

## Developing Highly Differentiated Antibody Therapeutics

#### argenx



January 7-10, 2019 JP Morgan Healthcare Conference, San Francisco **Forward-Looking Statements** 

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## **Rapidly Emerging Leadership in Immunology**

Pioneering differentiated therapeutic antibodies in severe autoimmune diseases and cancer



# In

#### **Innovative Access Program**

- Robust science
- Collaborative
- Efficient pipeline expansion

3

Highly Productive Development Engine

- Rapid development timeline
- New candidate each year

## Multi-Asset Late-Stage Platform Phase 3 in MG and ITP

**Novel Target Biology** 

technology suite

• Integrated via advanced

First- and best-in-class potential

• Pre-commercial activities in MG



- Pipeline-in-a-product strategy
- Strong biological rationale

#### Translate immunology breakthroughs into novel medicines which truly impact patients' lives

## **Deep Pipeline of Wholly-Owned Candidates for Orphan Indications**



Product Candidate	Target	Indication	Preclinical	Phase 1	Phase 2	Phase 3	BLA	Next Milestone / Commentary
Wholly-Owne	d & Co-Develop	ment Product Candid	lates					
		Myasthenia Gravis				adapt	ot	3Q18: Phase 3 initiated
		Immune Thrombocytopenia (ITP)				gravis study		2H19: Phase 3 initiation
ARGX-113 Efgartigimod	FcRn	ITP Subcutaneous Formulation						1H19: Phase 2 initiation
		Pemphigus Vulgaris						1H19: Cohort 3 initiation
		Chronic Inflammatory Demyelinating Polyneuropathy						2H19: Phase 2 initiation
ARGX-117	Novel complement target	Severe Autoimmune						Antibody-mediated autoimmune diseases
		Diseases						Complementary to ARGX-113
ARGX-110 Cusatuzumab	CD70	Acute Myeloid Leukemia			Jans: verseterer			\$500 million upfront Eligible for up to \$1.3 billion in milestones; tiered royalties

## **Innovative Access Program Allows Strategic Partnering**

Partner activity focused in therapeutic areas outside severe autoimmune and cancer



Product Candidate	Target	Indication	Preclinical	Phase 1	Phase 2	Phase 3	BLA	Next Milestone / Commentary
Partnered Product Candidates								
ARGX-112	IL-22R	Skin Inflammation						Eligible for up to ~€100mm in milestones; tiered royalties
ARGX-115 Obbvie	GARP	Cancer Immunotherapy		AbbVie exercised option to develop and commercialize in August 2018		elop 018	Received \$60mm in upfront and preclinical milestone payments Eligible for up to \$625mm milestones; tiered royalties	
ARGX-116	АроС3	Dyslipidemia						Eligible for double-digit royalties and exclusive option to license the program; collaboration with Novo Nordisk

- Innovative Access Program: 7 live programs
- Antibody discovery alliance with *Shire* focused on multiple rare disease targets 2 options exercised
- Additional programs include ARGX-111 targeting c-MET in solid tumors and blood cancers (P1 concluded, wholly-owned, available for partnering) and ARGX-109 (gerilimzumab) targeting IL-6 for rheumatoid arthritis (P1 concluded, partnered with Genor Biopharma)

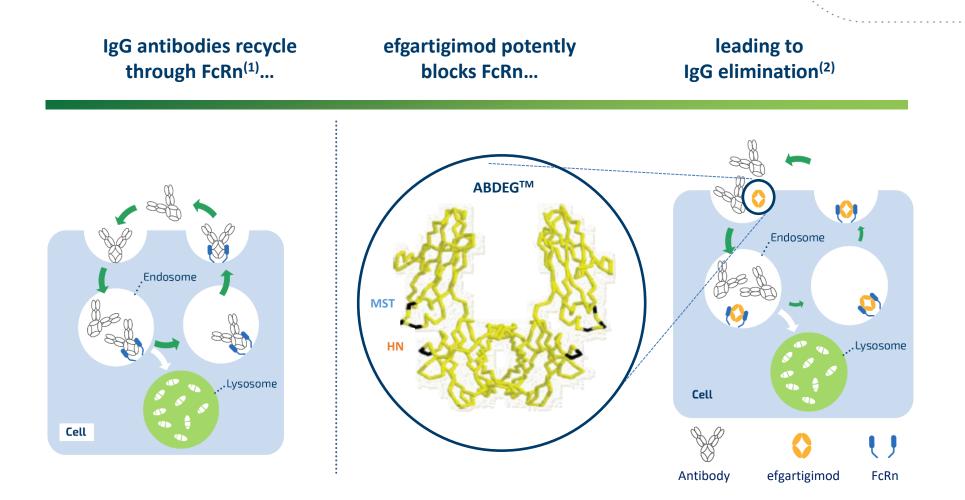


# Efgartigimod: A Pipeline-in-a-Product Opportunity

## Efgartigimod: Human IgG1 Fc Fragment with ABDEG<sup>™</sup> Mutations

#### Exploits Natural Fc/FcRn Interaction



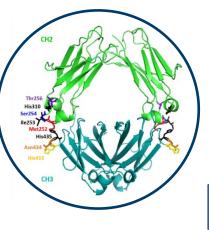


(3) Ulrichts et al. 2018, J Clin Invest.(4) argenx data

### **Efgartigimod Emerges as First-In-Class and Best-In-Class**



Human IgG1 Fc fragment with ABDEG<sup>™</sup> mutations



- First-in-class features
- Reduced FcyR, C1q binding

Endosomal recycling FcRn-efgart complex; no lysosomal degradation

**Can rebind FcRn** 

1/3 size of IgG; excellent physicochemical stability

- Natural ligand of FcRn
- Enhanced, pH dependent binding

#### Best-in-class clinical attributes

#### Clean safety & tolerability profile (~120 subjects)

- No headache or GI AE profile
- No decrease in albumin

Long half-life; unparalleled tissue penetration & distribution

Long-lasting, potent PD effect; fast onset of clinical benefit

Lower dose enables convenient subQ administration, high concentration formulations and lower COGS

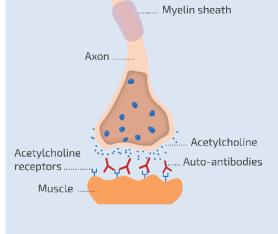
## **Novel Treatment Modality in Severe Autoimmune Diseases**

#### Efgartigimod Beachhead Indications



#### Myasthenia Gravis

- Block acetylcholine
   receptors
- Cross-link + internalize AChRs
- Complement recruitment



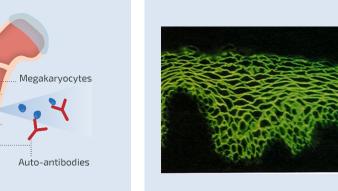
#### Immune Thrombocytopenia

- Enhance platelet clearance
- Platelet killing

Platelets

Bone narrow

- Inhibit platelet production
- Reduced platelet function



#### **Pemphigus Vulgaris**

 Sterically hinder epithelial adhesion affecting skin and mucosal integrity

#### **Common Characteristics** of Beachhead Indications

- Pathogenic auto-antibodies causal to disease biology
- Typical treatment options: corticosteroids, broad immunosuppressants, IVIG, plasmapheresis, Rituxan – with mixed response rates and serious side effects
- Orphan potential in U.S. (MG: 50-60K<sup>(1)</sup>; ITP: 50K<sup>(2)</sup>; PV: 30-40K<sup>(3)</sup>)
- Potential pharmacoeconomic benefit to healthcare system given price of targeted therapies (e.g., Soliris for refractory MG ~\$700K / year)<sup>(4)</sup>

(1) Philips et al. 2003, Ann N Y Acad Sci; Drachman et al. 1993, New Eng J Med

- (2) Wall street research; Estimated 65K ITP patients in US with  $\sim$ 80% diagnosed with primary ITP
- (3) IPPF (www.pemphigus.org)
- (4) Source: Reprinted with permission by First Databank Inc.; WAC = Wholesale Aquisition Cost 8/21/17





Consistent and favorable tolerability profile



Fast, long-lasting and sustained benefit; clinically meaningful and statistically significant



Strong correlation between IgG level reduction and disease improvement; supporting focus on IgG-mediated diseases



Significant reduction of AChR autoantibodies



Phase 2 execution advances efgartigimod into Phase 3 (initiated)

## **Efgartigimod Safety And Tolerability Profile**

2 hour infusion enabling outpatient administration

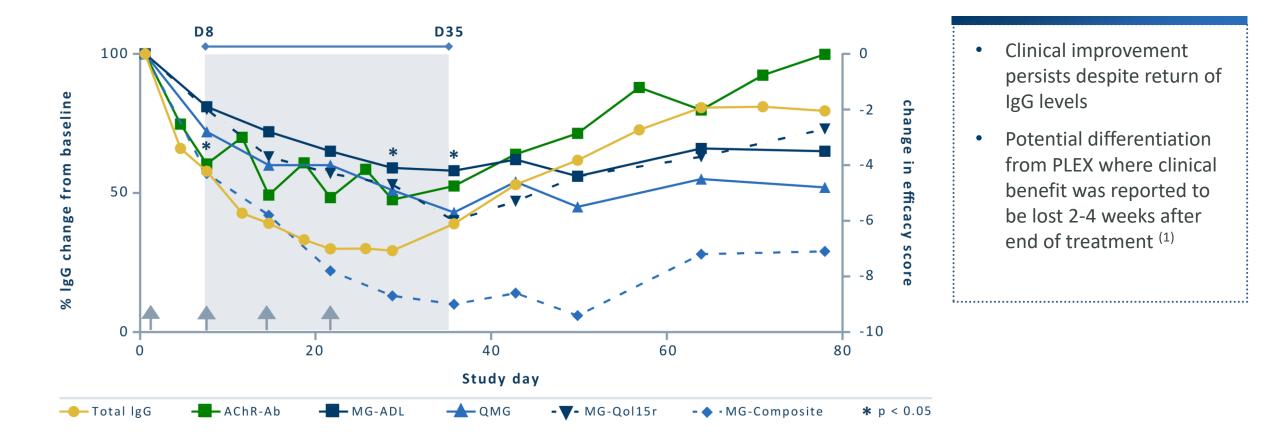


- Efgartigimod was well-tolerated in patients; confirmed findings from Phase 1 healthy volunteer trial
- TEAE profile was balanced between efgartigimod and placebo
- TEAEs were mostly mild (grade 1) in severity; no severe AEs were reported
- No deaths, serious AEs or TEAEs leading to discontinuation of treatment were reported during trial

Treatment Emergent Adverse Events (TEAEs) Reported in ≥ 2 patients	Placebo (N = 12)	Efgartigimod (N = 12)
TEAEs (Total)	10 (83.3%)	10 (83.3%)
• Headache	3 (25.0%)	4 (33.3%)
• Nausea	1 ( 8.3%)	1 ( 8.3%)
Diarrhea	1 ( 8.3%)	1 ( 8.3%)
Abdominal pain upper	1 ( 8.3%)	1 ( 8.3%)
• Arthralgia	2 (16.7%)	
B-lymphocyte decrease		2 (16.7%)
Lymphocyte count decrease	-	2 (16.7%)
Monocyte count decrease		2 (16.7%)
Neutrophil count increase	-	2 (16.7%)
• Myalgia		2 (16.7%)
• Pruritus	2 (16.7%)	1 ( 8.3%)
Rhinorrhea	1 ( 8.3%)	1 ( 8.3%)
Tooth abscess	2 (16.7%)	
• Toothache	2 (16.7%)	
Efgartigimod deemed related TEAEs	3 (25.0%)	8 (66.7%)
Headache	1 ( 8.3%)	3 (25.0%)
Monocyte count decrease	0 ( 0.0%)	2 (16.7%)
Rhinorrhea	1 ( 8.3%)	1 ( 8.3%)

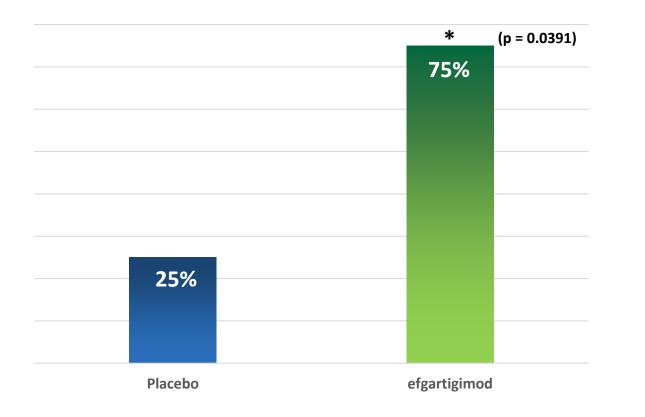
## **Total & Pathogenic IgG Reduction Correlates with Clinical Improvements** Assessment for all efficacy scales







#### Patients with MG-ADL $\geq$ 2 for a period of <u>at least</u> 6 weeks



- 83% of patients treated with efgartigimod achieved a clinically meaningful response (MG-ADL ≥2)
- 75% of patients treated with efgartigimod had a clinically meaningful and statistically significant improvement in MG-ADL score for a period of at least 6 consecutive weeks versus 25% of patients on placebo

#### **Robust Clinical Improvement Over Placebo Group**





• Efgartigimod *vs.* placebo: increasing differentiation observed with increasing MG-ADL/QMG thresholds

\* Missing data point of 1 patient

### **Myasthenia Gravis Phase 3 ADAPT Trial Design**

Same Primary Endpoint as Successful Phase 2 Trial



Randomized, double-blind, placebo-controlled, multicenter trial enrolling 150 patients in North America, Europe and Japan

- 10 mg/kg intravenous (IV) dose of efgartigimod over 26-week period
- Enrolling AChR positive and AChR negative patients with disease driven primarily by MuSK and LRP4 autoantibodies
- Patients in the ADAPT trial will be able to roll over into an open-label extension trial for a period of one year
- First patient dosed in September 2018
- Based on PMDA feedback, this Phase 3 trial, if data is positive, to also serve as a basis for Japan registrational submission



#### **Primary endpoint**

Myasthenia Gravis Activities of Daily Living (MG-ADL) Score

#### Secondary endpoints

Efficacy, Safety, Tolerability, Quality of Life and Impact on Normal Daily Activities Measures

## **ITP Phase 2 Results Establish Hematologic Beachhead**

Novel approach beyond boosting platelet production or broad immuno-suppression





Favorable and consistent safety and tolerability profile

- No trends seen for infections or headaches across all studies
- No decreases in IgM, IgE, IgA or albumin



Robust efficacy signal in relapsed/refractory population after short drug exposure

- Clinically meaningful increase in platelet counts over placebo
- 50% of patients came on study with platelets <15x10<sup>9</sup>



Strong correlation between IgG reduction, platelet count improvement and reduction of bleeding events

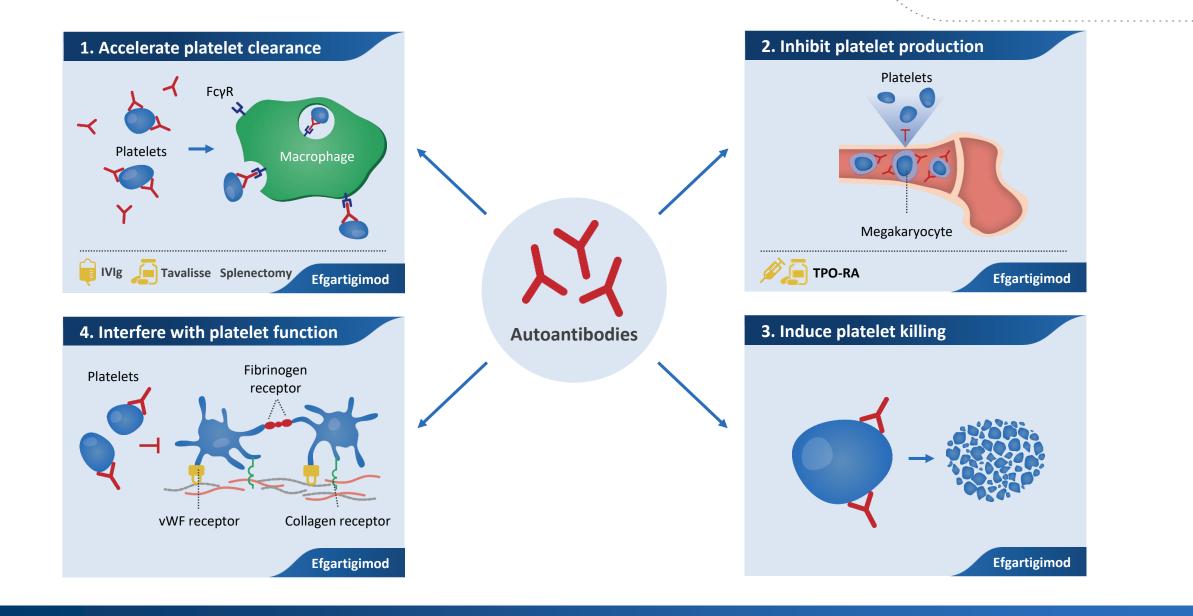


Data enable Phase 3 in ITP (IV) and launch of Phase 2 in ITP (SC)

## **Efgartigimod Targets All Pathogenic AutoAb Actions Simultaneously**

Potential to eliminate therapeutic cycling based on trial-and-error





## **Favorable Tolerability Profile Consistent with Previous Studies**

Treatment-emergent adverse events balanced between active and placebo arms



- Tolerability profile consistent with Phase 2 myasthenia gravis (MG) and Phase 1 healthy volunteer (HV) trials
- TEAEs mostly mild in severity (grade 1)
- No deaths or TEAEs leading to discontinuation of treatment reported\*

#### **Bleeding TEAEs not included**

Treatment Emergent Adverse Events (TEAEs) Reported in ≥ 2 subjects	Placebo (N = 12)	Efgartigimod 5 mg/kg <b>(N = 13)</b>	Efgartigimod 10 mg/kg <b>(N = 13)</b>
Most common TEAEs N (%)			
• Headache	2 (16.7)	1 (7.7)	-
Hypertension	1 (8.3)	-	2 (15.4)
Vomiting	-	-	2 (15.4)
• Cystitis	-	1 (7.7)	1 (7.7)
• Rash	-	1 (7.7)	1 (7.7)
Productive cough	1 (8.3)	1 (7.7)	-
TEAEs <i>deemed related</i> to study intervention N (%)			
• Headache	1 (8.3)		
Vomiting			1 (7.7)
Pubic pain	1 (8.3)		
Vaginal discharge	1 (8.3)		
Amenorrhoea	1 (8.3)		

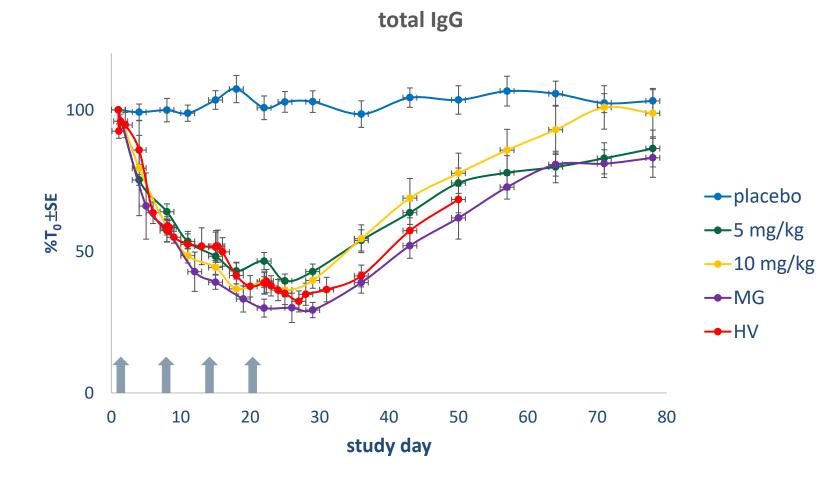
\* One thrombocytopenia downgraded per protocol after database lock

argenx data: Table 14.3.1.2a & 14.3.1.5a - Treatment-Emergent Adverse Events by System Organ Class, Preferred Term and Relationship to Study Drug - Main Study



## **Efgartigimod Leads to Lasting IgG Reduction Across Studies**

#### Total IgG levels in efgartigimod studies to date (Healthy Volunteers, MG, ITP)



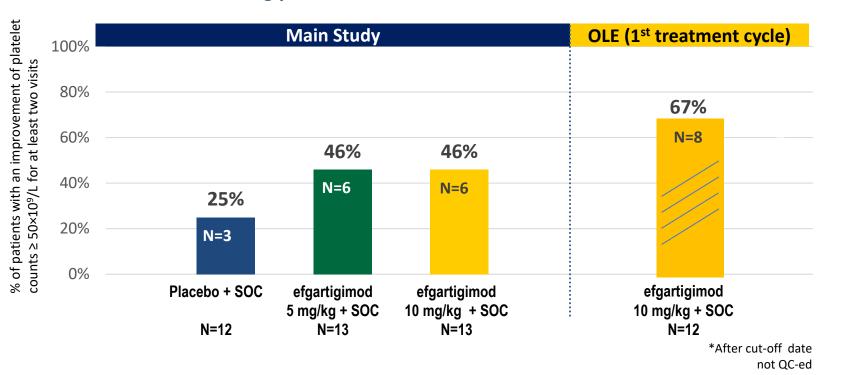
- Pharmacodynamics (PD) closely align with Phase 1 trial in HV and Phase 2 trial in MG
- IgM, IgA and albumin levels not affected (data not shown)
- Half-life: approx. 5 days
- Pharmacokinetics (PK) very similar to Phase 1 trial in HV and Phase 2 trial in MG (data not shown)
- Low titer of anti-drug antibodies (ADA) seen in 16.7% placebo patients vs. 30.8% efgartigimod patients (10 mg/kg) with no apparent effect on PK/PD

## **Strong Improvement of Platelet Counts Across Doses**

46-67% of patients exceeded platelet counts  $\geq$  50X10<sup>9</sup>/L during at least two visits



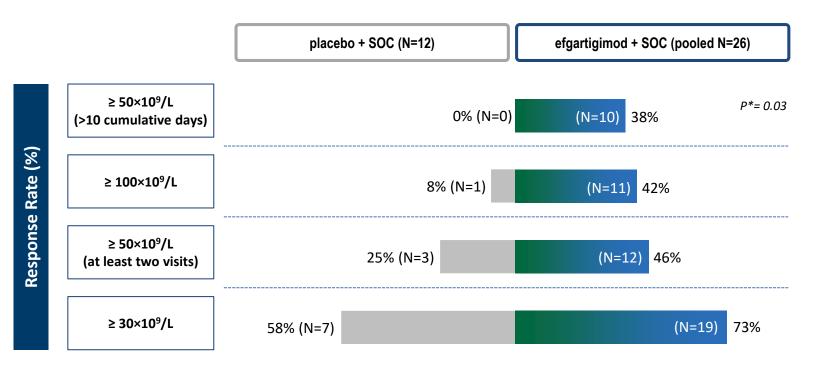
Patients achieving platelet counts of  $\geq$  50×10<sup>9</sup>/L at least two times



- OLE acts as true fourth cohort since patients' platelets had to fall below 30x10<sup>9</sup>/L to be eligible for a treatment cycle; patients still in response from primary study were not eligible
- Responses seen across newly diagnosed (in 5mg/kg arm), persistent and chronic ITP patients



#### Post-hoc analysis of increasing thresholds of efficacy

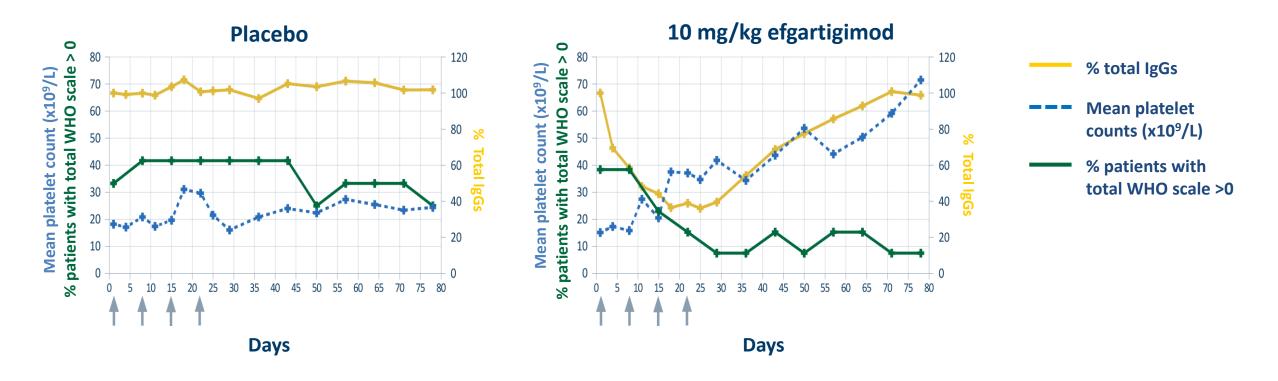


- Efgartigimod generated therapeutic effect at multiple relevant thresholds of efficacy
- Duration of platelets remaining ≥50x10<sup>9</sup>/L ranged from 1 - 20 weeks with five patients above that platelet threshold for more than a month

# Reduction of Total IgGs Correlates with Increased Platelet Counts and Reduced Bleeding Events



#### Mean platelet counts versus total WHO scale versus total IgGs







Rapid disease control in 4 out of 6 PV patients:

- 3 within 1 week
- 1 within 4 weeks



### Patients with disease control:

- Mean max reduction in Pemphigus Disease Area Index (PDAI) score: 55%
- Mean max decrease in pathogenic IgGs: 57%



## Favorable tolerability profile

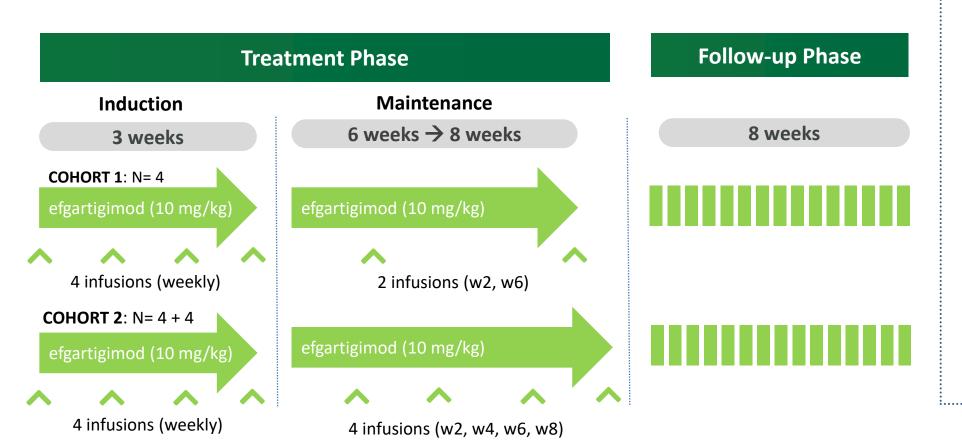


No meaningful anti-drug antibody signals (ADA) reported

## **Pemphigus Vulgaris Phase 2 Adaptive Design**



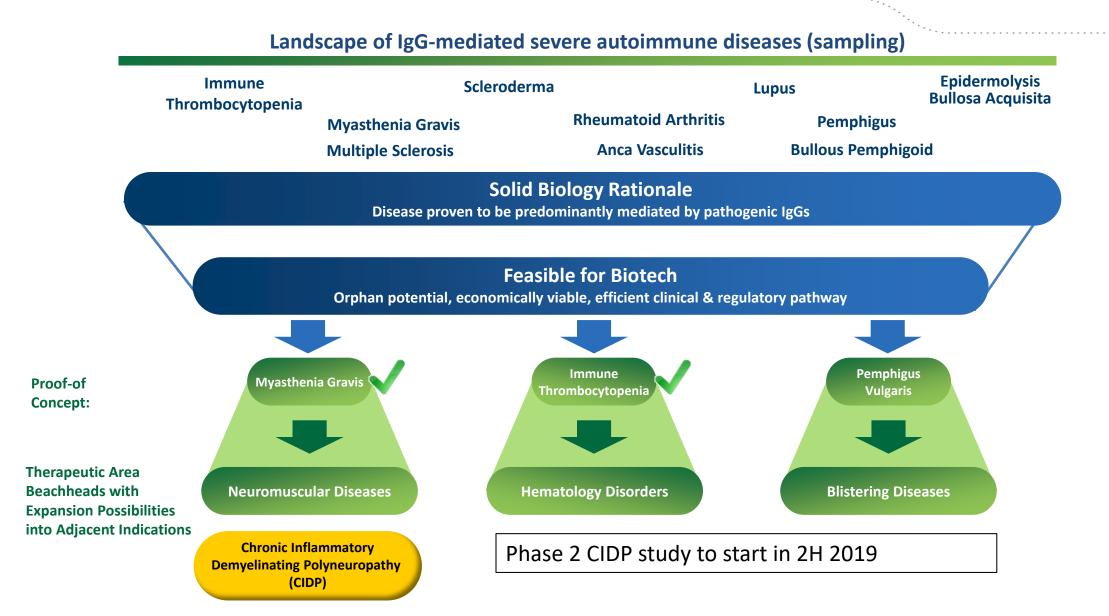
#### Third cohort to start in 1H 2019



IDMC recommendation for Cohort 3 to reach clinical remission (with/without minimal therapy):

- Weekly infusions 25 mg/kg (induction phase) until disease control (DC) with minimum of 5
- Biweekly dosing after DC
- Start maintenance based on DC
- Treatment duration limited to 34 weeks (induction + maintenance)



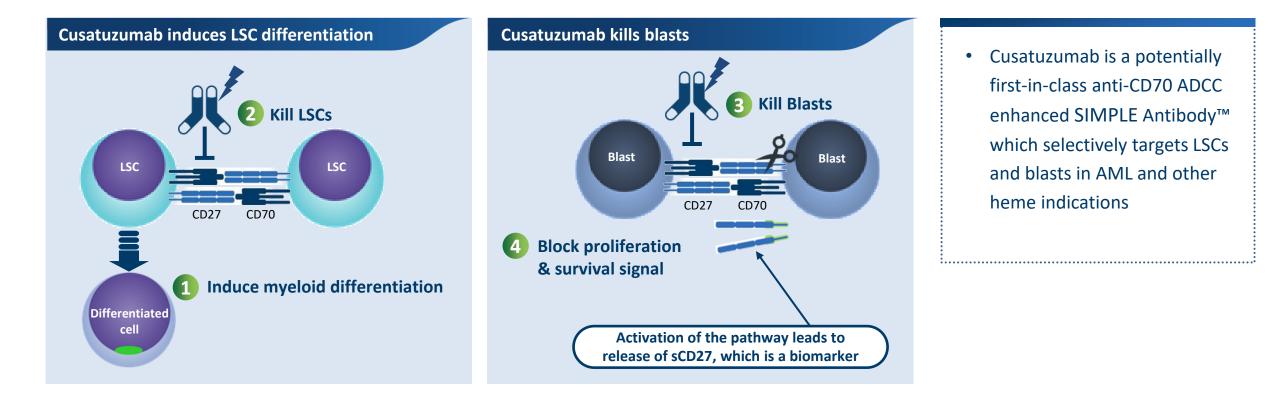




## ARGX-110 (Cusatuzumab): Phase 1 / 2 Mono & Combo Therapy

## **Cusatuzumab Mode-of-Action Targets both Leukemic Stem Cells and Blasts**

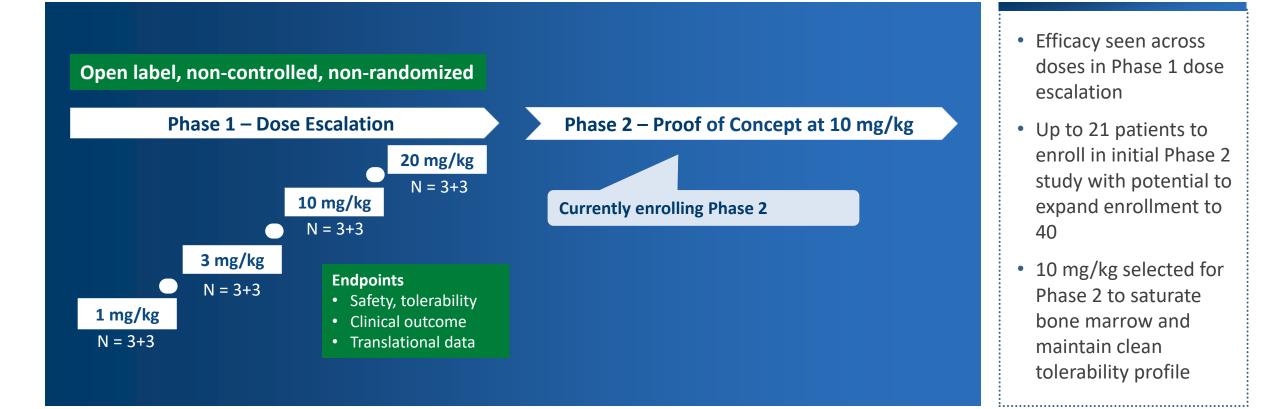




## **Ongoing Phase 1/2 Combination Trial**

Newly diagnosed AML patients unfit for intensive chemotherapy







U

#### Favorable tolerability profile

- No obvious toxicity on top of Vidaza toxicity
- No dose-limiting toxicity observed



#### Encouraging proof-of-biology data in 12 patients (4 dose cohorts; 3 pts each)

- 92% response rate (11/12) mainly CR/CRi
- 3 patients responded after cusatuzumab monotherapy
- Significant blast reduction in bone marrow after cusatuzumab monotherapy
- MRD negativity in 42% (5/12) treated patients

#### Supported by translational dataset

- Decreased sCD27 levels
- Reduced LSC colony formation
- Increased myeloid differentiation asymmetric division

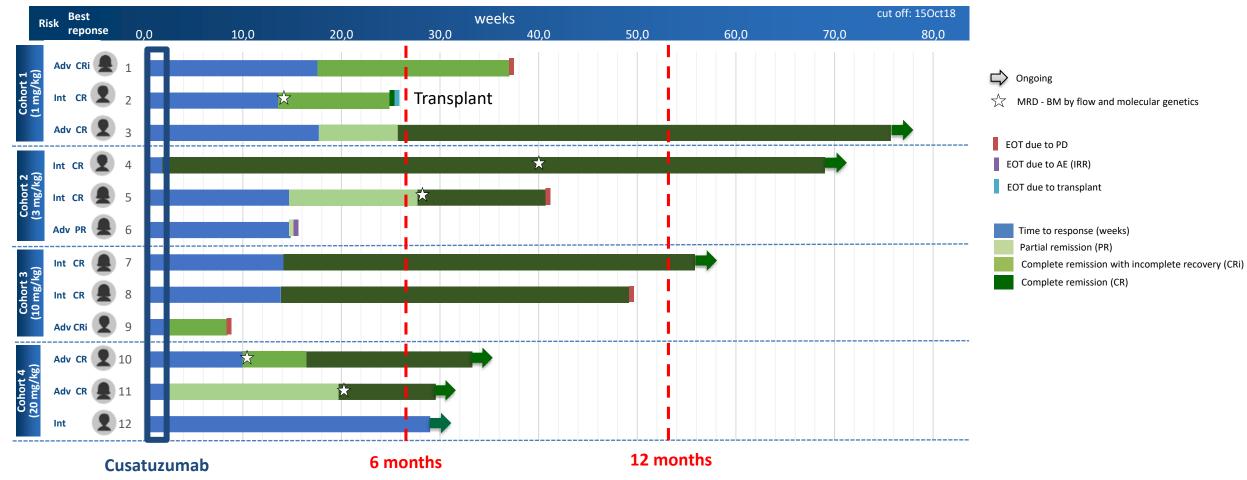


#### Recommended Phase 2 dose: 10 mg/kg

## 92% (11/12) Response Rate – CR/CRi/PR

Three patients on study for more than 12 months





monotherapy



1.500

# Business Development & Financials

.....

## **Cusatuzumab strategic alliance with Janssen Pharmaceuticals** argen Janssen alliance argenx objectives Joint development plan focused on AML, MDS and Accelerate & broaden development plan other heme malignancies Upfront \$ 300m + \$ 200m equity @ 20% premium, Secure strong financials 1.3Bn in milestones, double digit royalties OUS 50 % of US economics on a royalty basis, up to **Retain commercial upside**

50% commercial efforts

"We believe that cusatuzumab can become a foundational therapy for all lines of AML and high-risk MDS." Brian Kenney, J&J spokesperson argenx

abbvie



Strategic Antibody Collaboration Details

• **GARP** is a protein specifically present on

the surface of activated regulatory T-cells

• **AbbVie** exercised option in August 2018 to:

• Obtain exclusive, worldwide license to

develop and commercialize ARGX-115

• Fund further GARP-related research by

argenx can study ARGX-115 in combo with

argenx beyond ARGX-115

its pipeline programs

- **Financial Highlights**
- **\$60mm** received to date
- **\$625mm in potential** development, regulatory and commercial **milestones**
- Tiered royalties on sales at percentages ranging from mid-single digits to low teens
- **Co-promotional** rights for ARGX-115based products in the **European Economic Area and Switzerland**

(Treqs)

## Financial Profile and Investor Composition

Shareholder base > 70% U.S. investors



#### Additional Key Statistics – Sept 30, 2018

- Cash position: €582.3 mm (+ \$500 mm Janssen deal, Dec 2019)
- Capital raised since inception: €730 mm (ex. grants)
  - 2017: raised \$115 mm (€102 mm) in Nasdaq IPO
  - 2017: raised \$266 mm (€226 mm) in public offering
  - 2018: raised \$300 mm (€256 mm) in public offering
- Non-dilutive funding since inception: €104mm (incl. grants)
  - 2018: \$10mm second preclinical milestone AbbVie
- 120 employees & consultants —89 R&D, 31 SG&A

7% 5%
9% 0
Historical shareholders
Free float
Stock options

0. U.S. shareholding expanded above 70%
0. Utstanding shares: 35,934,457

Blue-Chip Investor Base – Sept 30, 2018

### **Key Upcoming Expected Milestones & Communications**



