

Forward-looking statement

This presentation may contain certain forward-looking statements and forecasts based on uncertainty, since they relate to events and depend on circumstances that will occur in the future and which, by their nature, will have an impact on Hansa Biopharma's business, financial condition and results of operations. The terms "anticipates", "assumes", "believes", "can", "could", "estimates", "expects", "forecasts", "intends", "may", "might", "plans", "should", "projects", "will", "would" or, in each case, their negative, or other variations or comparable terminology are used to identify forward-looking statement. There are a number of factors that could cause actual results and developments to differ materially from those expressed or implied in a forward-looking statement or affect the extent to which a particular projection is realized. Factors that could cause these differences include, but are not limited to, implementation of Hansa Biopharma's strategy and its ability to further grow, risks associated with the development and/or approval of Hansa Biopharma's products candidates, ongoing clinical trials and expected trial results, the ability to commercialize imlifidase, technology changes and new products in Hansa Biopharma's potential market and industry, the ability to develop new products and enhance existing products, the impact of competition, changes in general economy and industry conditions and legislative, regulatory and political factors.

No assurance can be given that such expectations will prove to have been correct. Hansa Biopharma disclaims any obligation to update or revise any forward-looking statements, whether as a result of new information, future events or otherwise.





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Q4'19 Business Update

Solid pipeline advancement. Clear regulatory path in the US; EMA process on track

Highlights for the fourth quarter 2019

- Hansa Biopharma's transformation into a commercial-stage biopharmaceutical company continues according to plan
- Imlifidase in kidney transplantation
 - EMA process on track with Day 120 responses submitted; CHMP opinion expected in the second quarter of 2020
 - Agreement on a clear regulatory path with the FDA. Hansa to conduct a randomized, controlled clinical study in a welldefined population with the highest unmet medical in the context of the US Kidney Allocation System
- Solid pipeline advancements
 - Enrollment in the investigator initiated anti-GBM study completed;
 Completion marks an important milestone for the Company's advancement into auto-immune diseases
 - First two patients treated in GBS; Enrollment progressing in AMR
- CSO, Christian Kjellman to also assume COO role to lead a focused and integrated launch strategy targeting leading transplantation centers in Europe
- Cash position stood at SEK 601m (~USD 60m) end of Dec 2019;
 Hansa Biopharma is financed into 2021



EMA review process on track; Agreement with the FDA on a clear regulatory path forward in the US

Imlifidase in kidney transplantation

Europe (EMA)

- Regulatory review process progressing as expected; Day 120 answers submitted on December 20, 2019
- Opinion from Committee for Medicinal Products for Human Use (CHMP) expected during the second quarter of 2020
- Decision by European Commission expected during the summer of 2020

U.S. (FDA)

- Agreement with FDA to conduct a randomized, controlled clinical study in approximately 50 highly sensitized kidney patients (≥ 99.9% cPRA) using eGFR (kidney function) after 12 months as a surrogate endpoint
- Results from this clinical study could support BLA submission by 2023 under the accelerated approval pathway



Focused launch strategy targeting leading kidney transplantation centers to ensure positive experience

Potential EU launch under conditional approval

- A sequenced and focused strategy to launch imlifidase
 - · Well defined and concentrated target audience
 - Center-focused launch strategy targeting leading clinics with the potential to become early adopters
 - Key to secure early positive experience in right patients; sales ramp-up as leading centers and clinicians gain experience
- Building awareness and Key Opinion Leader advocacy through Medical Science Liaisons (MSLs) in key European markets
- Post-approval study to be initiated following potential marketing authorization - an opportunity to generate relevant experience and broaden out the experience with imlifidase

EU launch will focus on leading transplantation centers



Enrollment in Anti-GBM completed; First two patients treated in GBS and AMR respectively

Ongoing studies evaluating safety and efficacy

Enrollment



Anti-GBM (investigator-initiated study)

- 15/15 patients enrolled in anti-GBM across 5 European countries
- First data read-out expected in Q3 2020



Antibody Mediated Rejection

- 2/30 patients treated with imlifidase in AMR. 6/8 sites have been initiated to recruit patients in the US, Europe and Australia
- Enrollment expected to be completed H2 2020



Guillain-Barré Syndrome

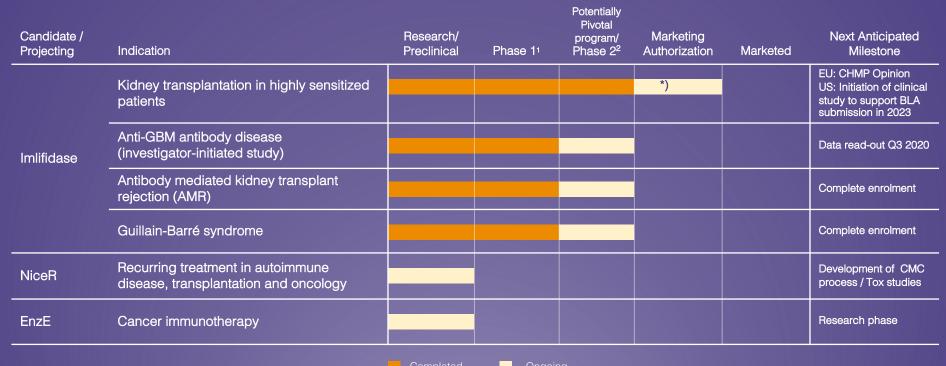
- 2/30 patients enrolled. 6/10 sites are recruiting patients across France, UK and the Netherlands
- Enrollment expected to be completed in H1 2021



Patients left

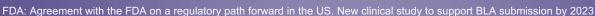


Broad pipeline in transplantation and auto-immune diseases



¹ Results from the Phase 1 study have been published, Winstedt el al. (2015) PLOS ONE 10(7).

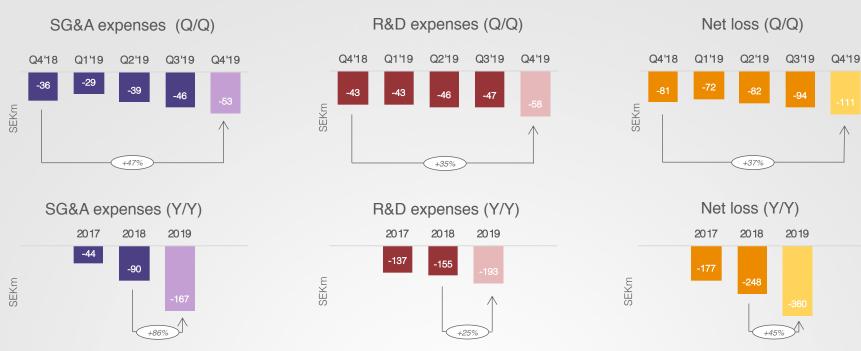
^{*)} EMA: In imlifidase for kidney transplantation we have filed for conditional approval after completion of phase 2. A post-approval study would need to be executed in case of approval.





² Lorant et al American Journal of Transplantation and 03+04 studies (Jordan et al New England Journal of Medicine)

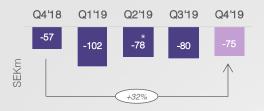
SG&A and R&D spending increase in preparation for potential conditional approval in EU and pipeline advancement





Cash position stood at SEK 601m (~USD 60m) at year-end 2019; Hansa Biopharma is financed into 2021

Operating cash flow (Q/Q)



Cash & short term investments (Q/Q)



Number of employees (Q/Q)



Operating cash flow (Y/Y)

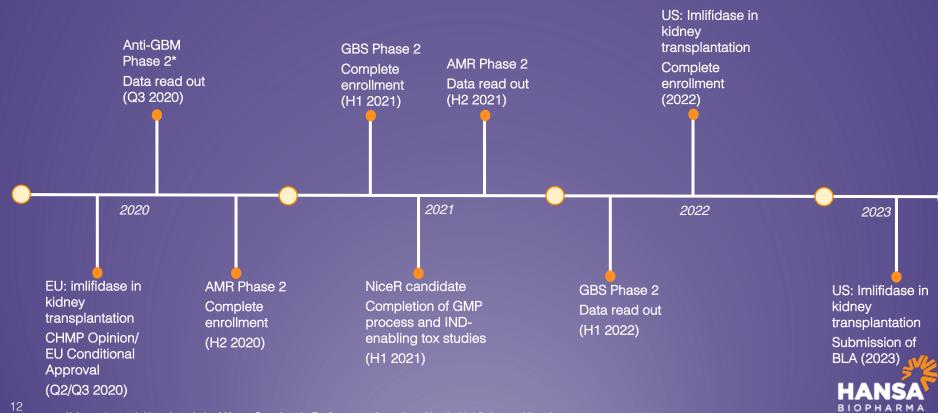


Shareholders equity (Q/Q)





Upcoming milestones





Hansa Biopharma at a glance



Company background

- · Founded 2007 with HQ in Lund. Sweden
- Sören Tulstrup, CEO Ulf Wiinberg, Chairman
- ~74 employees (~3/4 in R&D) at Dec 31, 2019
- · Operations in Sweden, US & Europe
- Market cap: SEK ~3.5bn (USD ~350m) Dec 31, 2019
- · Listed on Nasdag OMX Stockholm (HNSA)



Leader in immunomodulatory enzymes for rare IgG-mediated diseases

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



Broad pipeline in transplantation and autoimmune diseases

- Lead indication in kidney transplantation in highly sensitized patients
 (EU: CHMP Opinion US: Initiation of clinical study to support BLA submission in 2023)
- 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
 Q4'19* SEK 601m
 FY'19* SEK 601m
 R&D expenses
 Q4'19* SEK -58m
 FY'19* SEK -193m
 Operating Profits/Loss
 Q4'19* SEK -110m
 FY'19* SEK -360m
 Operating cash flow
 Q4'19* SEK -75m
 FY'19* SEK -335m

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

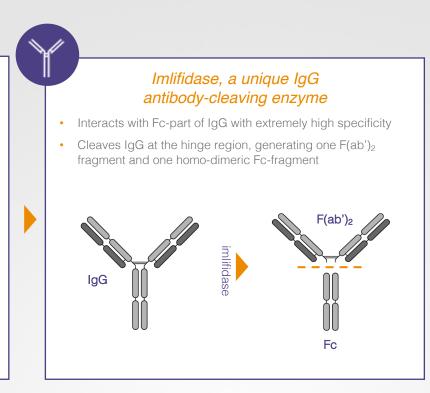


Imlifidase – a novel approach to eliminate pathogenic IgG

Origins from Streptococcus pyogenes

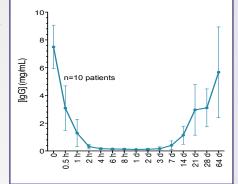
- Species of Gram-positive, spherical bacteria in the genus Streptococcus
- Usually known from causing a strep throat infection







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





Our Equity Story



Targeting rare diseases with a high unmet medical need

 Imlifidase is a unique IgG antibody-cleaving enzyme with a rapid onset of action and high specificity for inactivation of IgG in patients with rare immunologic diseases



Preparing for commercialization

- Preparing for potential launch of imlifidase under conditional approval in core European markets starting in H2 2020. MAA is currently under review by EMA
- Imlifidase to be launched through Hansa's own medical and commercial organization, while the company is expected to pursue a partnership strategy outside core markets
- In the US a clear regulatory path has been agreed with the FDA that support potential submission of a BLA in 2023 under the accelerated approval pathway
- Broad technology protection with patent coverage throughout 2035 in key markets and orphan drug designation in both the US/EU in our lead indications



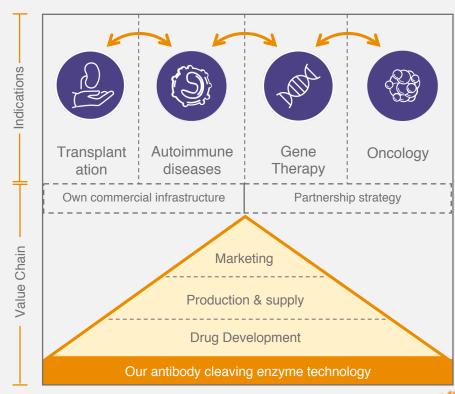
Evolution into a fully integrated biopharmaceutical company

 Controlling the full value chain from early discovery through commercialization to maximize the value creation and capture



Leveraging our proprietary antibody cleaving enzyme technology

- Advancing our pipeline with three phase 2 programs in transplantation and acute autoimmune diseases.
- New set of modified enzymes under development (NiceR program) for repeat dosing; potentially enabling treatment in relapsing diseases and oncology
- Exploring potential combination therapies in oncology with IgG-modulating enzymes and gene therapy in patients with neutralizing antibodies through potential partnerships

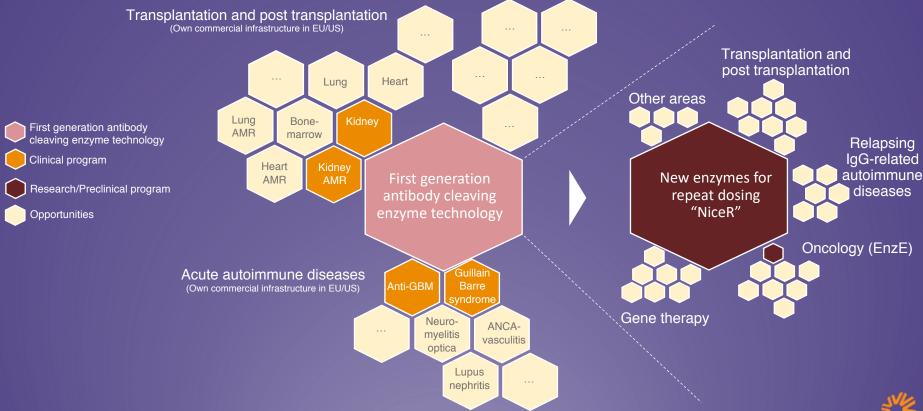




Potential indication universe

Gene therapy pre-treatment

(partnership opportunity)





Our unique enzyme technology platform offers significant potential for growth and expansion

Our strategic priorities



Establish a commercial and medical infrastructure in Europe



Attain marketing authorization in Europe for imlifidase as a treatment for highly sensitized patients to enable kidney transplantation



Investigate the potential of imlifidase in autoimmune indications and post transplantation

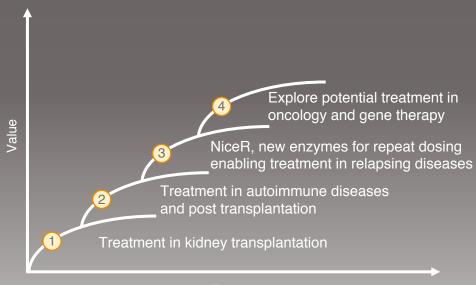


Advance a new set of immunomodulatory enzymes designed for repeat dosing in relapsing diseases (NiceR) into clinical development



Explore potential combination therapies with imlifidase in oncology and in gene therapy

Our road map for growth and expansion



Time



Experienced Board and Executive Committee with many years in the global healthcare industry

Executive Committee



Sören Tulstrup

President & CEO (2018)
+30 years in the Healthcare sector
Ex-CEO at Vifor Pharma
Ex-SVP at Shire Pharmaceuticals
Ex-CEO at Santaris Pharma



Christian Kjellman
SVP & CSO/COO (2008)
+20 years in the Healthcare sector
Ex-Head of Research at Cartela
Ex-Senior Scientist at Biolnvent,
MSc Chemical Biology, PhD in Turnour
Immunology from Lind University



Donato Spota

SVP & CFO (2019)
+20 years in the Healthcare sector
Ex-CFO Basilea Pharmaceutica
Senior Finance roles at Roche



Henk D. van Troostwijk SVP & CCO (2016) +20 years in the Healthcare sector Ex-GM at Raptor Pharmaceuticals Ex-BU Director at Genzyme Europe



Max Sakajja
VP, Corporate Strategy (2017)
Ex-M&A Director at SOBI
Ex-Global Product and Service
Development Manager at Envirotainer
Ex-independent life science industry
management consultant



Anne Säfström Lanner VP, Global HR (2019) Ex-Head of HR European Spallation Source Ex-Head of HR Cellavision

Board of Directors



Ulf Wiinberg
Chairman (2016)
+30 years in the Healthcare sector
Ex-CEO at Lundbeck (2008-14)
Ex-President at Wyeth of the global consumer health care and European Pharma business



Birgit Stattin Norinder
Borad Member (2012)
Ex-CEO and Chairman at Prolifix Ltd.
Ex-SVP, Pharmacia & Upjohn
Member of Hansa Biopharma Scientific
Committee and Remuneration Committee.



Anders Gersel Pedersen Board Member (2018) +30 years in the Healthcare sector Ex-EVP R&D H.Lundbeck Chairman of Hansa Biopharma's Scientific Committee.



Eva Nilsagård

Board Member (2019)

interim CFO at OptiGroup AB

CEO of Nilsagård Consulting AB

Ex-CFO of Vitrolife and Plasta

Chairman of Hansa Biooharma's

Audit Committee.



Mats Blom

Board Member (2019)

CFO of NorthSea Therapeutics
Ex-CFO Zealand Pharma
Member of Hansa Biopharma's Audit
Committee



Andreas Eggert

Board Member (2018)

Ex-SVP at H. Lundbeck A/S

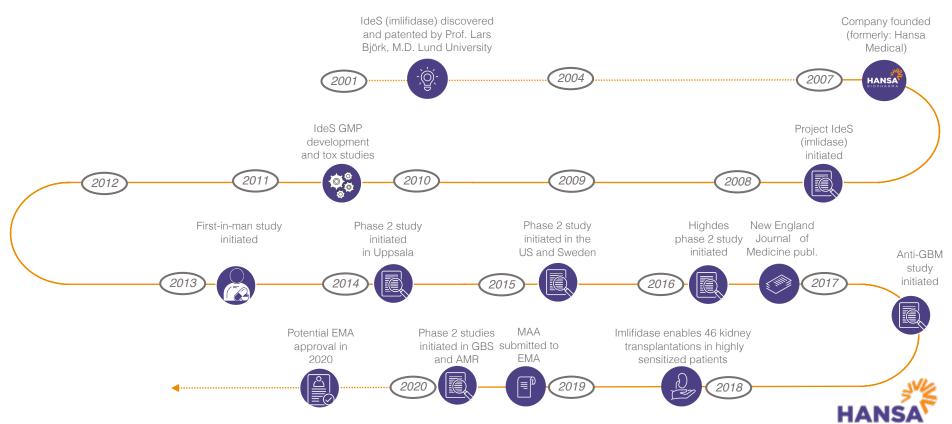
Ex-VP Wyeth/Pfizer in the U.S.

Member of Hansa Biopharma's Audit

Committee and Renumeration Committee.



From technology development to potential commercialisation in 13 years

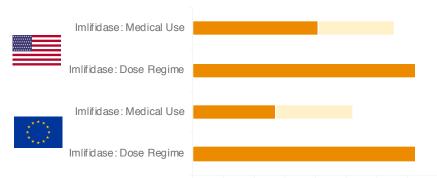


Strong technology protection through patents and orphan drug designation

Patent coverage out to 2035 in key markets

- Hansa Biopharma's portfolio consist of 11 separate patent families incl. 7 patent families in relations to the use of imlifidase (granted/pending)
- · Patents cover use of isolated imlifidase in:





Orphan drug designation

- Orphan drug designation is granted to drugs intended for rare diseases (affecting max 5 patients in 10,000 persons in EU or affecting less than 200,000 patients in the US.
- Designation provides development and commercial incentives incl. 10 years market exclusivity in EU and 7 years in the US

EMA

Orphan drug designation

- Imlifidase for the prevention of graft rejection following solid organ transplantation (2017)
- Imlifidase for the treatment of the rare and acute disease anti-GBM (2018)

FDA

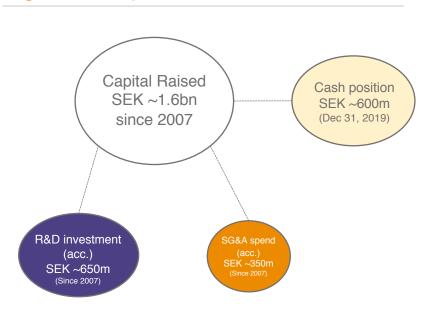
Orphan drug designation

- Imlifidase for the prevention of antibody-mediated organ rejection in solid organ transplantation (2015)
- Imlifidase for the treatment of Guillian-Barré Syndrome (2018)
- Imlifidase for the treatment of the rare and acute disease anti-GBM (2018)

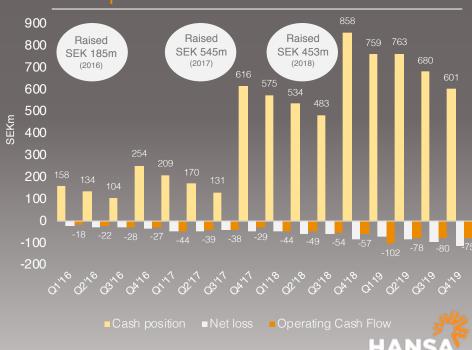


Hansa Biopharma is financed into 2021

Significant capital raised since 2007



Cash position end of December 2019



Ownership in Hansa Biopharma

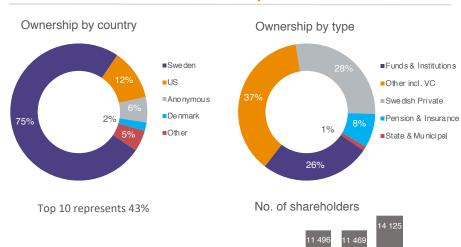
Top 10 ownership as per December 31, 2019

Name	No. of shares	Ownership in pct.
NXT2B	5 755 379	14.4
Invesco	2 116 818	5.3
Thomas Olausson	1 667 654	4.2
Avanza Pension	1 554 486	3.9
Third Swedish National Pension Fund	1 316 470	3.3
Gladiator	1 150 000	2.9
Fourth Swedish National Pension Fund	1 112 044	2.8
Vanguard	930 991	2.3
Swedbank Funds	892 944	2.2
ClearBridge, LLC	691 486	1.7
Other	22 873 835	57.0
Outstanding A shares in total	40 026 107	100.0

Classification of ownership

43%
Top 10 owners

Other



2015

2016

2017

2018

2019

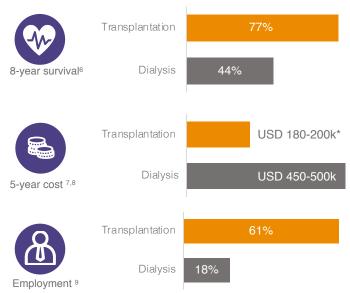


Kidney transplantation saves lives, reduce costs and increase quality of life incl. societal gains for the society

Several complications and risks with dialysis

- Undergoing dialysis treatment is associated with many complications and side effects incl. cardiovascular diseases¹. In the long term, patients may also eventually lose access to dialysis as a result of failed ports, bad veins, and other factors²
- In general, patients on the kidney transplant waiting list and who are on dialysis have a lower quality of life than non-dialysed patients or patients who have been transplanted³
- First study in Europe on labor market outcomes demonstrates societal gains of enabling transplantation with three times as many transplant patients employed vs. dialysis patients.
- Lastly, extended dialysis is also a high-risk factor for removal from the transplant wait list⁶

Transplantation leads to better outcomes





¹Cozzolino et al., 2018

² Sinnakirouchenan and Holley, 2011 Shenoy, 2017

³ Wyld et al., 2012

⁴ Jarl et al. Transplantation, 2018, 102:1375-1381

⁵ NHS blood and transplant, 2018.

⁶ Orandi et al. N Engl J Med 2016;374:940-50

⁷ www.usrds.org

⁸ Shehata et al, Transfus Med Rev 201, 24 Suppl 1: S7-S27

⁹ Jarl et al. Transplantation, 2018, 102:1375-1381

Imlifidase may enable transplantation in highly sensitized kidney patients

Creating equity for highly sensitized patients

- Allocation systems increase transplantation rates, however the rates for highly sensitized patients are still very low compared with average or non-sensitized patients
- If approved, imlifidase may potentially:
 - Complement allocation systems (e.g. KAS, Euro-transplant) to reduce time to transplant in highly sensitized patients
 - Reduce the need for antibody matching and give sensitized patients access to a larger pool of organs
 - Reduce the risk for co-morbidities and mortality associated with dialysis and waiting time
 - Increase transplant rates in highly sensitized patients
 - Help reduce the number of discarded kidneys (1,000 donated kidneys are discarded in the U.S. alone every year³)



U.S. + EU Kidney Transplant Waitlist Breakdown

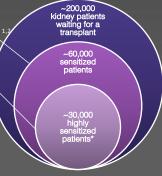
>30% of waitlist patients are sensitized

• 15% moderately sensitized ¹

*Patients with sensitivity above cPRA 80%

Source: The U.S. Department of Health and Human Services and .irodat.org

• 15% highly sensitized1,2 *



~40,000 transplants done annually in the US and EU.



¹ Jordan et al. British Medical Bulletin, 2015, 114:113–125

² Orandi et al. N Engl J Med 2016;374:940-50

³ Organ Procurement and Transplantation Network (OPTN)

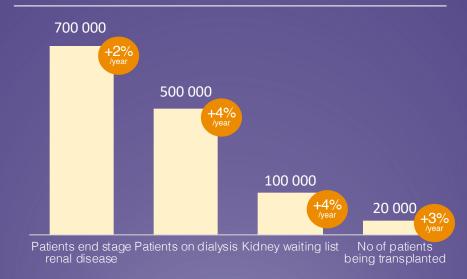
⁴ Jordan et al. British Medical Bulletin, 2015, 114:113-125

New US Kidney Care reform set out to double kidney organ availability and increase transplantation rates by 2030

Chronic kidney disease is major issue in the US

- In the U.S., approximately 37 million people have chronic kidney disease and more than 700,000 have ESRD¹
- There are nearly 100,000 Americans waiting to receive a kidney transplant and roughly 20,000 patients are being transplanted annually
- The U.S. government is estimated to spend more than \$100 billion annually (~ 20% of traditional Medicare) to treat chronic kidney disease and end-stage renal disease²
- The Health and Human Services (HHS) set out three specific goals for ESRD following the executive order³
 - 1) Reducing the number of Americans developing ESRD by 25 percent by 2030
 - 2) Having 80 percent of new ESRD patients in 2025 either receiving a transplant or homecare dialysis
 - 3) Doubling the number of kidneys available for transplant by 2030

Patients in need of kidney transplantation (US)



Source: USRDS Annual Data Report 2016, US HHS Organ Procurement and Transplantation Network Note: 5-year CAGRs (until 2016 for waiting list and transplantations; 2014 for rest). 11 End stage renal disease

HANSA

¹ www.cdc.gov

² https://www.politico.com/story/2019/07/08/trump-kidney-care-market-1573651

³ www.hhc.gov

Approximately 10-15% of patients on wait list are highly sensitized

Highly sensitized patients are difficult to match

Causes of sensitization include





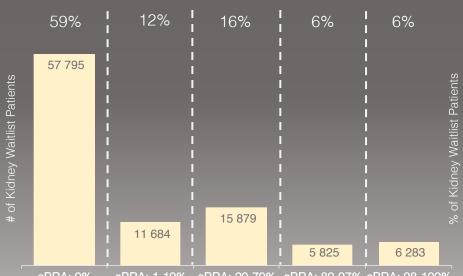


Pregnancy

Blood transfusion

Previous transplantations

- Calculated Panel Reactive Antibodies (cPRA) is a measure for **HLA-sensitization**
- Inability to match or effectively desensitize patients remains a barrier for transplantation in highly sensitized patients
- Allocation Systems such as KAS and Eurotransplant rely on cPRA score to characterize patients for transplant



cPRA: 0% cPRA: 1-19% cPRA: 20-79% cPRA: 80-97% cPRA: 98-100%



High unmet medical need in spite of updated Kidney Allocation System

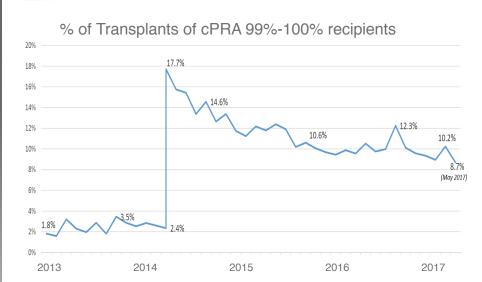
Imlifidase may potentially complement KAS

- 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

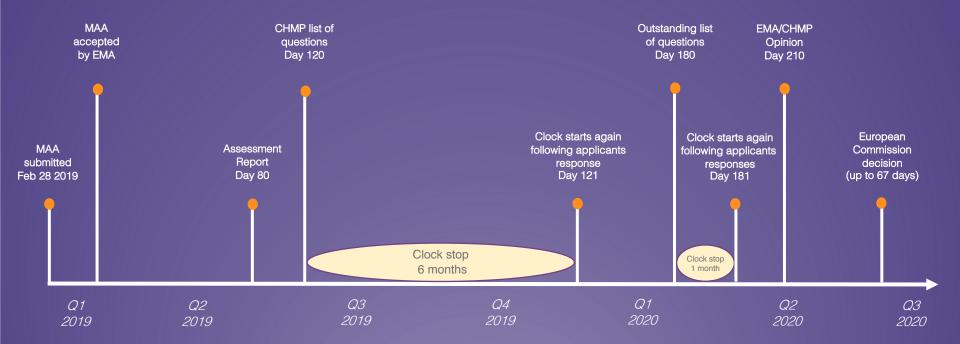




Source: OPTN/UNOS Darren Stewart, MS, UNOS Research Department



The EMA process towards marketing authorization

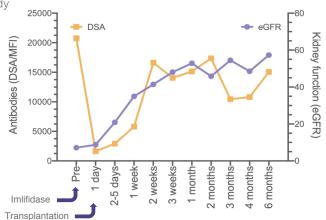




Imlifidase has enabled kidney transplantation in 46 highly sensitized patients

Pooled analysis from four Phase 2 trials

- 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 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. Patients are followed up to five years in a separate study



Study design of our four phase 2 trials

	Subjects	8 patients
Study 02 Phase 2	Design	Single-center, single-arm, open-label
	Main objective	Efficacy defined as Imlifidase dosing scheme resulting in HLA antibody levels acceptable for transplantation, within 24 hours
	Subjects	10 patients
Study 03 Phase 2	Design	Single-center, single-arm, open-label, no prior desensitization
	Main objective	Safety in the transplantation setting and efficacy defined as HLA antibody levels acceptable for transplantation
	Subjects	17 patients
Study 04 Phase 2	Design	Investigator initiated, Single-center, single-arm, open-label. Patients had prior desensitization with IVIG and/or PLEX
	Main objective	Safety in combination with Cedars Sinai's "standard protocol" for desensitization of highly sensitized patient
	Subjects	18 patients
Study 06 Phase 2	Design	Multicenter, multinational, single-arm, open-label
THOOLE	Main objective	Efficacy in creating a negative crossmatch test



NCT01802697 (2013/2014)

SUBJECTS

29 (20 active plus 9 placebo) health subjects (Sweden)

DOSES/FOLLOW UP TIME

The starting dose was 0.01 mg/kg BW and the highest dose group received 0.24 mg/kg BW

MAIN OBJECTTIVES

 The objectives were to assess safety, efficacy in IgG cleavage, pharmacokinetics and immunogenicity of imilifidase following intravenous administrati

STUDY DESIGN

 Randomized placebo-controlled dose-escalation study with 29 (2 active plus 9 placebo) healthy subjects

STATUS

Camalakad

 The 01 study showed complete removal of IgG and that Imlifidas was considered safe to use

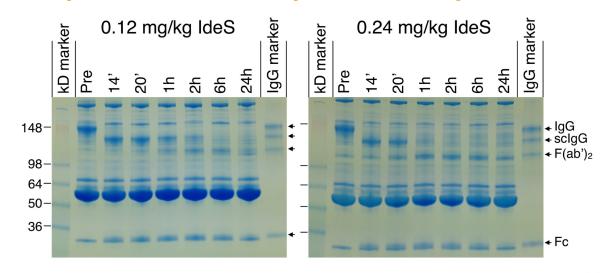
The 01 study showed complete removal of IgG and a good tolerability profile

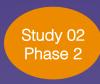
Efficacy

✓ Rapid degradation of IgG in serum in subjects dosed with 0.12 and 0.24 mg/kg imlifidase. Imlifidase had full effect within 6 hours. The entire IgG pool was converted into F(ab')₂ and Fc-fragments. Maximal effect was accomplished 2-6 hours after dosing.

Safety

✓ Newly synthesized intact IgG was clearly detectable in all subjects after 1-2 weeks after dosing. After 3 weeks the level of intact IgG constituted the main IgG fraction in serum





NCT02224820

SUBJECTS

8 Patients with chronic kidney disease (Sweden)

DOSES/FOLLOW UP TIME

0.12 & 0.25 mg/kg BW given once or twice within 48 hours

MAIN OBJECTTIVES

- Efficacy defined as Imlifidase dosing scheme resulting in HLA antibody levels acceptable for transplantation, within 24 hours from dosing
- Safety

STUDY DESIGN

- Single-center, Single arm with
- ascending doses, open-label

STATUS

Completed

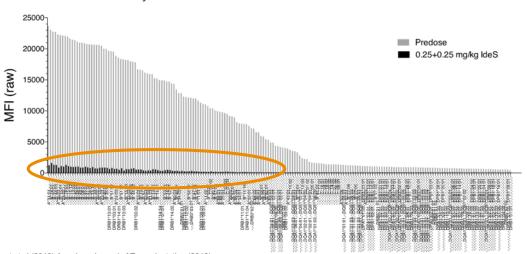
- Primary efficacy endpoint reache
- · Sale allu well toleratet

34

The 02 study showed that 1-2 doses of imlifidase at 0.25 mg/kg BW resulted in HLA antibody levels acceptable for transplantation¹

- ✓ Imlifidase is well tolerated in patients with chronic kidney disease
- Efficacy results strongly support further development in the patient population
- ✓ The first HLA-incompatible transplantation ever after desensitization with imlifidase was performed in one of these patients (2014)

HLA-antibody levels before and after 6 hours treatment with imlifidase



¹ Lorant et al (2018) American Journal of Transplantation (2018)





NCT0247555

SUBJECTS

10 Patients (Sweden)

DOSES/FOLLOW UP TIME

0.25 and 0.50 mg/kg during 180 days

MAIN OBJECTTIVES

- · Safety in the transplantation setting
- Efficacy defined as HLA antibody levels acceptable for transplantation

STUDY DESIGN

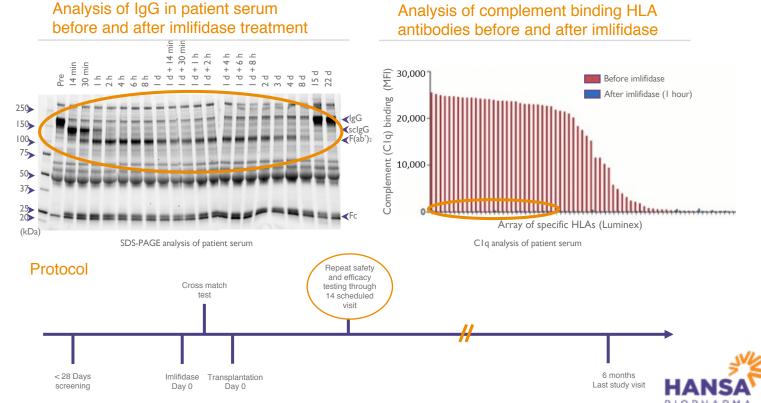
- Single-center, single-arm, openlabel, no prior desensitization
- Similar design as 13-HMedIdeS-0 but transplantation part of protoco
- · In deceased and living donors

STATUS

Completed

 Proofed safety and efficacy with HLA antibodies at acceptable levels; enabling transplantation in all patients

The 03 study proved safety and efficacy with HLA antibodies at acceptable levels; enabling transplantation in all patients





NCT024226684

SUBJECTS

17 Patients (US)

DOSES/FOLLOW UP TIME

0.24 mg/kg 180 days

MAIN OBJECTTIVES

- Safety in combination with Cedars Sinai's "standard protocol" for desensitization of highly sensitized patients
- · Efficacy in preventing AMF

STUDY DESIGN

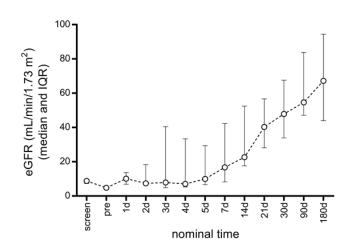
- Investigator initiated study
- Investigator sponsored IND
- Imilitidase to desensitize patients previously treated with rituximate and IVIa
- Deceased donors onl

STATUS

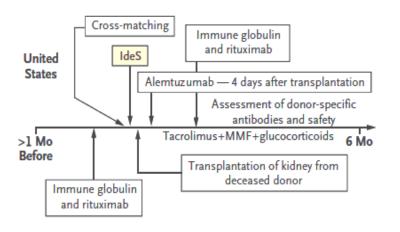
Completed

The 04 study proved safety and efficacy with Cedar Sinai's standard protocol (rituximab and IVIg)

Graft function (eGFR) post six months



Cedar's desensitization protocol in combination with imlifidase







CLINICALTRIALS.GOV ID

NCT02790437

SUBJECTS

18 Patients (US+Sweden+France) 19 safety set, 18 efficacy set

DOSES/FOLLOW UP TIME

0.25 mg/kg 180 days

MAIN OBJECTTIVES

Efficacy in creating a negative crossmatch test

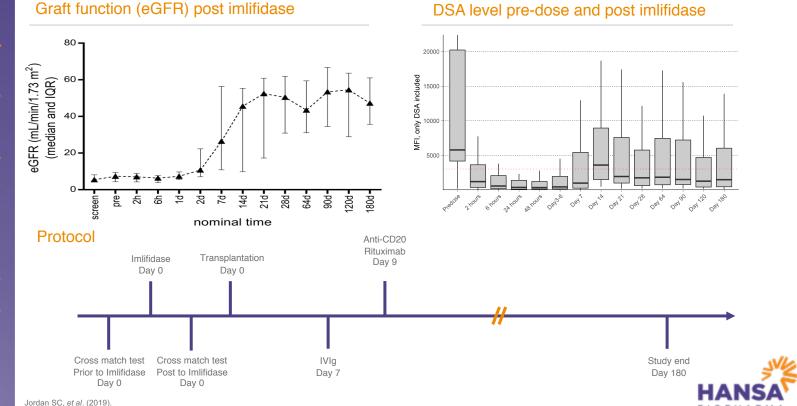
STUDY DESGIN

 Multicenter, multinational, singlearm, open-label Included patients who may have had prior unsuccessful desensitization or patients in whom it was unlikely to be effective

STATUS

Complete

The 06 study showed proved safety and efficacy in making highly sensitized patients eligible for kidney transplantation



Overview of all completed studies with imlifidase in transplantation

STUDY	SUBJECTS/ COUNTRY	STUDY DESIGN	PRIMARY ENDPOINT	SECONDARY ENDPOINTS	STATUS/ PUBLICATION
Study 01 Phase 1	29 subjects	 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) ¹
Study 02 Phase 2	8 subjects	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 ²
Study 03 Phase 2	10 subjects	 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) ³
Study 04 Phase 2	17 subjects	 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/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) ³
Study 06 "Highdes" Phase 2	18 subjects	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) ⁴
Long-term follow-up	Up to 46 subjects	 A prospective, observational long-term follow-up study of patients treated with 	Long-term graft survival in patients who have undergone kidney transplantation	 Patient survival, kidney function, comorbidity, treatments and QoL Safety 	Ongoing

after imlifidase administration

Immunogenicity

Jointain et al., "Selfety And Efficacy Of Imitifidase In Highly Sensitized Kidney Transplant Patients: Results From A Phase 2 Study" ATC Abstract, 2019

imlifidase prior to kidney transplantation

study

¹ 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)

² Lorant et al., "Safety, immunogenicity, pharmacokinetics and efficacy of degradation of anti-HLA antibodies by IdeS (imifidase) in chronic kidney disease patients" Am J Transplant. 2018 Nov;18(11):2752-2762 Jordan et al., "IgG Endopeptidase in Highly Sensitized Patients Undergoing Transplantation", N Engl J Med 2017;377:442-53.

Medical Advisory Board



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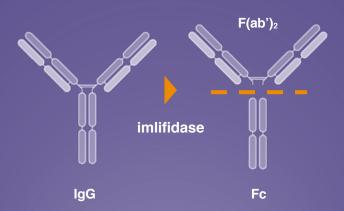




Imlifidase, a novel approach to effectively eliminate pathogenic IgIG

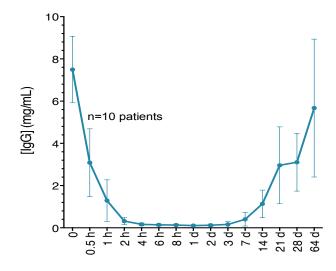
Proven mechanism of action

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



Inactivation of IgG in human serum

- Rapid onset of action that takes down IgG below detectable level in 2 hours post 15 min infusion
- IgG antibody-free window for approximately one week

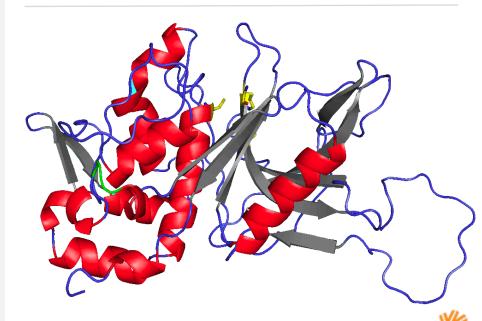


Our IgG antibody-cleaving enzyme

Origins from Streptococcus pyogenes

- Cysteine protease derived from an Immunoglobulin G (IgG)degrading enzyme of Streptococcus pyogenes
- Contains only one cysteine no disulfide bridges
- Monomeric protein with a molecular mass of 35 Kilo Dalton
- Isoelectric point of 6.1
- The coding gene for imlifidase is cloned and expressed in Escherichia coli

Imlifidase consists of 311 amino acids





Imlifidase is a lyophilized product formulation with a shelf life of 12 months at 2-8° Celsius storage

Imlifidase will be infused in 15 minutes

- The product for commercial supply will be a lyophilized (cold chain) powder concentrate (11 mg solution) for infusion currently with a claimed shelf life of 12 months at 2-8°C storage. Ongoing stability studies indicate a shelf life of at least 24 months.
- Each vial is filled with 1.2 mL of a 10 mg/mL solution before freeze drying (=12 mg). Extractable volume after reconstitution with 1.2 mL sterile water is 1.1 mL of 10 mg/mL solution resulting in 11 mg product
- The protein concentration,10 mg/mL, has desirable characteristics with respect to not form aggregates
- Continuous stability programs ongoing to study changes in protein characteristics and performance.
- Imlifidase dose is clinically set to 0.25 mg/kg bodyweight (11 mg / 0.25 mg/kg = 44 kg (BW) / vial content) 2R vial size is suitable for the content





Supply Chain for imlifidase in kidney transplantation



Baxter



Drug product manufacturer (upscaling)



Manufacturing will be done in close collaboration with highly experienced European based third party CMOs

Drug substance production process (API)

Biotechpharma



Fermentation/ harvesting

- Working Cell Bank
- Pre-Cultivation
- Main Cultivation
- Cell Harvest

Protein purification

- · Cell Disruption
- · Protein Release
- Ceramic Hydroxy Apatite Chromatography

Protein purification cont.

Chromatography

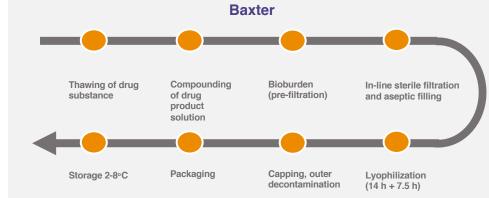
Ion Exchange

- Hydrophobic Interaction Chromatography
- · Ultrafiltration/ Diafiltration

Filling

 Formulation, filtration, filling and storage (-80°C)

Drug product production process (upscaling)





<u>Facts</u>

- Based in Vilnius, Lithuania
- · Start-up Year: 2004
- Capacity: 300 L fermentor (1000 L fermentor in 2020)
- Certifications: GMP compliance, Manufacturing authorization license
- Inspections: National regulatory agency (EU), EU/US customer inspections,
 FDA mock inspection



Facts

1000年7月

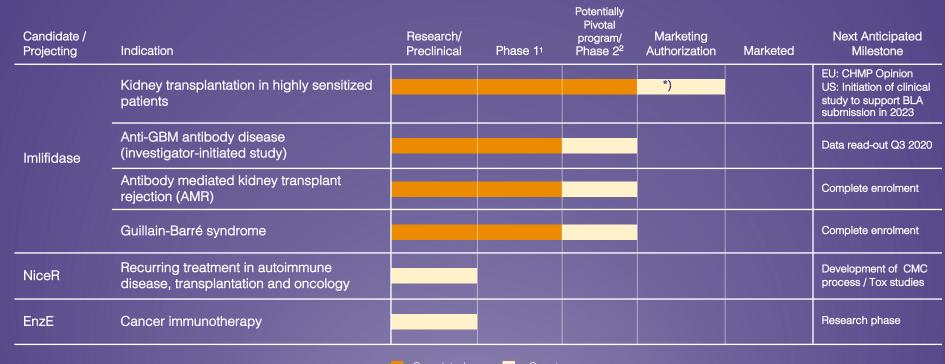
- Based in Halle/Westfalen Germany
- Start-up Year: 2001 (contract manufacturing)
- Capacity: 6-35 L drug product solution per batch (5,000-30,000 vials)
- · Certifications: GMP compliance, Manufacturing authorization license
- Inspections: National regulatory agency (EU), FDA, EU/US customer inspections

HANSA

Clinical development programs

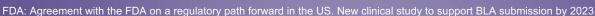


Broad pipeline in transplantation and auto-immune diseases



¹ Results from the Phase 1 study have been published, Winstedt el al. (2015) PLOS ONE 10(7).

^{*)} EMA: In imlifidase for kidney transplantation we have filed for conditional approval after completion of phase 2. A post-approval study would need to be executed in case of approval.





² Lorant et al American Journal of Transplantation and 03+04 studies (Jordan et al New England Journal of Medicine)

Anti-GBM, a rare acute autoimmune disease affecting kidneys and lungs; Enrollment completed in Q1 2020

2/3 of Anti-GBM patients lose kidney function²

- Indication: Antibodies are directed against an antigen intrinsic to the glomerular basement membrane (GBM) causing acute injury of kidney and/or lung
- Anti-GBM affects 1.6 in a million people annually with majority of patients losing their kidney function^{1,2}, requiring chronic dialysis and kidney transplantation.
- The study is an open label investigator-initiated Phase 2 with Professor Mårten Segelmark at Linköping- and Lund University Hospital as the sponsor and principal investigator
- The study is designed to evaluate the safety and tolerability of imlifidase in patients with severe anti-GBM disease on top of standard care consisting of plasmapheresis, steroids and cyclophosphamide.
- 15/15 patients enrolled in anti-GBM across 5 European countries. First data read-out expected in Q3 2020.
- Our Anti-GBM program obtained Orphan Drug designation from both FDA and European Commission (2018)



Anti-GBM Phase 2

CLINICALTRIALS.GOV ID

NCT03157037 (Since March 2017)

SUBJECTS

15 patients targeted. Patients will be monitored for six months Recruitment at 15 clinics

DOSES/FOLLOW UP TIME

Dosage 0.25mg/kg 180 days follow up

MAIN OBJECTTIVES

 Primary objective is to evaluate the safety and tolerability of imlifidase on background of standard of care and assess efficacy based on rena function at six months after treatment

STUDY DESIGN

- Open label, multicenter, single arm Phase 2 study with adverse renal prognosis
- Investigator initiated study

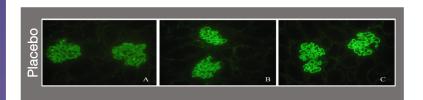
STATUS

Ongoing

49

Favourable pre-clinical studies show that imlifidase degrades IgG bound to the GBM in vivo; preventing renal damage in animals

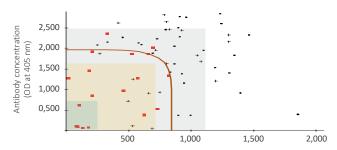
Mouse anti-rabbit IgG (Fc specific)





Anti-GBM creatinine and antibody concentration

 Both creatinine and levels of antibodies predict outcome and we expect that imlifidase can treat the disease by degrading IgG bound to the GBM



Serum creatinine concentration at diagnosis (µmol/l)

Inclusion criteria

Inclusion: Toxic anti-GBM antibodies level as considered by the investigator. eGFR < 15 ml/min/1.73 m2 or if the patient is non-responsive to standard treatment, and has lost >15 ml/min/1.73 m2 after start of treatment

Exclusion: Anuria for more than 2 days (less than 200 ml during last 48 hours); Dialysis dependency for more than 5 days



Yang et al. Favorable pre-clinical studies: "Imlifidase degrades IgG bound to the GBM in vivo, thereby preventing renal damage in this animal model. Nephrology Dialysis Transplantation. 2010;25(8): 2479-86.

Long term graft survival is challenged by antibody mediated rejection post transplantation

There is no approved treatment for AMR

- Active antibody mediated rejection after transplantation occurs in 10-15% of kidney transplants¹ or ~ 3,200^{2,3} new patients annually⁴ and is a significant challenge to long term graft survival
- Today's standard of care include plasma exchange, and treatment with steroid and IVIg. AMR patients not treated successfully risk graft failure, dialysis and return to the waitlist
- The AMR Phase 2 study is a randomized, open-label, multicenter, active control study designed to evaluate the safety and efficacy of imlifidase in eliminating donor specific antibodies (DSAs) in the treatment of active episodes of acute AMR in kidney transplant patients.
- 2/30 patient treated with imlifidase in AMR. 6/8 sites have been initiated to recruit patients in the US, Europe and Australia.
- Enrollment is expected to be completed towards the end of 2020. Data read out expected 2H 2021



¹ Puttarajappa et al., Journal of Transplantation, 2012, Article ID 193724.

² Jordan et al., British Medical Bulletin, 2015, 114:113-125.

³ http://www.irodat.org.

⁴ Seven major markets – US, Germany, UK, France, Spain, Italy, and Japan



New AMR Phase 2 study initiated to test imlifidase ability to reduce the amount of DSA in AMR patients post transplantation

CLINICALTRIALS.GOV ID

NCT03897205 (2019

SUBJECTS

30 patients targeted (20 patients will be treated with imlifidase and 10 with Plasma exchange). Recruitment from 8 sites in the U.S., EU and Australia.

DOSES/FOLLOW UP TIME

1 dose of imlifidase (0.25 mg/kg) o 5-10 sessions of plasma exchange

MAIN OBJECTTIVES

- Imlifidase ability to reduce the amount of DSA in comparison wit plasma exchange in patients who have an active AMR post transplantation
- Ensure safety for patient

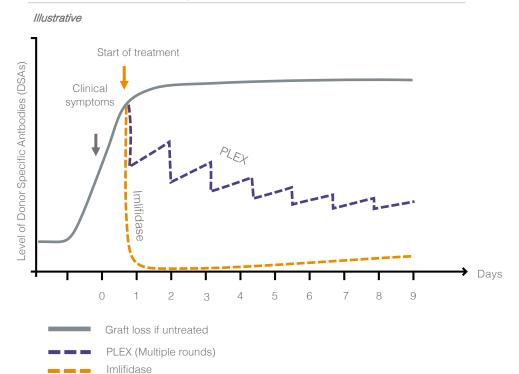
STUDY DESIGN

 Randomized, open-label multicenter, active control study, designed to evaluate the safety an efficacy of imilifidase in eliminating DSA in active AMR

STATUS

Ongoing

Potential of using imlifidase vs. PLEX in AMR



Guillain-Barré syndrome is an acute autoimmune attack on the peripheral nervous system

GBS can affect anyone at any age

- GBS is an acute autoimmune attack on the peripheral nervous system, which rapidly and progressively weakens extremities.
- Only parts of the patients fully recover from GBS, thus a high unmet medical need for new treatments; 40% lose strength and have pain while mortality is 3-7% mortality
- Addressable population of ~ 11,000¹ per year in 7MM²
- Current Standard of Care is treatment with IVIG or PLEX
- The new Phase 2 study is an open-label, single arm, multi-center study evaluating the safety, tolerability and efficacy of imlifidase in GBS patients in combination with standard of care intravenous immunoglobulin (IVIg)
- 2/30 patients enrolled. 6/10 sites are recruiting patients across France, UK and the Netherlands. Enrollment expected to be completed in H1 2021. Data read out expected H1 2022
- In 2018, the FDA granted Orphan Drug Designation to imlifidase for the treatment of GBS



¹ McGrogan et al. Neuroepidemiology 2009;32(2):150-63.

² 7MM = Seven major markets – US, Germany, UK, France, Spain, Italy, and Japan



New Phase 2 study initiated in GBS to evaluate safety, tolerability and efficacy of imlifidase in GBS patients

CLINICALTRIALS.GOV ID

SUBJECTS

DOSES/FOLLOW UP TIME

Dosage 0.25mg/kg follow up 180

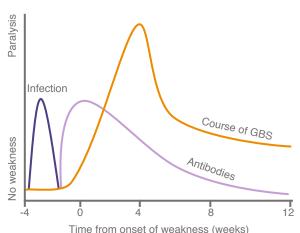
MAIN OBJECTTIVES

STUDY DESIGN

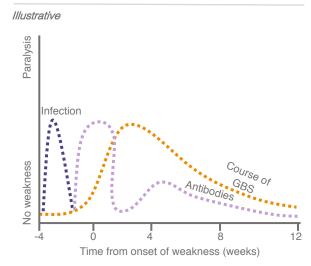
STATUS

Illustrative

Today's Standard of Care IVIg or PLEX



Potential with imlifidase





Pre-clinical programs

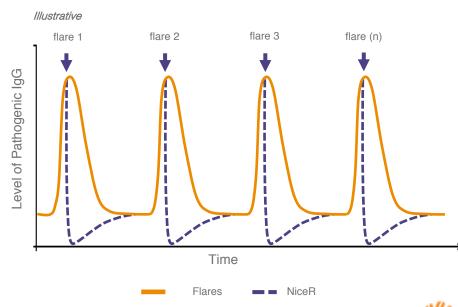


"NiceR" – new set of enzymes for repeat dosing; potentially enabling treatment of relapsing diseases

IgG-cleaving enzyme with lower immunogenicity

- Potential application for a broad array of indications, including reoccurring AMR, relapsing autoimmune diseases and oncology
- The first selected promising new drug candidate from the NiceR program is an IgG-cleaving enzyme (cysteine peptidase) with characteristics based on a homolog to imlifidase, but with lowered immunogenicity.
- Development of a GMP-manufacturing process has been initiated

NiceR can potentially inactivate flares



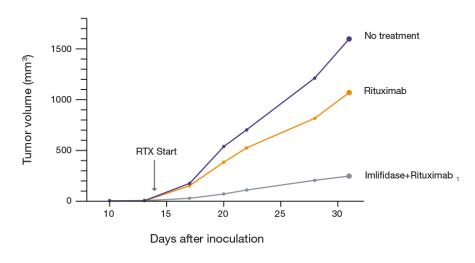


Imlifidase / NiceR can potentially improve the therapeutic effect in oncology (EnzE)

Proof of concept demonstrated in vivo for mice

- Enzyme based antibody enhancement through pre-treatment
- The abundance of normal IgG in blood interferes with therapeutic monoclonal antibodies
- Pre-treatment with imlifidase / NiceR has potential to significantly potentiate antibody-based cancer therapies
- Suppressive effect of IVIg on effector cell function abrogated by imlifidase
- Imlifidase can significantly improve the therapeutic effect of rituximab

Mice with human IgG (~9mg/mL)



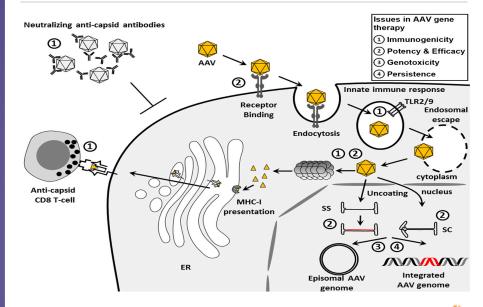
¹ Järnum et al. Mol Cancer Ther 2017;16:1887-1897

Exploring imlifidase in gene therapy as a potential pre-treatment to inactivate neutralizing antibodies

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 antibodies¹
- 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
- 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





Contact our Investor Relations and Corporate Communications team

Visit our web site www.hansabiopharma.com





Klaus Sindahl

Head of Investor Relations

Mobile: +46 (0) 709-298 269

Email: klaus.sindahl@hansabiopharma.com



Rolf Gulliksen

Head of Corporate Communications

Mobile: +46 (0) 733-328 634

Email: rolf.gulliksen@hansabiopharma.com

Calendar

Feb 6, 2020	Interim Report Oct-Dec 2019
Feb 19-20, 2020	Road Show Kempen Paris/Tel Aviv
Feb 27-28, 2020	Road Show Cowen Chicago/Dallas
Mar 2, 2020	Cowen Annual Health Care Conference, Boston
Mar 4, 2020	Road Show New York City
Mar 4, 2020	Carnegie Nordic Healthcare Seminar, Stockholm
Apr 2, 2020	Annual Report 2019
Apr 21-22, 2020	Kempen Life Sciences Conference, Amsterdam
Apr 28, 2020	Interim Report Jan-Mar 2020
May 18, 2020	UBS Global Healthcare Conference, NYC
May 19-20, 2020	RBC Global Healthcare Conference, NYC
May 26, 2020	ABG Life Science Summit, Stockholm
May 27, 2020	Ökonomisk Ugebrev Life Science Conference, Coper

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