

Road Show Presentation Jan-Sep 2019



### Forward-looking statement

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### Hansa Biopharma at a glance



#### Company background

- · Founded 2007 with HQ in Lund. Sweden
- Sören Tulstrup, CEO Ulf Wiinberg, Chairman
- 64 employees (~3/4 in R&D) at Sep 30, 2019
- Operations in Sweden, US & Europe
- Market cap: SEK ~6bn (USD ~600m) Oct, 2019
- Listed on Nasdag OMX Stockholm (HSNA)



#### Leader in immunomodulatory enzymes for rare IgG-mediated diseases

- Imlifidase is a unique IgG antibody-cleaving enzyme
- Imlifidase has been studied in five clinical studies and published in peer-reviewed journals (e.g. New England Journal of Medicine and the American Journal of Transplantation)
- If approved, Imlifidase may have the potential to meet a large unmet need and transforming the lives of people with rare disease



#### **Broad pipeline in transplantation and autoimmune diseases**

- Lead indication in kidney transplantation in highly sensitized patients (MAA under review by EMA)
- Anti-GBM antibody disease (Phase 2)
- Antibody mediated kidney transplant rejection (AMR) (Phase 2)
- Guillain-Barré syndrome (Phase 2)
- · NiceR Recurring treatment in autoimmune disease, transplantation and oncology (Preclinical)
- EnzE Cancer immunotherapy (Preclinical)



#### **Key Financials**

Cash position
 Operating Cash Flow
 R&D cost
 Net Profit
 9m'19 SEK -260m
 9m'19 SEK -135m
 9m'19 SEK -249m

...at Hansa Biopharma we envision a world where all patients with rare immunologic diseases can lead long and healthy lives...

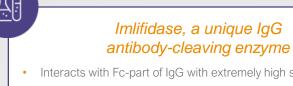


### Imlifidase – a novel approach to eliminate pathogenic IgG

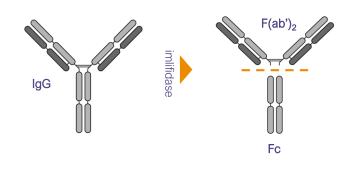
### Origins from Streptococcus pyogenes

- Species of Gram-positive, spherical bacteria in the genus Streptococcus
- Usually known from causing a strep throat infection





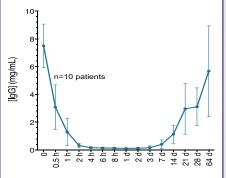
- Interacts with Fc-part of IgG with extremely high specificity
- Cleaves IgG at the hinge region, generating one F(ab')<sub>2</sub> fragment and one homo-dimeric Fc-fragment





### Imlifidase inactivates IgG in 2 hours

- Rapid onset of action that inactivates IgG below detectable level in 2 hours
- IgG antibody-free window for approximately one week





### Hansa Biopharma, a company well positioned for a commercial success



# Imlifidase cleaves IgG antibodies

- Imlifidase is a unique IgG antibody-cleaving enzyme studied in five clinical studies.
- By removing the immunological barrier, imlifidase has the potential to enable kidney transplantation in highly sensitized patients



# Potentially addressing a clear unmet need

- Patients may become sensitized after losing a first transplant or being exposed to foreign tissues through blood transfusion or pregnancy.
- Such sensitized patients account for roughly 30% of people on the kidney waiting lists.



# A company well positioned for commercial success

- Hansa Biopharma is establishing its own commercial and medical organization in EU and the US.
   Outside these core markets we will seek commercial partnerships.
- Hansa Biopharma has a broad patent coverage throughout 2035 in key markets and orphan drug designation in EU and US for imlifidase in kidney transplantation.

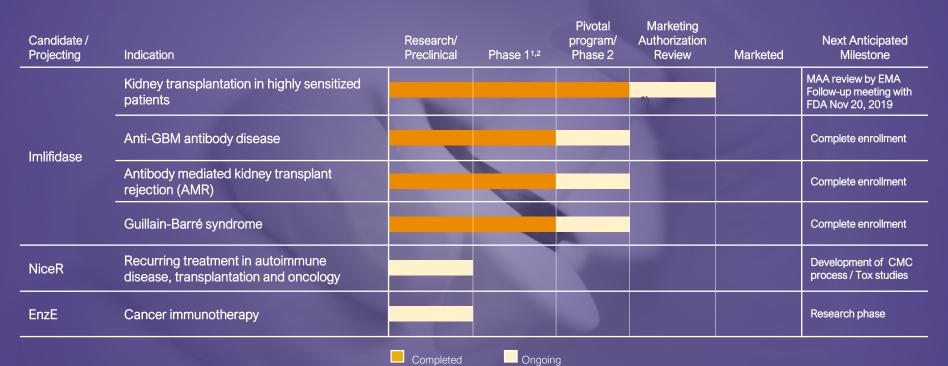


### Rich pipeline

- We are leveraging our proprietary immuno-modulatory enzyme platform in phase 2 clinical studies in rare autoimmune indications incl:
  - Anti-GBM (Goodpasture's)
  - Guillain-Barré syndrome
  - Acute AMR post transplantation



### Broad pipeline in transplantation and auto-immune diseases



<sup>&</sup>lt;sup>1</sup> Results from the Phase 1 study have been published, Winstedt el al. (2015) PLOS ONE 10(7)

<sup>\*)</sup> EMA: In imlifidase for kidney transplantation we have filed for conditional approval after completion of phase 2. A confirmatory study would need to be executed in case of approval.

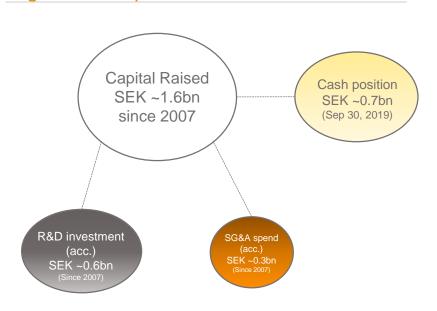




<sup>&</sup>lt;sup>2</sup> Kidney transplantation in highly sensitized patients" with reference to "Results from Phase 2 studies have been published in N Engl J Med 2017; 377:442-453 and in Am J Transplant. 2018 Nov;18(11):2752-2762.

# Hansa Biopharma is financed through 2020

### Significant capital raised since 2007



# Solid cash position end of September 2019

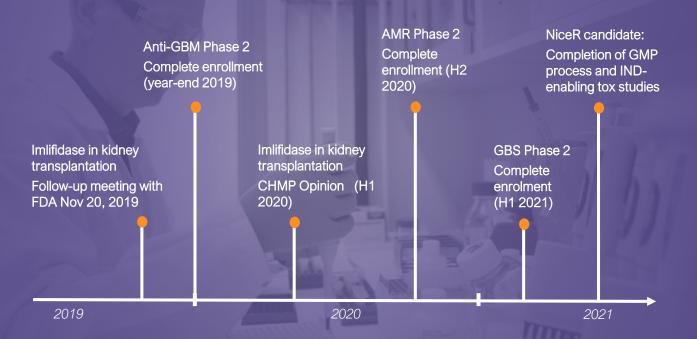


■ Net loss

Operating Cash Flow

■ Cash position

# Upcoming milestones







# Imlifidase enabled kidney transplantation in highly sensitized patients

### Pooled analysis of four Phase 2 trials presented

- Analysis included 46 patients
  - 50% had a cPRA of 100% (Average 99%)
  - 85% were crossmatch positive
  - 70% were retransplanted
- Donor Specific Antibody (DSA) levels rapidly decreased and all crossmatches were converted to negative, thus enabling transplantation in all patients
- At study completion, all patients alive and graft survival at 94% six months post transplantation.









# Regulatory review with EMA is progressing as expected

### Imlifidase in kidney transplantation

### Europe (EMA)

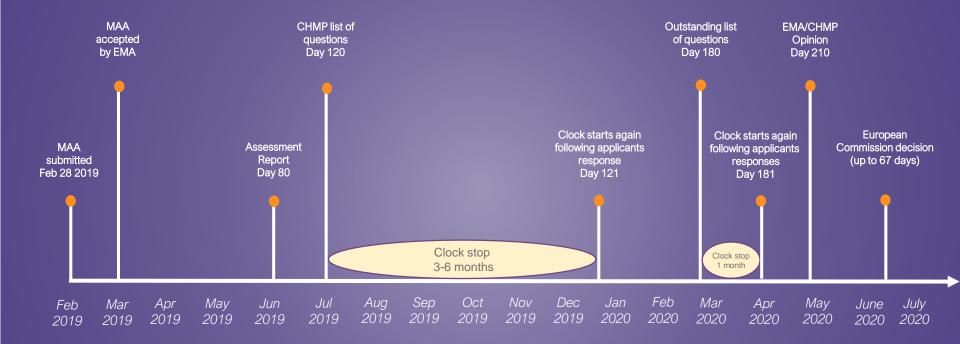
- MAA for imlifidase accepted end of Feb'19; regulatory review progressing as expected
- Opinion from Committee for Medicinal Products for Human Use (CHMP) expected during the first half of 2020
- Decision by European Commission expected June/July 2020

### U.S. (FDA)

- Follow-up meeting with the U.S. Food and Drug Administration scheduled for November 20, 2019 to discuss regulatory path forward in the U.S.
- Minutes from the meeting is expected by end of December



### The EMA process towards marketing authorization

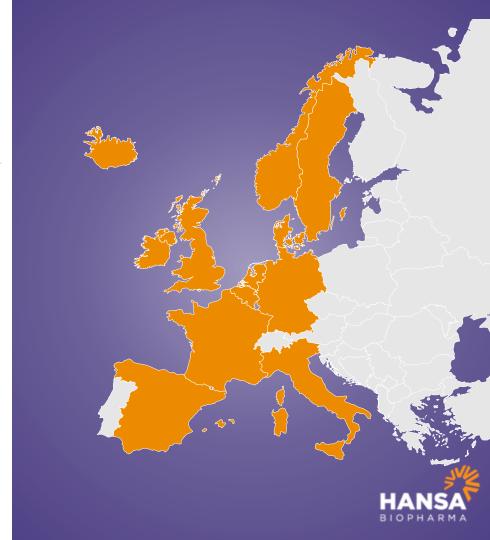




# Focused launch strategy optimizes patient access to imlifidase

### Strong outreach with limited footprint in EU

- Building awareness through MSL and Patient Advocacy
  - MSL organization established in key markets
  - MSLs educate KOLs and physicians at transplantation clinics
  - Reaching out to healthcare providers through Patient Advocacy
- A sequenced and focused launch strategy
  - In EU5, 70-80% of all kidney transplantations are performed at 15-20 centers in each EU5 country
  - Potential Initial launch in early launch countries in the second half of 2020 followed by second wave launch countries



# High unmet medical need in spite of updated Kidney Allocation System

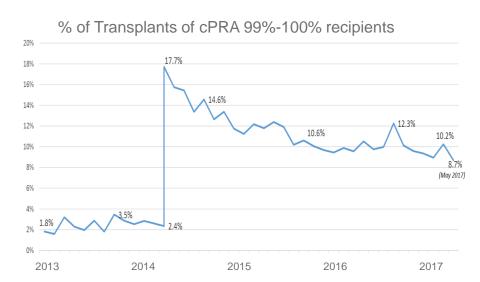
### Imlifidase may potentially complement KAS

- The Kidney Allocation System (KAS) in U.S. was updated in 2014 to prioritize national allocation for highly sensitized patients
- Implementation initially resulted in a bolus effect; however a group of highly sensitized patients are still not helped due to lack of matched organs
- If approved, imlifidase may potentially complement allocation systems like KAS and Euro-transplant and reduce time to transplant in highly sensitized patients

"We thought the KAS would be very good, but the experience was different. I don't think you can have a bureaucratic solution for an immunologic problem, we have to face that we do need drugs to deal not only with acute antibodies but also with the rebound."

Stanley Jordan M.D., Director Kidney Transplantation and Transplant Immunology at the Cedars-Sinai Medical Center in LA.

# Significant number of highly sensitized patients remains on the waiting list post KAS





Source: OPTN/UNOS Darren Stewart, MS, UNOS Research Department

# Completed and ongoing studies with imlifidase in kidney transplantation

STUDY	SUBJECTS/ COUNTRY	CLINICAL TRIALS.GOV ID	STUDY DESIGN	PRIMARY ENDPOINT	SECONDARY ENDPOINTS	STATUS	PUBLICATION
Study 01 Phase 1	29 subjects	NCT01802697 (2013/2014)	Randomized placebo-controlled dose- escalation study with 29 (20 active plus 9 placebo) healthy subjects	Safety and tolerability	Efficacy in IgG cleavage, the pharmacokinetics (PK) and immunogenicity of imlifidase	Complete	PLOS ONE (2015) <sup>1</sup>
Study 02 Phase 2	8 subjects	NCT02224820	Single-center, single-arm, open-label	Dosing resulting in HLA-antibody reduction (MFI<1100)	Efficacy: HLA antibody reduction acceptable for transplantation (MFI <1100 as measured in SAB assay)	Complete	Lorant et al (2018) American Journal of Transplantation <sup>2</sup>
Study 03 Phase 2	10 subjects	NCT02475551	Single-center, single-arm, open-label     No prior desensitization	Safety: AEs, clinical laboratory tests, vital signs, ECGs	Efficacy: HLA antibody reduction acceptable for transplantation (MFI <1100 as measured in SAB assay)	Complete	The New England Journal of Medicine (2017) <sup>3</sup>
Study 04 Phase 2	17 subjects	NCT024226684	Investigator initiated study, Single-center, single-arm, open-label     All patients had prior desensitization with IVIG and/or plasmapheresis	Assessment of efficacy in eliminating DSAs in DSA and flow cytometry positive, highly sensitized patients     Assessment of safety     Assessment of efficacy and kidney function	Serum creatinine (0-6 months)     Proteinuria (0-6 months)     DSA at multiple timepoints posttransplant (day 0, D30, D90, D180)	Complete	The New England Journal of Medicine (2017) <sup>3</sup>
Study 06 "Highdes" Phase 2	18 subjects	NCT02790437	Multicenter, multinational, single-arm, open- label Included pts who may have had prior unsuccessful desensitization or pts in whom it was unlikely to be effective	Crossmatch conversion in DSA+ patients who have a positive XM test to their available LD or DD	DSA reduction at multiple timepoints (2, 6, 24, 48 h after imlifidase) Time to create negative CDC XM test and/or flow cytometry (FACS) XM test Safety	Complete	Annals of Surgery (Lonze et al, only New York patients) Montgomery et al ATC abstract (2019) <sup>4</sup>
Long-term follow-up study	Up to 46 subjects	NCT03611621	A prospective, observational long-term follow-up study of patients treated with imlifidase prior to kidney transplantation	Long-term graft survival in patients who have undergone kidney transplantation after imlifidase administration	Patient survival, kidney function, comorbidity, treatments and quality of life     Safety     DSA	Ongoing	

<sup>&</sup>lt;sup>1</sup> Winstedt el al., "Complete Removal of Extracellular IgG Antibodies in a Randomized Dose Escalation Phase I Study with the Bacterial Enzyme IdeS – A Novel Therapeutic Opportunity", PLOS ONE 2015, 10(7) <sup>2</sup> Lorant et al., "Safety, immunogenicity, pharmacokinetics and efficacy of degradation of anti-HLA antibodies by IdeS (imlifidase) in chronic kidney disease patients" Am J Transplant. 2018 Nov;18(11):2752-2762

Immunogenicity



Lorant et al., "Safety, immunogenicity, pharmacokinetics and efficacy of degradation of anti-HLA antibodies by IdeS (imlifidase) in chronic kidney disease patients" Am J Transplant. 2018 Nov;18(11):2752-27 Jordan et al., "IgG Endopeptidase in Highly Sensitized Patients Undergoing Transplantation", N Engl J Med 2017;377:442-53.

<sup>4</sup> Montgomery et al., "Safety And Efficacy Of Imilifidase In Highly-sensitized Kidney Transplant Patients: Results From A Phase 2 Study" ATC Abstract, 2019

### First patient treated in AMR; 11 patients enrolled in Anti-GBM

### Solid progress in our pipeline over 9 months

### Anti-Glomerular Basement Membrane Disease (Anti-GBM)

 11 patients enrolled out of targeted 15. Additional sites have been added to complete the enrollment by year-end

### Antibody Mediated Rejection (AMR) in kidney transplant

- First patient treated with imlifidase in our AMR Phase 2 study
- The study is designed to evaluate the safety and efficacy of imlifidase in eliminating donor specific antibodies (DSAs) in the treatment of episodes of acute AMR

#### Guillain-Barré Syndrome (GBS)

- Recruitment process initiated in our GBS Phase 2 study; enrolling up to 30 patients at ten clinics in the EU
- The study is designed to evaluate the safety, tolerability and efficacy
  of imlifidase in GBS patients in combination with standard-of-care
  intravenous immunoglobulin (IVIg)

#### NiceR

 Lead candidate selected. Development of a GMP process ongoing as well as preparations for toxicology studies

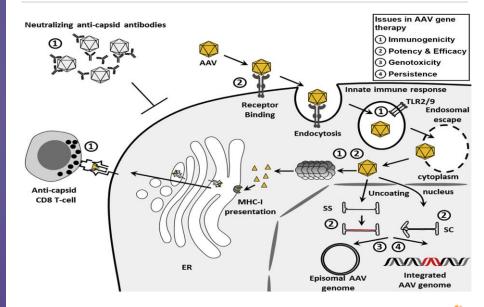


# Exploring imlifidase in gene therapy as a potential pre-treatment to neutralize antibodies (Nabs)

### Nabs are immunological barriers in gene therapy

- Gene therapy programs may exclude up to 40% of patients from clinical studies and approved treatments due to presence of neutralizing antibodies<sup>1</sup>
- Most gene programs use viral vectors originating from Adeno-Associated Viruses (AAV) for gene insertions in vivo; however in many cases the human immune system have developed preformed neutralizing anti-AAV that prevents effective and safe use
- Today experimental protocols are used based on plasma-pheresis, or with immunosuppressants; however these protocols protocols have not demonstrated sufficient efficacy and safety
- 187 in vivo programs are ongoing in gene therapy including 73 clinical stage programs, while two in vivo gene therapy products have been approved by FDA (Luxturna from Spark Therapeutics and Zolgensma from Novartis)

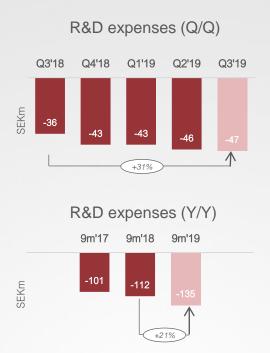
### Idea is to enable gene therapy despite Nabs





# SG&A and R&D spending increase with commercial preparation and pipeline advancement



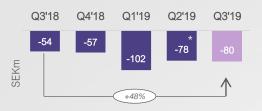




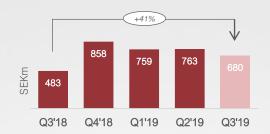


# Cash flow follows increased activity level; Cash position stood at SEK 680m (~USD 70m) end of September 2019

### Operating cash flow (Q/Q)



### Cash & short term investments (Q/Q)



### Number of employees (Q/Q)



### Operating cash flow (Y/Y)



### Shareholders equity (Q/Q)







Appendix

Road Show Presentation Jan-Sep 2019

### Contact our Investor Relations and Corporate Communications team







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### Calendar

Apr 28, 2020

Visit our new web site

Oct 31, 2019	Interim report Jan – Sep 2019
Nov 4-7, 2019	NDRS MorganStanley, US
Nov 12, 2019	Bryan Garnier Healthcare Conference, Paris
Nov 14-15, 2019	NDRS Kempen, Amsterdam and Zurich
Nov 15, 2019	NDRS Carnegie, Stockholm
Nov 19, 2019	Redeye Lifescience Conference, Stockholm
Nov 20, 2019	Jefferies Global Healthcare Conference, London
Dec 4, 2019	Evercore Annual Health CONx Conf, Boston
Dec 5, 2019	DNB Nordic-American Life Science Conf, NYC
Jan 8, 2020	SEB Nordic Seminar, Copenhagen
Jan 12-15, 2020	JPM Week, San Francisco
Feb 6, 2020	Interim Report Oct-Dec 2019
Mar 4, 2020	Carnegie Nordic Healthcare Seminar, Stockholm
Apr 2, 2020	Annual Report 2019

Interim Report Jan-Mar 2020

