5] Jan G. J. van de Winkel,[3,6] Ian A. Wilson,[7,8] Abraham J. Koster,[2] Ronald P. Taylor,[4] Erica Ollmann Saphire,[9] Dennis R. Burton,[8,9,10] Janine Schuurman,[3] Piet Gros,[1]† Paul W. H. I. Parren[3]†



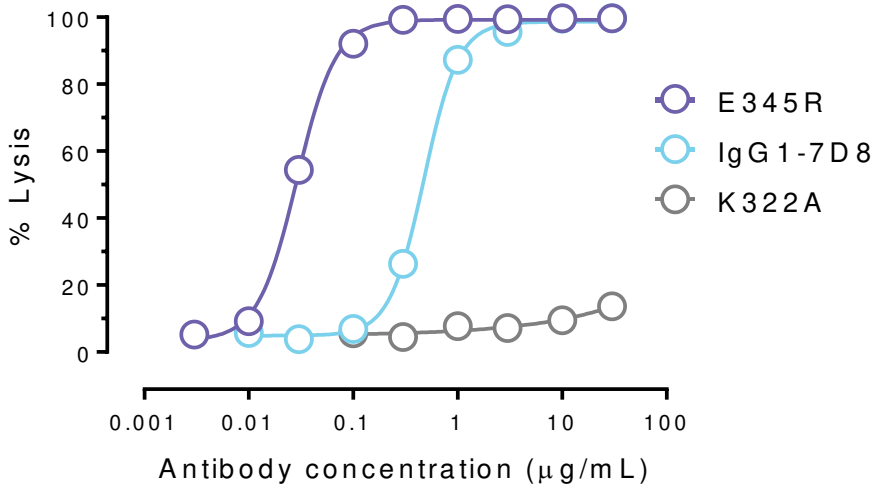
The Biology of IgG Hexamerization

Fc-Fc Interactions Can Be Stimulated for All IgG classes

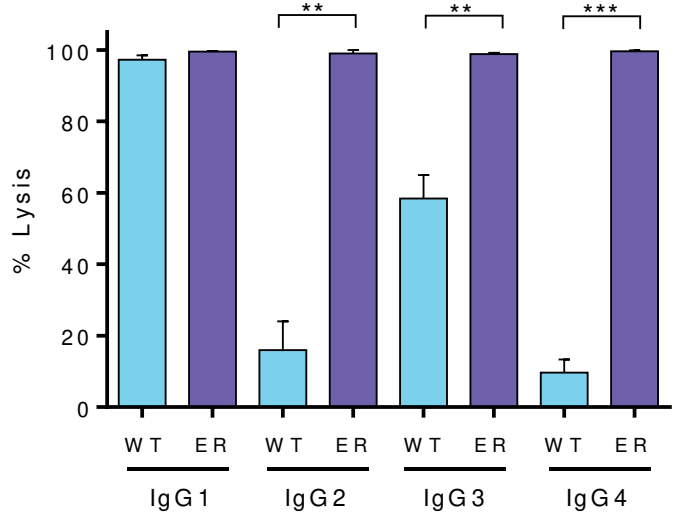




CDC
anti-CD20



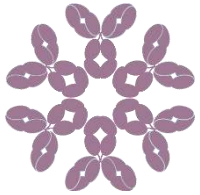
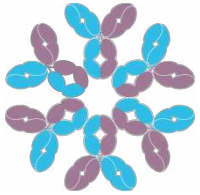
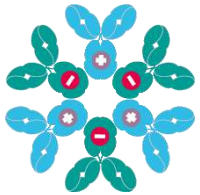
CDC
anti-CD38



Diebolder et al. Science 343:1260-3 (2014)

**P ≤ 0.01; *** P ≤ 0.001; Two-sided unpaired t-test with Welch's correction

Platform Technology Suite Boosting Our Product Pipeline

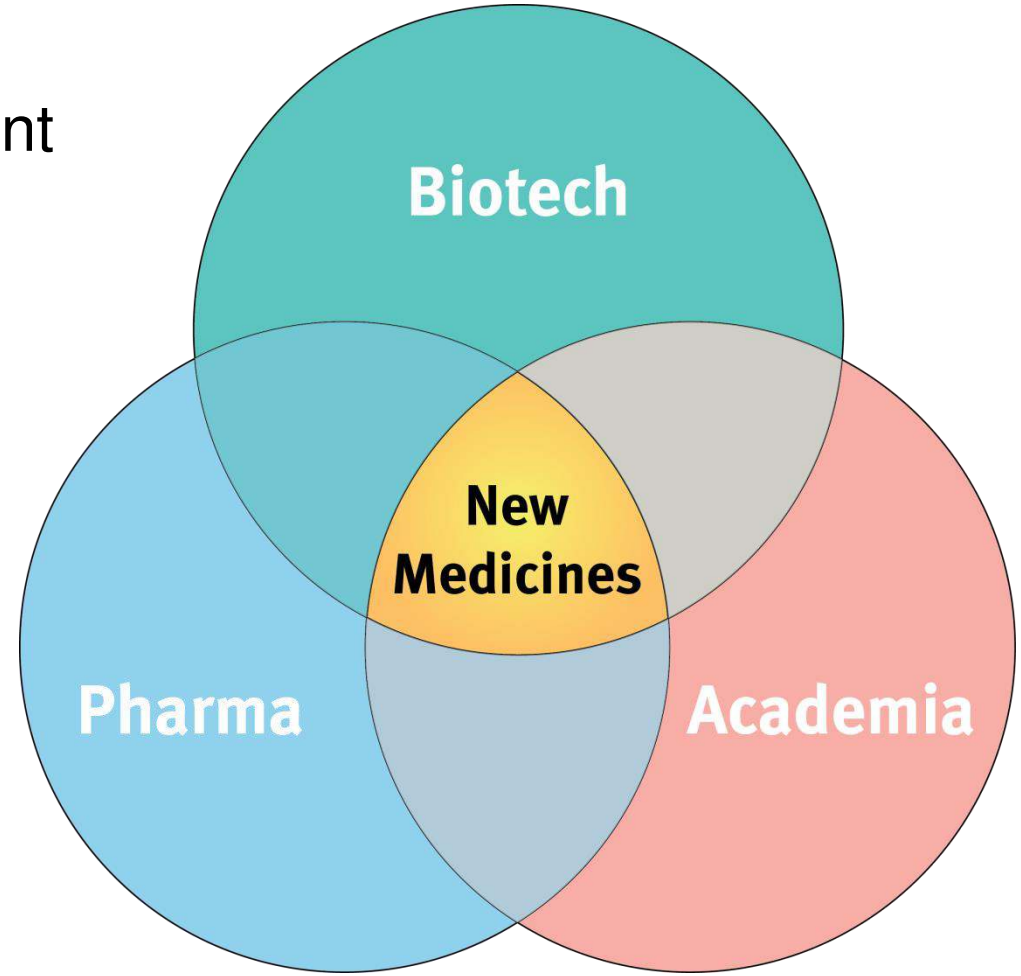
		Principle	Applications
DuoBody®		Bispecific antibodies	Dual targeting: - Recruitment (e.g. T cells) - Tumor heterogeneity
HexaBody®		Target-mediated enhanced hexamerization	Enhanced potency: - CDC - Target clustering, outside-in signaling, apoptosis
DuoHexaBody®		Bispecific antibodies with target-mediated enhanced hexamerization	Dual targeting + enhanced potency - CDC - Target clustering, outside-in signaling, apoptosis
HexElect®		Two co-dependent antibodies with target-mediated enhanced hexamerization	Dual targeting + enhanced potency & selectivity: - Co-dependent unlocking of potency - New target space, previously inaccessible

Development of Therapeutics

Partnering Drives Future Growth

Key factors for successful drug development

- Networking & strategic partnering
- New partnerships
  - Pharma
  - Biotechnology
  - Academia
- Open & transparent communication



The Evolving Innovation Ecosystem
Networking & Widening Landscape

- Winners engage in novel types of partnerships
  - Maximize Bio-Pharma networking
  - Public-private partnerships
  - Open innovation
- Establish new connections
  - Data sciences companies
  - Medical electronics companies
  - Medical devices companies

Thank you

Genmab