



*Innovating  
antibodies,  
improving lives*

# Better Antibodies By Design

SEB Nordic Seminar  
January 7, 2016



# 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.

# Transforming Cancer Treatment

## Focus



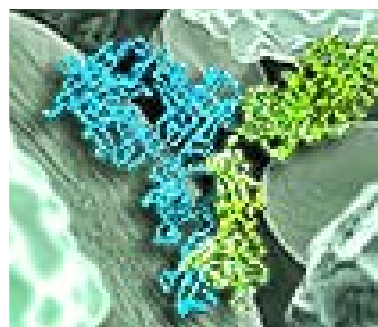
- Differentiated antibodies
- Treatment of cancer

## Products



- DARZALEX™ approved by FDA
- Arzerra® on the market
- 5 other antibodies in clinical studies
- Innovative pre-clinical pipeline

## Technologies



- DuoBody® platform
- HexaBody® technology

## Partnerships












- Leverage our technologies
- Strategic collaborations with pharma & biotech

# Innovative Clinical & Pre-clinical Pipeline

## Further Development for Marketed Products

Product	Disease Indications	Development Phase			
		Pre-clinical	I	II	III
<b>Daratumumab</b> Target: CD38 Partner: Janssen	Multiple myeloma (MM)				
	Non-Hodgkin's lymphoma (NHL)				
<b>Ofatumumab</b> Target: CD20 Indication: Cancer Partner: Novartis	Chronic lymphocytic leukemia (CLL)				
	Follicular lymphoma (FL)				
<b>Ofatumumab</b> Target: CD20 Indication: AI Partner: Novartis	Pemphigus vulgaris (PV) (SubQ)				
	Relapsing remitting multiple sclerosis (RRMS) (SubQ)	Anticipated			
	Neuromyelitis optica (NMO) (SubQ)	Anticipated			

# Innovative Clinical & Pre-clinical Pipeline - Continued

Product	Disease Indications	Development Phase				
		Pre-clinical	I	I/II	II	III
<b>Tisotumab vedotin</b> Target: TF Partner: Seattle Genetics	Solid Cancers					
➤ <b>30 Active Pre-clinical programs incl. HuMax-AXL-ADC</b>	Proprietary programs: HuMab, HuMab-ADC, DuoBody, DuoBody-ADC & HexaBody					
	Partnered programs: HuMab, DuoBody & HexaBody					
<b>Teprotumumab</b> Target: IGF-1R Partner: River Vision	Graves' Orbito pathy					
	Diabetic macular edema					
<b>HuMax-TAC-ADC</b> Target: CD25 Partner: ADCT	Lymphoma					
	Acute myeloid leukemia (AML)					
<b>HuMax-IL8</b> Target: IL-8 Partner: Cormorant	Metastatic solid tumors					
<b>JNJ-61186372</b> Targets: EGFR, cMET Partner: Janssen	Non-small-cell lung cancer (NSCLC)					

# Daratumumab (Marketed as DARZALEX™)

Approved in US as Fourth Line Treatment for MM Patients

## Additional Potential Blood Cancer Indications

- DLBCL, FL, Plasma Cell Leukemia, Mantle Cell Lymphoma, CLL, ALL, AML

## First-in-Class Fully Human Antibody

- Targets CD38 - six ways of attacking cancer cells
- MM & other blood cancers
- Blockbuster potential
- Broad & expansive development in MM

## Partner: Janssen Biotech

- > \$1.1B potential deal value, + double-digit royalties
- No development / commercialization costs for Genmab
- MAA filed with EMA Sept. 2015, accelerated assessment





# Expansive Daratumumab Clinical Development

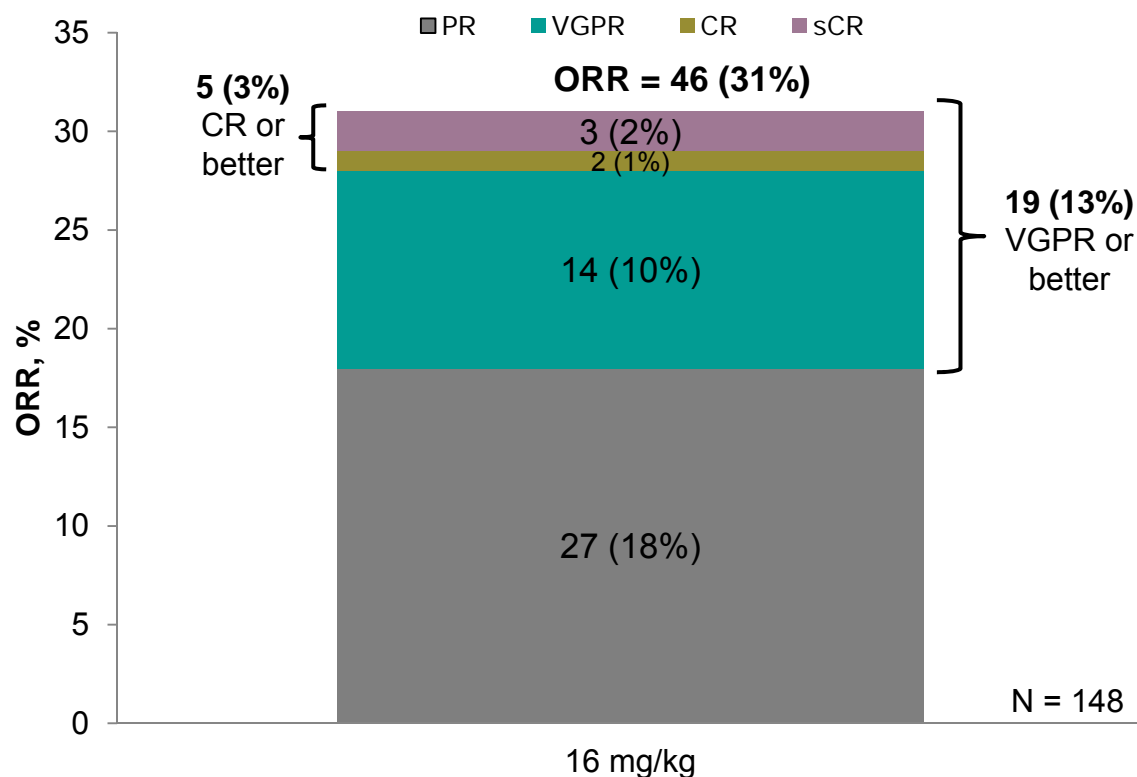
Indication	Disease Stage	Therapy	No. Pts*	Development Phase			
				I	I/II	II	III
Multiple Myeloma**	High Risk Smoldering	Mono	120	SMM2001 (Centaurus)			
	Front line (transplant & non-transplant)	Dara + VMP	700	MMY3007 (Alcyone)			
		Dara + Revlimid + Dex	730	MMY3008 (Maia)			
		Dara + VTD	1,080	MMY3006 (Cassiopeia)			
		Multi combo Study (6 arms)	190	MMY1001 (Equuleus)			
	Relapsed or Refractory	Dara + Revlimid + Dex	45	GEN503			
		Dara + Revlimid + Dex	570	MMY3003 (Pollux)			
		Dara + Velcade + Dex	480	MMY3004 (Castor)			
		Dara +Vel+Dex, Japan	6	MMY1005			
		Subcutaneous	128	MMY1004			
NHL (DLBCL / MCL / FL)	Relapsed or Refractory	Mono	210	LYM2001 (Carina)			
<b>Total:</b>			<b>4,268</b>				

\*Approx. no. based on clinicaltrials.gov \*\*Maintenance integrated into some study protocols

VMP = bortezomib & melphalan-prednisone VTD = bortezomib, thalidomide & dexamethasone

# Efficacy in Monotherapy

## Combined Analysis of Monotherapy Studies



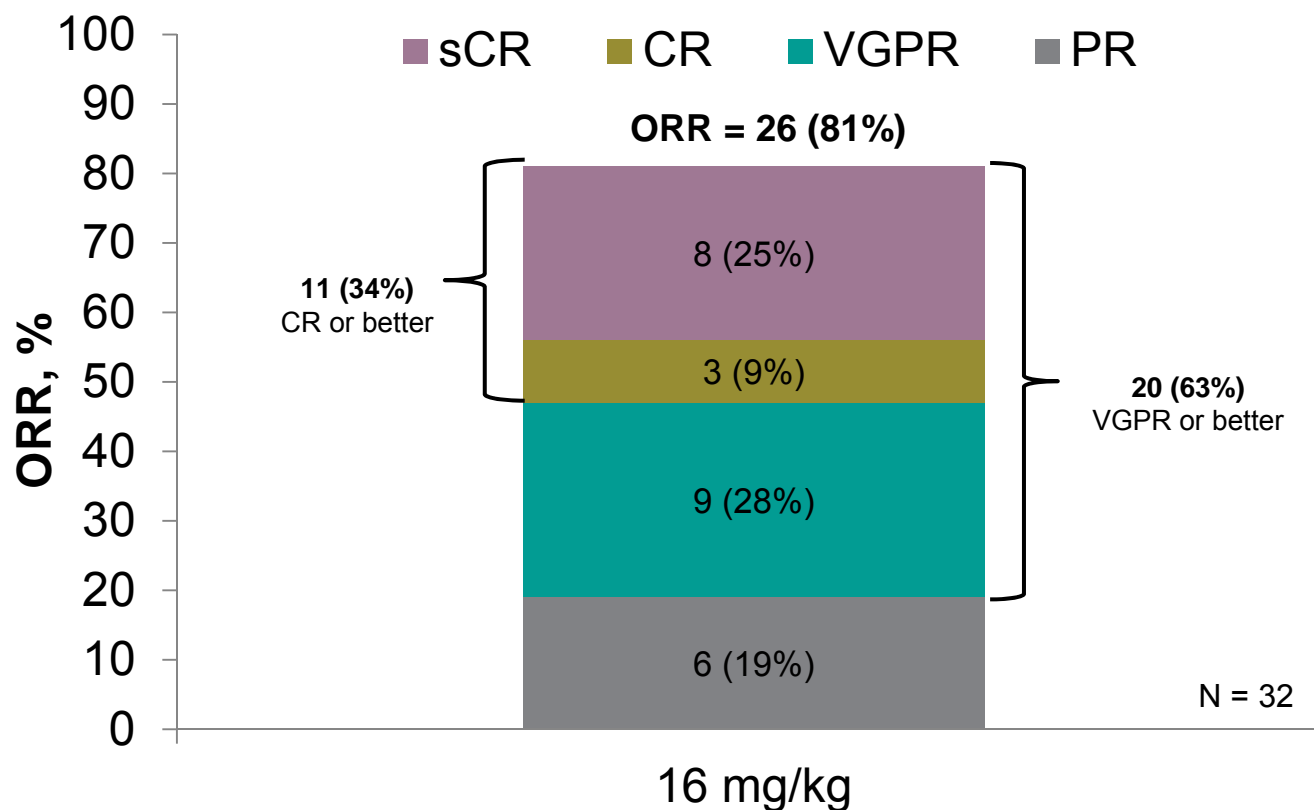
**ORR = 31%**

**ORR was consistent in subgroups including age, number of prior lines of therapy, refractory status, or renal function**



# Combination Treatments In Development

## Daratumumab + Lenalidomide + Dexamethasone



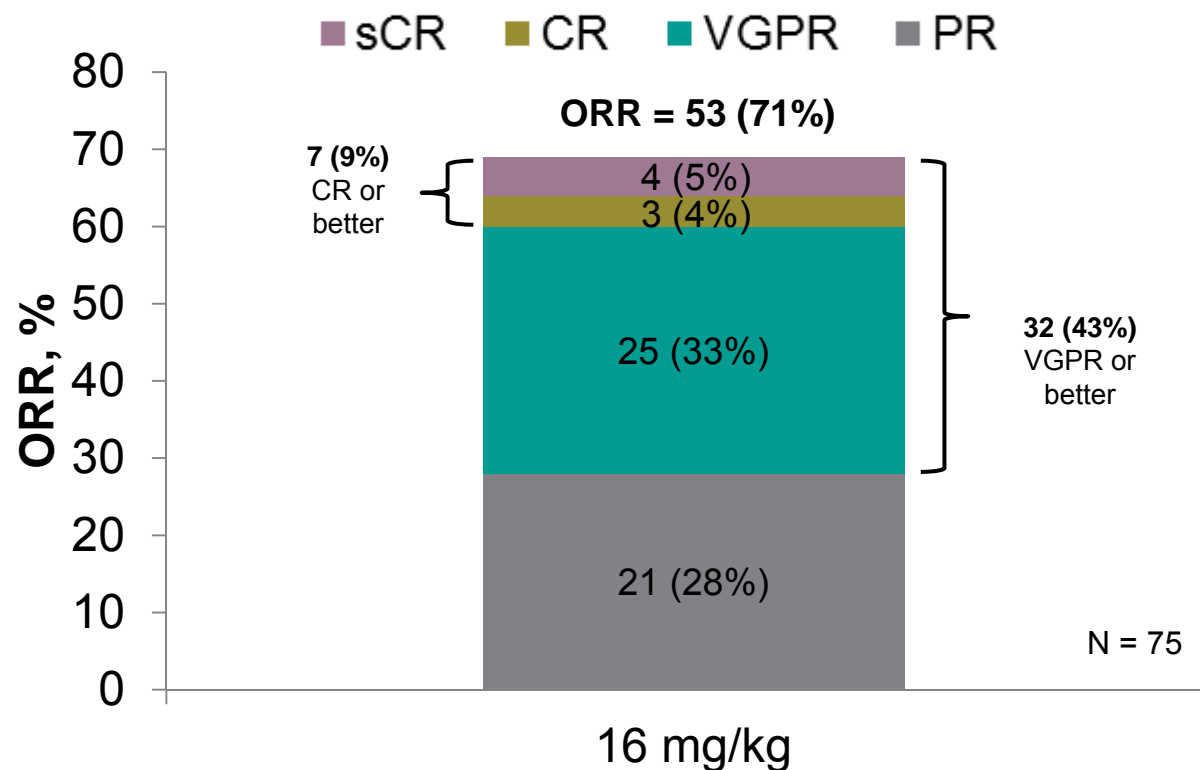
**ORR = 81%**  
**Clinical benefit rate (ORR + minimal response) = 88%**

sCR, stringent complete response; CR, complete response; VGPR, very good partial response; PR, partial response

Data presented at ASH 2015

# Combination Treatments In Development

## Daratumumab + Pomalidomide+ Dexamethasone



**ORR = 71%**

**ORR in double-refractory patients = 67%**

**Clinical benefit rate (ORR + minimal response) = 73%**

sCR, stringent complete response; CR, complete response; VGPR, very good partial response; PR, partial response  
Data presented at ASH 2015

# Arzerra® (ofatumumab)

## Autoimmune diseases (unapproved)

- Phase III ongoing PV
- Relapsing remitting MS Ph III's & pivotal NMO anticipated
- Novartis acquired AI rights from GSK in Dec. 2015

## Marketed Globally

- Human antibody targeting CD20 on cancerous B-cells
- Cancer**
- Approved\*
  - US 1<sup>st</sup> Line CLL in combo w/ chlorambucil
  - EU 1<sup>st</sup> Line CLL in combo w/ chlorambucil or bendamustine
  - Fludarabine and alemtuzumab refractory CLL
- Phase III trials in CLL & FL
- Partnered with Novartis
- US & EU reg. subm. for maintenance therapy relapsed CLL
  - PDUFA; Jan. 21, 2016

**Arzerra®**  
(ofatumumab)  
Injection, for intravenous infusion  
20 mg/mL

\*In US approved in combination with chlorambucil for the treatment of previously untreated patients with CLL for whom fludarabine-based therapy is considered inappropriate as well as for the treatment of patients with CLL refractory to fludarabine and alemtuzumab.

In EU approved in combination with chlorambucil or bendamustine for the treatment of patients with CLL who have not received prior therapy and who are not eligible for fludarabine-based therapy, as well as for the treatment of patients with CLL refractory to fludarabine and alemtuzumab.

# Tisotumab vedotin: Next Generation Therapeutic

## Phase I/II & Phase I studies in Patients with Solid Tumors

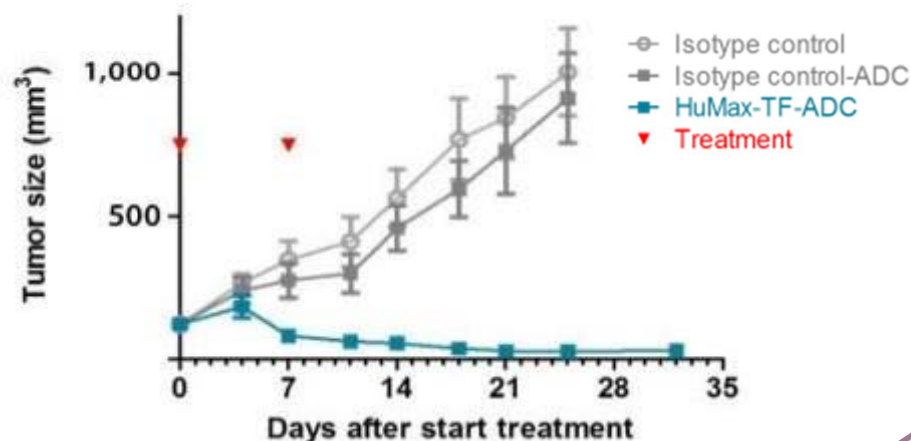
### 8 Tumors

- Ovary, cervix, endometrium, bladder, prostate, head & neck, esophagus, lung
- Potential in pancreatic cancer

### Fully Human antibody-drug conjugate

- Targets Tissue Factor (TF)
- Potent anti-tumor activity in pre-clinical models for multiple solid cancers
- First-in-human Phase I/II trial ongoing
- Phase I/II dose escalation in solid tumors finalized
  - Clinically relevant dose of 2.0 mg/kg identified as MTD
  - Preliminary evidence of efficacy encouraging
- Collaboration: Seattle Genetics opt-in (after Ph I/II)

Pre-clinical Cervical Cancer Model



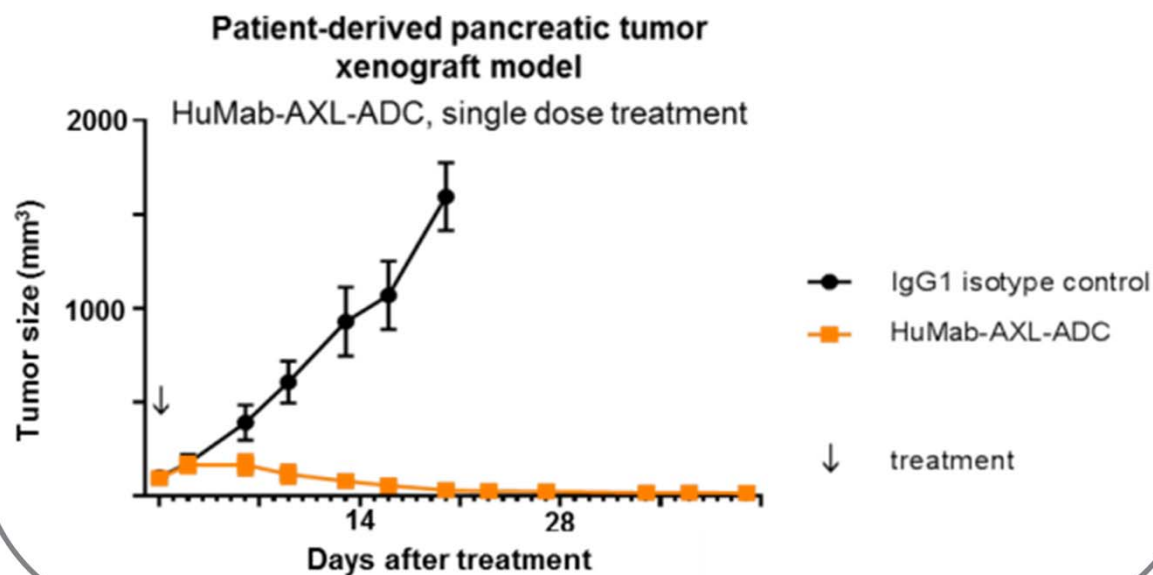


# Next in the Clinic: HuMax-AXL-ADC

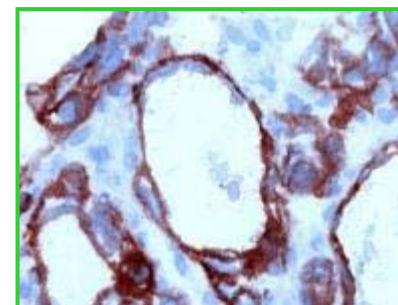
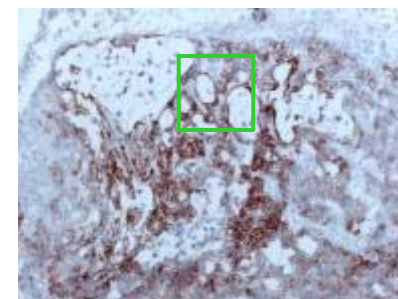
## Efficacy in *in vivo* Tumor Model

### Fully Human Antibody-Drug Conjugate

- Targets AXL signaling molecule expressed on many solid cancers
- HuMax-AXL-ADC shows anti-tumor activity in patient-derived xenograft model with heterogeneous target expression
- Collaboration: Seattle Genetics



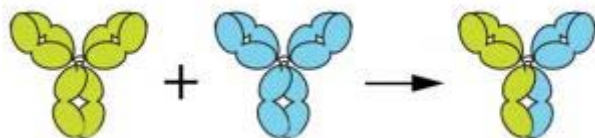
### AXL expression in xenograft model



AXL antibody

# Cutting Edge Proprietary Technologies

## Creating Truly Differentiated Products

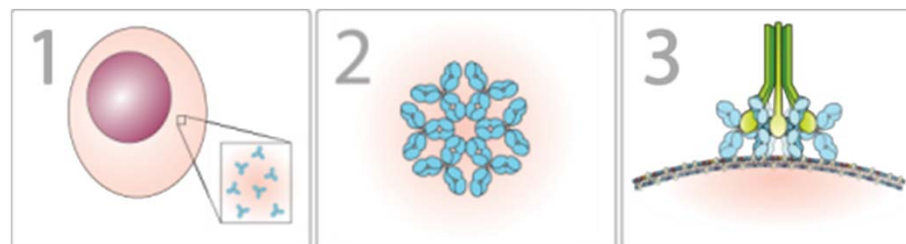


### DuoBody

- Efficient & versatile bispecific Ab platform
- Applicable to any antibody from any platform
- Regular IgG format
- Large scale production validated
- No developability liabilities
- Robotized bispecific library generation
- 9 ongoing collaborations incl. with Novartis, Novo Nordisk & Janssen Biotech

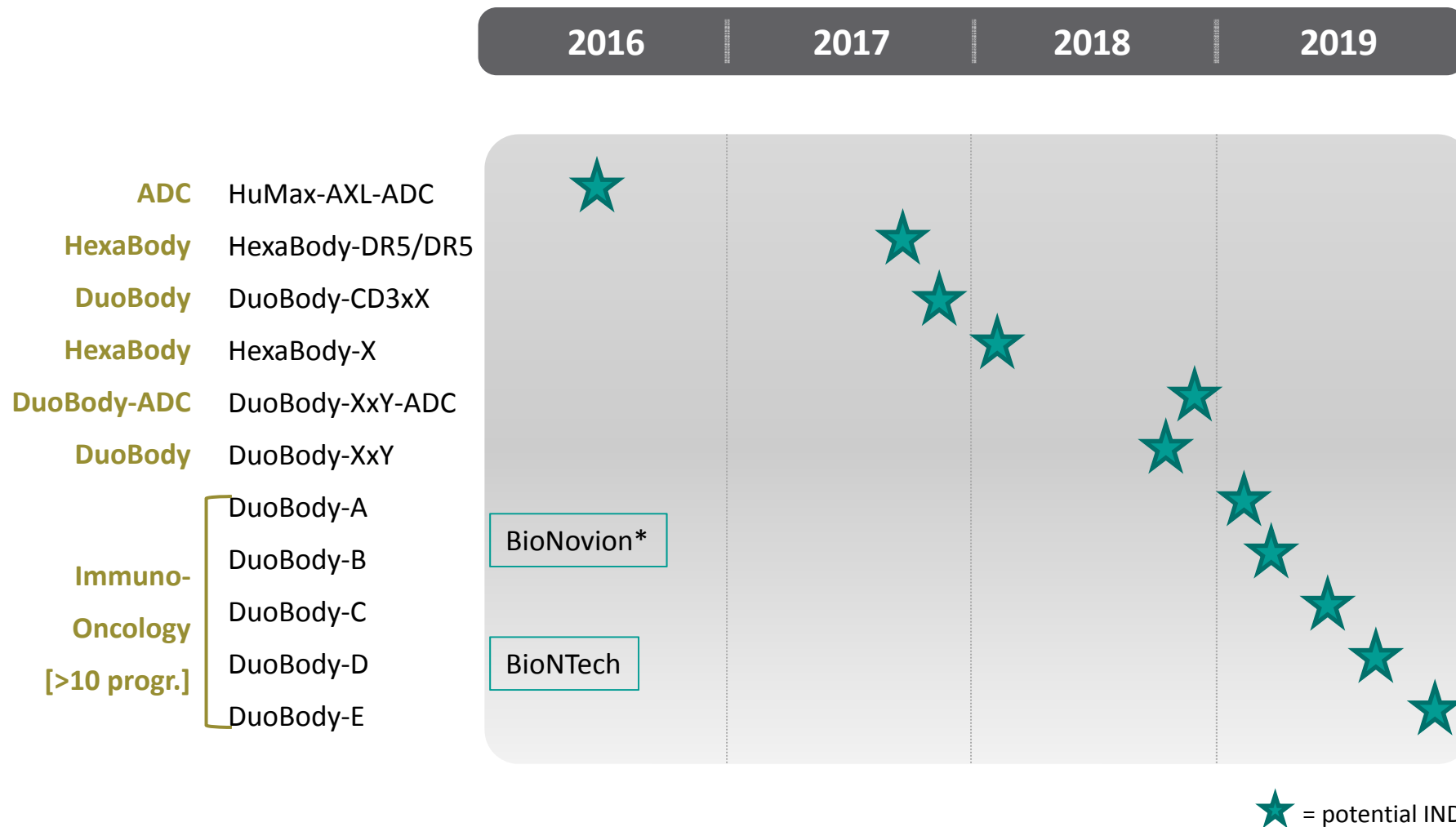
### HexaBody

- Robust effector function enhanced Ab
- Enables antibodies to readily form clusters of 6 (hexamers)
- Induces & enhances target cell killing after binding (CDC and apoptosis)
- Creates innovative products in cancer & infectious diseases
- Collaborations with Gilead, Humabs BioMed & Agenus



# Genmab Knock-Your-Socks-Off Pipeline

## Efficient IND Engine



Pre-clinical pipeline targeting at least 4 leapfrog INDs in next 4 years

\*Sept 2015 Aduro BioTech, Inc. announced definitive agreement to acquire BioNovion



# HexaBody-DR5/DR5

## Targeting DR5 for Cancer Therapy

### DR5 (death receptor 5)

Cell surface receptor that mediates programmed cell death

In normal physiology, binding of TRAIL ligand results in DR5 clustering & cell death

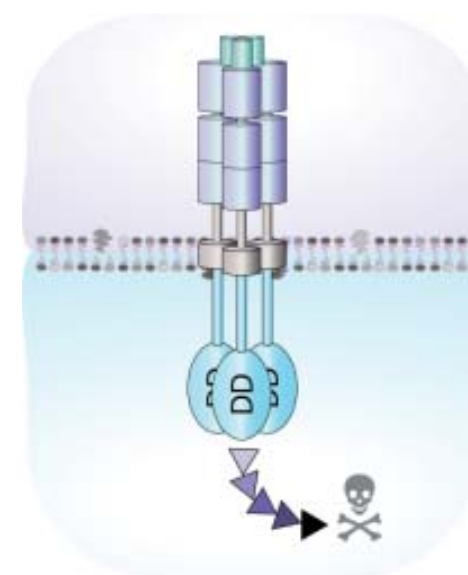
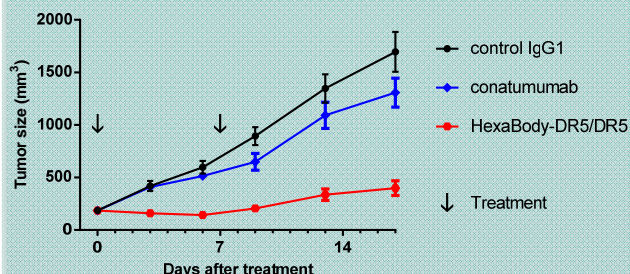


### Targeting DR5 for treatment of cancer

- Agonistic DR5 mAb induce apoptosis after crosslinking
- Agonistic DR5 antibodies have shown limited anti-tumor activity in the clinic

- Need for increased therapeutic potency
- Use HexaBody technology to induce clustering & activation of DR5 molecules, without a need for additional crosslinking
- Combination of two HexaBody molecules against two non-overlapping DR5 epitopes induces maximal cell death

#### Mouse xenograft model



DR5 activation induces cell death

# Creating Value Through Different Types of Partnerships

## Product Partnerships

- Daratumumab: Janssen Biotech
- Ofatumumab: Novartis
- Tisotumab vedotin: Seattle Genetics [opt-in right]
- HuMax-TAC-ADC: ADC Therapeutics
- HuMax-IL8: Cormorant Pharmaceuticals

## Technology Partnerships

- DuoBody
  - Commercial: Novartis, Janssen Biot., Novo Nordisk, BioNovion\*, BioNTech
  - Research: Gilead, Agenus, Humabs BioMed, Pierre Fabre
- HexaBody: Gilead, Humabs BioMed, Agenus
- Other: Medarex, Seattle Genetics, OMT\*\*, MAB Discovery

## Discovery Partnerships

- Roche, Lundbeck, River Vision (teprotumumab)

\*Sept 2015 Aduro BioTech, Inc. announced definitive agreement to acquire BioNovion, \*\*Dec 2015 Announced that Ligand would acquire OMT, Inc.

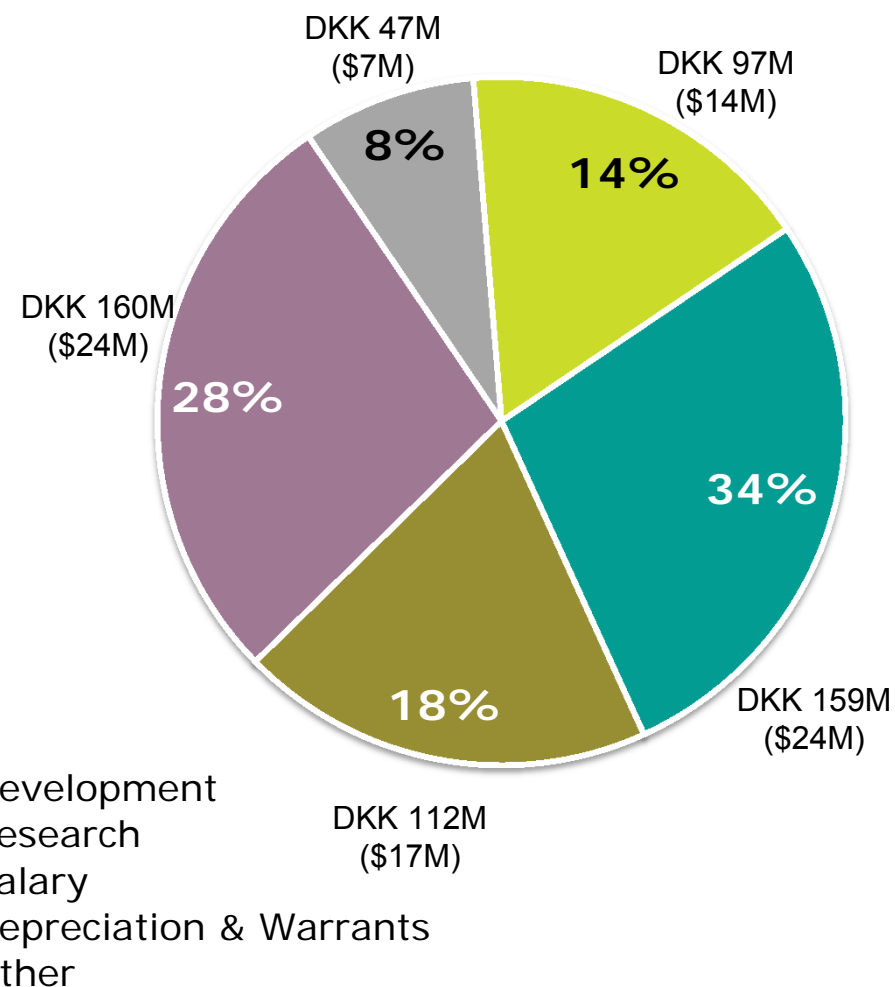
# Well-Capitalized Biotech – 2015 Guidance

Income Statement	DKKM	USDM*
Revenue	1,025 – 1,100	154 - 165
Operating expenses	(550) – (600)	(83) – (90)
Reversal of GSK Liability	175	26
Operating income	625 - 700	94 - 105
Cash position at end of year**, +	3,000 – 3,100	451 - 466
*USD 1.00 = DKK 6.6588 (September 30, 2015)		
**Cash, cash equivalents and marketable securities		

2015 Guidance – November 3, 2015. Revised on November 16, 2015 following the approval of Darzalex

\*Due to early payment of the daratumumab first commercial sale milestone by Janssen, the cash position will be increased by USD 45 million

## 2015 Expense Base DKK 575M (\$86M)





## 2016 Goals: Maximizing Product Portfolio Value

Priority	✓ Targeted Milestone
Maximize daratumumab progress	<ul style="list-style-type: none"> <li>» Launch DARZALEX™ in US and other approved territories</li> <li>» CHMP decision on monotherapy application</li> <li>» Phase III multiple myeloma (MM) interim efficacy analysis in relapsed / refractory MM settings [Pollux and Castor trials]</li> <li>» File for label in relapsed / refractory settings if results of interim analyses are favorable</li> <li>» Start multiple clinical trials in MM and non-MM indications</li> <li>» Report initial clinical data non-MM indications</li> </ul>
Optimize ofatumumab value	<ul style="list-style-type: none"> <li>» Start Phase III sc autoimmune trials</li> <li>» Regulatory decision for CLL maintenance</li> <li>» File for label in relapsed CLL</li> <li>» Phase III refractory follicular lymphoma (FL) interim efficacy data</li> </ul>
Strengthen differentiated product pipeline	<ul style="list-style-type: none"> <li>» Phase I tisotumab vedotin additional data</li> <li>» IND for HuMax-AXL-ADC and start clinical trial</li> <li>» Progress HexaBody-DR5/DR5 program</li> <li>» Progress pre-clinical DuoBody &amp; HexaBody projects</li> </ul>
Broaden partnership portfolio with next generation technologies	<ul style="list-style-type: none"> <li>» Sign new / expanded DuoBody &amp; HexaBody collaborations</li> <li>» Progress partnered programs</li> <li>» New IND filings</li> </ul>
Disciplined financial management	<ul style="list-style-type: none"> <li>» Selectively invest to progress and broaden differentiated product pipeline</li> </ul>

# On Track to a Sustainably Profitable Future

Two products on the market

- DARZALEX & Arzerra

Robust differentiated product pipeline

- 7 products in clinical development
- Innovative pre-clinical pipeline

Proprietary technologies

- DuoBody & HexaBody

Partnerships → Product ownership

- Well capitalized

Positioned for success

- For patients & shareholders





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