GCT
National Strategy
Gene- and Cell-Based Therapies
GeneNovate®

GeneNovate® Startups
Season 2025/26

Empowering Innovators and
Entrepreneurs in Gene and Cell Therapies

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= True Startup idea

FOREWORD

GeneNovate® - Empowering Innovators and Entrepreneurs in Gene and Cell Therapies

Discover and develop your innovation potential with GeneNovate®

Are you a scientist or physician who wants to bring your research to the clinic? GeneNovate® is the first national entrepreneurship program that accompanies you on this path in the world of gene and cell therapies, biotech and medicine. We teach the basics of entrepreneurship and aim to embed a translational mindset early on in academic careers. Research should not change – but how we deal with the results should!

Three advantages of GeneNovate® at a glance

- Knowledge transfer: Interdisciplinary workshops and mentoring help to overcome regulatory and economic hurdles.
- Practical relevance: Direct links and contact with clinical and industrial partners facilitate the path to application.
- Individual support: Each team is supported with tailored resources and coaching.

The GeneNovate® Final Event 2026 brings together innovation and networking: Selected startups pitch to an expert jury, while the public event creates space for exchange and new collaborations within the life sciences and biotech community.

Who can participate?

GeneNovate® is aimed at master's students, doctoral candidates, postdocs, experienced scientists and physicians who want to turn their research into a marketable product or applicable therapy. Don't have a specific idea yet? Apply anyway and join one of the teams before developing your own project.

Our aim

We would like to accompany you on your entrepreneurship journey and help you network. Our goal is to inspire scientists and physicians to become entrepreneurs, equip them with sound knowledge and thus enable innovative medical solutions for patients in the long term. A key strength of the program lies in its collaborative approach, which connects participants at all GeneNovate® locations in Germany. This comprehensive program is offered free of charge.

AGENDA

25th June 2026

Morning Program

Allerheiligen Hofkirche		Max-Joseph-Saal	
Registration	**8:00 - 9:00**	**Registration**	**8:00 - 9:00**
Welcome	**9:00 – 9:05**	**Welcome**	**9:00 – 9:05**
PITCH – Base-edited CAR-T cells	9:05 – 9:16	PITCH – LongCov Diagnostics	9:05 – 9:16
PITCH – BiObservR	9:16 – 9:27	PITCH – HomeGrownLabs	9:16 – 9:27
PITCH – Senova Theranostics	9:27 – 9:38	PITCH – AlzDetect: Early Alzheimer's Detection from Blood	9:27 – 9:38
PITCH – Fluxion	9:38 – 9:49	PITCH – NeoReGenesis	9:38 – 9:49
Break	**9:49 – 10:05**	**Break**	**9:49 – 10:05**
PITCH – NovaSplice	10:05 – 10:16	PITCH – ZELF	10:05 – 10:16
PITCH – NaviLent	10:16 – 10:27	PITCH – TCReNovo	10:16 – 10:27
PITCH – Yulioo Therapeutics	10:27 – 10:38	PITCH – NMJCare	10:27 – 10:38
Break	**10:38 – 11:15**	**Break**	**10:38 – 11:15**
PITCH – VULNERA	11:15 – 11:26	PITCH – TF Degradery	11:15 – 11:26
PITCH – Plantman	11:26 – 11:37	PITCH – MaculaPatch	11:26 – 11:37
PITCH – OnCarion	11:37 – 11:48	PITCH – NextThyme	11:37 – 11:48
Break	**11:48 – 12:05**	**Break**	**11:48 – 12:05**
PITCH – ReRetina	12:05 – 12:16	PITCH – OROSafe	12:05 – 12:16
PITCH – Next-PA	12:16 – 12:27	PITCH – ImmuRestore	12:16 – 12:27
PITCH – DuoSmarT	12:27 – 12:38		
Lunch	**12:38 – 14:00**		

Afternoon Program

Allerheiligen Hofkirche

Opening **14:00**
- Welcome Address by Judith Gerlach, Bavarian State Minister for Health, Care and Prevention
- Welcome by **Dr. Philipp Gerbert** and **Maria Sievert** (TUM Venture Labs, local hosts Munich)

Award Ceremony Winner Teams GeneNovate® 2026 **14:20**

Panel: From Cooperation to Impact – Powered by GeneNovate® **14:40**
- Coordinators' Perspective – **Mike Butler & Stephanie Wieneke**
- Mentors' Perspective – **Herbert Altmann**
- Startup Perspective – **Emma Phillips & Zahra Ghodratian**
- National Strategy GCT and Future Outlook – **Christopher Baum**

Max-Joseph-Saal

Networking & Marketplace **15:15**

You Never Walk Alone: Validating Ideas with GeneNovate® **16:15**
- Success Stories from the 2025 Winner Teams: **EliaCell, Heat Therapeutics, ZephyRNA, Metastrict**

Wrap up **16:40**

Get together **16:50**

End of Event **18:00**

STARTUPS

Region Berlin

- TCReNovo
- ZELF
- NMJCare
- pHera
- Catamab

Region Heidelberg

- HomeGrownLabs
- OncoTrackeR
- LongCOV Diagnostics

Region Munich

- Fluxion
- NaviLent
- NovaSplice
- MithrYon
- T-REX

Region East

- TF Degradery
- MaculaPatch
- NextThyme
- RapidNeo
- EnKall Therapeutics

Region North

- ImmuRestore
- OROSafe
- AiRNA

Region NRW I

- AIzGen
- CARzi
- OvOnco
- OnCarion
- Next-PA
- Plantman
- ProNaCell Therapeutics
- Interceptics
- DuoSmarT
- ReRetina

Region NRW II

- Yulioo Therapeutics
- VULNERA

Region Southwest

- Base-edited CAR-T cells
- Thwick Therapeutics
- BiObservR
- VectoGen
- Senova Theranostics

Region Rhine-Main

- Muc Nova
- Mind Ex Machina
- NeoReGenesis
- Precision Hematology at Scale
- AIzDetect
- CheckBrain Therapeutics
- Ultrasound-Enhanced Brain RNA Delivery
- Surgic Sense

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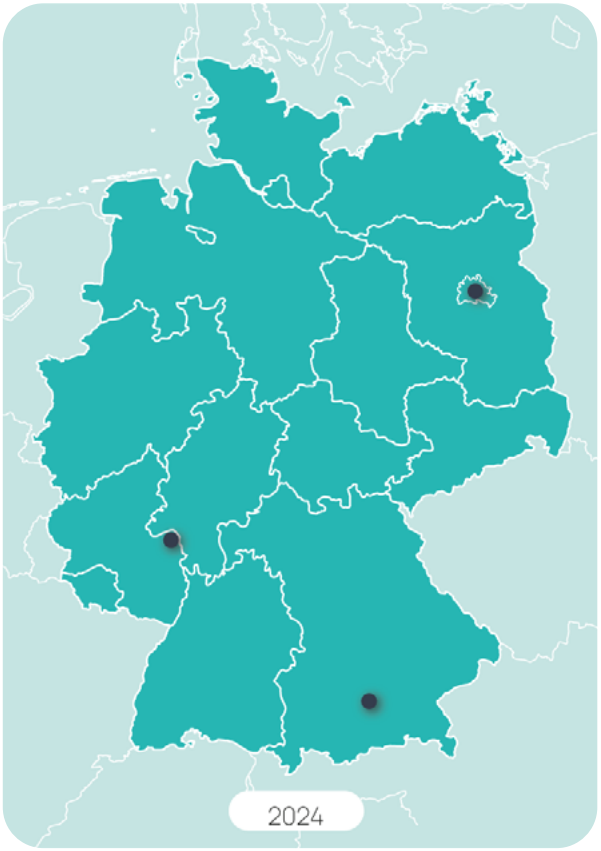
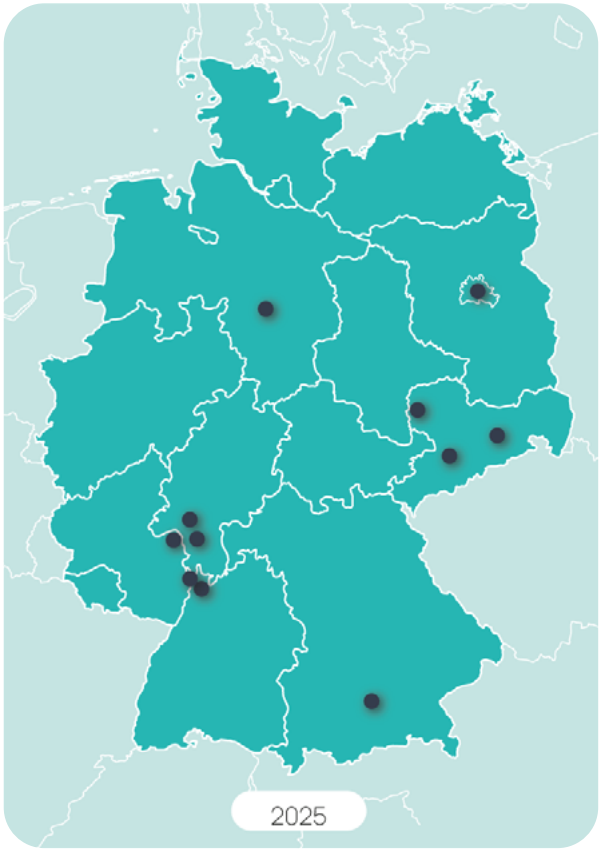
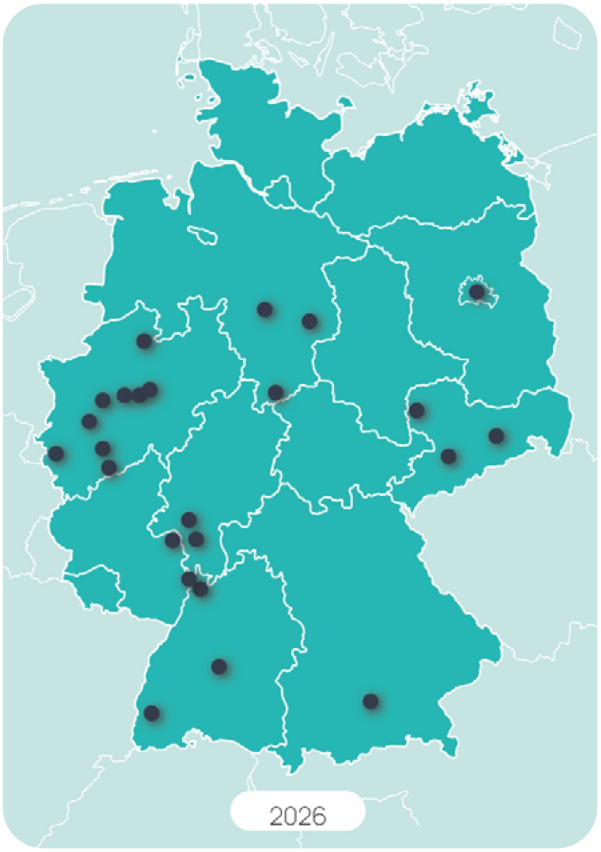
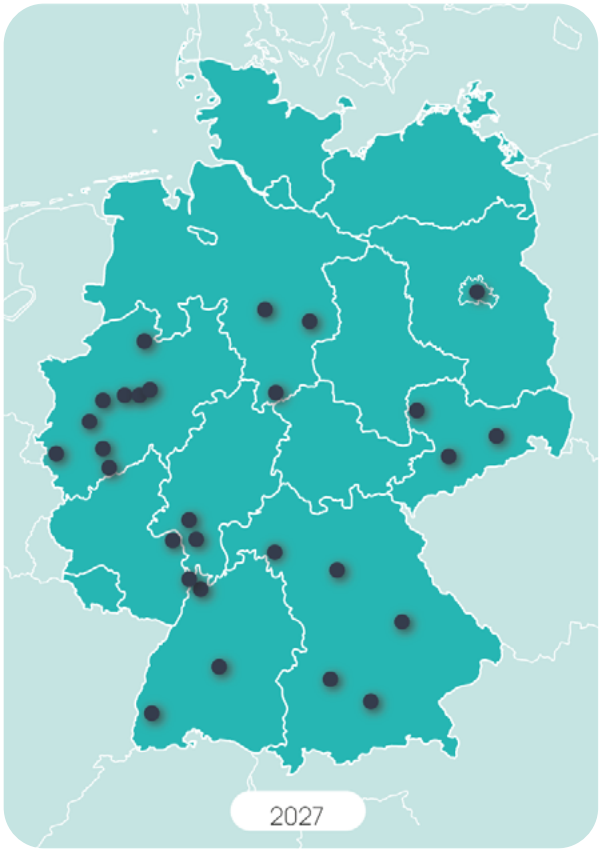
Miltenyi Biotec

THE GROWING GENENOVATE® NETWORK









JURY MEMBERS

GCT
National Strategy
Gene- and Cell-Based Therapies
GeneNovate®

Allerheiligen Hofkirche

Christian Kannemeier
Senior Investment Manager, High-Tech Gründerfonds

Jan zur Hausen
Managing Director, Bergmann zur Hausen & Cie. GmbH

Jürgen Schmitz
Chief Scientific Officer, Miltenyi Biotec

Max-Joseph-Saal

Matthias Kromayer
Managing Partner and Board Member, MIG Capital

Dr. Nathalie Weitemeyer
Senior Investment Manager, Bayern Kapital GmbH

Prof. Dr. Markus Gerhard
Academic Director, TUM Venture Lab Healthcare,
Technical University of Munich

1 TCReNovo

GeneNovate®-Region
Berlin

Project description

Conventional chemotherapy and immunotherapy can induce cellular senescence in solid tumors, creating reservoirs for relapse. We developed a TCR-T cell therapy pipeline targeting these therapy-resistant senescent cells by identifying novel antigens expressed during post-treatment relapse. This approach addresses a major unmet need in Pancreatic Ductal Adenocarcinoma, where treatment options remain limited, and offers a potential last-resort therapy for patients who have exhausted standard-of-care protocols by selectively eradicating the most resilient tumor cells.

Team members

Zuhal Safyürek
DKFZ (German Cancer Research Center)

Stefanos Timiliotis
Charité – Universitätsmedizin Berlin

Nicolas Arnow
DKFZ (German Cancer Research Center)

Christos Sarantaris
Charité – Universitätsmedizin Berlin

Reziya Maimaiti
Max-Delbrück-Centre for Molecular Medicine

2 ZELF

GeneNovate®-Region
Berlin

Project description

Cell therapies have the potential to transform medicine by treating cancer, preventing life-threatening immune reactions, and regenerating tissue with living cells. However, many therapies fail to reach the market due to insufficient clinical efficacy. A key reason is that therapeutic cells progressively lose function during in vitro expansion, reducing their potency. ZELF is an approach to preserve cell functionality throughout manufacturing, with the potential to enhance therapeutic efficacy and enable promising clinical-stage cell therapies to reach the efficacy threshold required for successful market translation.

Team members

Dania Hamo
Berlin Institute of Health at Charité (BCRT)

Mete Can Odabasi
Charité – Universitätsmedizin Berlin

Weijie Du

Elizaveta Podoliak
University of Bonn

3 NMJCare

GeneNovate®-Region
Berlin

Project description

NMJCare targets neuromuscular diseases, affecting ~15 million people worldwide, with unmet need and no cure. Drug development is held back by animal models and simple cell assays missing key human biology, leading to expensive failures in clinical trials. To solve this, NMJCare has developed an innovative neuromuscular junction platform built from patient-derived cells that recreates the connection between nerve and muscle. This platform enables scalable, automated screening and early validation of effective drug candidates in a human-based model. Our go-to-market strategy spans CRO services to development of our own therapeutic assets.

Team members

Ines Lahmann
Max-Delbrück-Centre for Molecular Medicine

Gian-Luca Albano
Charité – Universitätsmedizin Berlin

Claudia Abad Baucells
Charité – Universitätsmedizin Berlin

Alessa Ringel
Max Planck Institute for Molecular Genetics

Hina Jhelum

4 pHera

GeneNovate®-Region
Berlin

Project description

pHera is the first ultra-precise, personalized digital vaginal pH test delivering lab-quality vaginal health insights anytime, anywhere. Today's vaginal pH tests rely on color matching and guesswork, with one-size-fits-all interpretation that can lead to misdiagnosis and poor pregnancy outcomes, especially for women of color, women in menopause, and women with hormonal conditions. We remove guesswork by digitizing vaginal health testing and use AI-driven personalization to tackle medical bias. pHera helps women manage recurrent vaginal infections, helps doctors reduce misdiagnosis, and gives researchers reproducible data for clinical studies. We are starting with a research-use case, creating the fastest path to validation, certification, and the clinical evidence needed to bring pHera safely into doctors' offices and patients at home.

Team members

Valerie Masete
Charité – Universitätsmedizin Berlin

Mariia Myshkina
Humboldt University of Berlin

Anna Paulissen
Charité – Universitätsmedizin Berlin

Franziska Möckl
Universitätsklinikum Hamburg-Eppendorf

Fatima Lozano
Charité – Universitätsmedizin Berlin

5 Catamab

GeneNovate®-Region
Berlin

Project description

Catamab is a next-generation cancer therapy that combines the precision of antibodies with chemical power. Today's cancer treatments come with severe harmful side effects for healthy cells and lacking in the onside concentration provided. Our innovation uses antibodies to carry catalysts that locally activate medicines directly inside the tumour environment. This approach could make treatments more effective, reduce side effects, and create new possibilities for treating difficult cancers. Our technology addresses the rapid growing global market for targeted cancer therapies, including the multi-billion-dollar antibody-drug conjugate sector.

Team members

Ana Perez-Lopez
TU Berlin

Adam Belsome
TU Berlin

Vanessa Elgeti
Fraunhofer IMTE

Igor Minia
Berlin Institute of Health at Charité

6 HomeGrownLabs

GeneNovate®-Region
Heidelberg

Project description

More than 850 million people worldwide live with kidney disease, yet drug developers still rely on animal tests and simple cell models that poorly predict human kidney responses. Recent regulatory changes have increased demand for faster, more informative, and more human-relevant in vitro alternatives. At HomeGrownLabs, we are developing a human kidney-on-chip platform that combines lab-grown kidney tissue, 3D-printed vascular structures, and tunable fluid flow to recreate key kidney functions outside the body for drug screening and disease research.

Team members

Stephen Casale
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University of Heidelberg

Aaron Eidenmüller
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Ashraf Yusuf Rangrez
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Farhad Faghihi
DKFZ (German Cancer Research Center)

7

OncoTrackeR

GeneNovate®-Region
Heidelberg

Project description

OncoTrackeR focuses on patients with aggressive, recurrent ovarian tumors who receive immunotherapy and urgently need earlier feedback on whether treatment is helping. Clinicians today mainly rely on imaging and later clinical changes, which can delay clear insight and make it harder to change course in time. Our solution is a standardized blood test combined with a locked-in artificial intelligence model that can indicate within 21 days whether the immune system is responding, allowing early therapeutic intervention.
The team comprises of 5 early-career researchers with expertise in clinical research, project management, assay optimisation, software development, and data science. We work closely with clinical partners who provide patient samples and clinical expertise for real-world validation. By targeting a fast-growing global market for precision cancer care, OncoTrackeR aims to become a go-to test for guiding immunotherapy use, helping hospitals use costly treatments more wisely and improving patient outcomes worldwide.

Team members

Amritha Sathyanarayanan
University of Heidelberg

Elenora Prodi
DKFZ (German Cancer Research Center)

Valeriia Smialkovska

Yixuan Hu

Annika Jeschke
DKFZ (German Cancer Research Center)

Omkar Sanjay Dod
KITZ-DKFZ (German Cancer Research Center)

8

LongCOV Diagnostics

GeneNovate®-Region
Heidelberg

Project description

Long COVID affects 400 million people worldwide, yet no validated diagnostic test exists, leaving patients without diagnosis for months. LongCOV Diagnostics is developing the first at-home saliva test measuring health markers linked to long COVID, delivering results in minutes. A free companion app tracks changes over time, predicts flare-ups, connects patients to specialists and community, and creates a pharmaceutical data partnership platform. Starting in Germany, with a route to health insurance reimbursement and a global market valued at 13 billion EUR, LongCOV is set to become the first dedicated monitoring platform for this condition.

Team members

George Galea
European Molecular Biology Laboratory, Heidelberg

Muzamil Majid Khan
European Molecular Biology Laboratory, Heidelberg

Rashi Agarwal
University of Heidelberg

Fidel Emmanuel Serrano
University of Heidelberg

9 Fluxion

GeneNovate®-Region
Munich

Project description

As women increasingly delay childbearing due to career and personal priorities, accessible early fertility assessment has become essential. Accurate prediction of menopausal and perimenopausal timing is imperative for informed life planning from family building to health management. We address this unmet need with a home blood test requiring just a single drop, democratizing advanced fertility diagnostics.
By analyzing thousands of proteins, we provide accurate estimation of each woman's „fertility window," empowering couples with personalized information for crucial life decisions. The European fertility diagnostics market is valued at €240M with 10% annual growth, reflecting both pressing societal need and significant commercial opportunity.

Team members

Shani Ben-Moshe
Max Planck Institute of Biochemistry

Maria Wahle
Max Planck Institute of Biochemistry

Caroline Weiss
Max Planck Institute of Biochemistry

Kathrin Korff
Max Planck Institute of Biochemistry

10 NaviLent

GeneNovate®-Region
Munich

Project description

NaviLent combines the precision of CRISPR with the potency of lentiviral gene delivery to create NaviPiP (NaviLent Precision Integration Platform) for highly efficient and safe gene transfer. Today, researchers must choose between efficient but random lentiviral integration, or precise but low-efficiency CRISPR knock-in. NaviPiP overcomes this by engineering the lentiviral machinery and pairing it with a CRISPR-guided module in a single proprietary platform. NaviPiP aims to replace and expand conventional CRISPR - from basic research to in vivo gene therapy, tapping into the growing multi-billion USD market for gene and cell therapies.

Team members

Agnes Dorn
Fraunhofer IGB

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Technical University of Munich

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DKFZ (German Cancer Research Center)

Hong Van Pham
TUM Clinic Rechts der Isar

Teng Teng Xu
Max Planck Institute of Biochemistry

11 NovaSplice

GeneNovate®-Region
Munich

Project description

NovaSplice is building a proprietary RNA-splicing discovery platform to enable the development of small-molecule therapies for diseases that remain difficult to treat today. By leveraging our unique understanding of Luc7, a key regulator of RNA splicing, we can focus drug discovery on highly relevant biological targets, accelerating candidate identification and reducing development risk. Our business model is centered on strategic partnerships and licensing opportunities with pharmaceutical and biotechnology companies.

Team members

Niklas Dold
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Technical University of Munich

Valeria Soberon
Technical University of Munich

Eunhae Jo
Eurofins

Valeria Colón Oliveros
Technical University of Munich

12 MithrYon

GeneNovate®-Region
Munich

Team members

Pirasteh Pahlavan Rubinke
Mithryon

Project description

Mithryon's AI turns ‚undruggable' cancer drivers into degradable targets. Our multi-modal discovery engine fuses omics, clinical, and chemical data with a physics-based structural layer to nominate cancer-selective degradation targets, which conventional screening misses, explainable outputs that compress validation and harden IP.

13 T-REX

GeneNovate®-Region
Munich

Project description

Autoimmune disease are a rising health problem but most therpeutic strategies are based on unspecific and broad suppression of the entire immune system. Regulatory T cells (Tregs) are key regulators of inflammation since these cells are capable of suppressing inflammation. The TREX Technology aims to develop a platform for highly-specific drug delivery to Tregs to enhance their function in different autoimmune situations. This will be enabled trough injecting biomolecules which attract Tregs to the side of inflammation and following injections of Treg-specific LNPs which can carry diverse drugs which promote Tregs (small molecules, RNAs etc).

Team members

Nina Wichmann
Helmholtz Munich

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Monique Honsa
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Muhammad Zia Ullah Khan
TUM

Niu Xija
Helmholtz Munich

14 TF Degradery

GeneNovate®-Region
East

Project description

Transcription factors sit at the core of cancer biology, but classical therapeutics cannot effectively target them. TF Degradery develops degraders that directly eliminate these critical disease drivers.
Using our proprietary workflow, we begin by empowering researchers with next-generation tools for discovery and validation. Perspectively, this opens the door to new treatments for resistant cancers and other hard-to-treat diseases. Today's "undruggable" targets become tomorrow's cures.

Team members

Robin Kohler
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Leipzig University, Medical Faculty

Manish Yadav
Technical University Dresden

Karl Seidenstücker
Leipzig University, Medical Faculty

Sigrid Uxta
Leipzig University, Medical Faculty

15 MaculaPatch

GeneNovate®-Region
East

Project description

MaculaPatch is developing the first personalizable cell therapy for vision loss caused by lost light-sensitive cells in the eye, a condition affecting over 200 million people worldwide. Unlike current strategies that cannot replace lost cells or precisely repair retinal tissue, MaculaPatches are stable 3D building blocks made from light-sensitive cells that can be tailored to each patient's damaged area. The therapy will first target urgent clinical needs such as macular holes, then expand to major retinal diseases like age-related macular degeneration (AMD), unlocking breakthrough potential in a multi-billion-euro retinal therapy market.

Team members

Felix Wagner
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Lilly Dydymski
Technical University Dresden, Medical Faculty

Yueyuan Hu
Technical University Dresden, Medical Faculty

Jessica Nitsche
Technical University Dresden, Medical Faculty

Samira Kaziakhmedova
Technical University Dresden, Medical Faculty

Konstantin Troianovskii
Technical University Dresden

16 NextThyme

GeneNovate®-Region
East

Project description

NextThyme develops standardized thymus tissue grafts for patients with missing or damaged thymus function who need improved immune recovery. The thymus trains T cells to fight infections and prevent autoimmunity. Beneficiaries include babies with DiGeorge syndrome, children after heart surgery, HIV patients, and cancer patients after chemotherapy. Unlike current transplants limited by scarce donor tissue, storage issues, and immune risks, NextThyme repurposes thymus tissue from pediatric heart surgeries into cryopreserved, quality-controlled grafts, creating a scalable biobank for rare immune diseases and future immune regeneration.

Team members

Karina Amineva
Technical University Dresden, Medical Faculty

Sona Michlikova
OncoRay Helmholtz-Centre Dresden

Helene Fitzner
Leipzig University, Medical Faculty

17 RapidNeo

GeneNovate®-Region
East

Project description

Current cancer therapies often struggle to distinguish cancer cells from healthy tissue, which can lead to side effects, relapse, and limited treatment success. Analysing patient data, our software platform RapidNeo can identify the most promising neoantigens for personalized immunotherapies. It delivers results within minutes, helping clinicians and companies develop and deploy the safest and most effective cancer immunotherapy for every patient. As personalized cancer treatments rapidly enter the market, RapidNeo has strong potential as a scalable data solution for next-generation cancer care.

Team members

Susanne Horn
University of Leipzig, Faculty of Medicine

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University of Leipzig, Faculty of Medicine

Natasha Lewis
University Hospital Dresden

Prerana Rajeev Chandratre
Technische Universität Dresden

Udo Stenzel
University of Leipzig, Faculty of Medicine

18 EnKall Therapeutics

GeneNovate®-Region
East

Project description

EnKall Therapeutics is developing NeuroBlastNK, an allogeneic CAR-NK cell therapy for high-risk neuroblastoma patients. Unlike painful standard treatments requiring months of hospitalization or complex therapies needing weeks to manufacture, NeuroBlastNK offers an off-the-shelf solution delivered approximately in three days. Its proprietary platform is engineered to stay effective in the harsh solid tumor environment, reducing hospital burden and lowering total treatment costs. This scalable innovation also creates a strong foundation to address multiple other hard-to-treat cancers in a multi-billion-euro market.

Team members

Kamala Bharathi Ramalingam
University of Leipzig, Faculty of Medicine & Fraunhofer Institute for cell therapy and immunology

Anastasiia Herzog
Technical University Dresden – Faculty of Medicine

19 ImmuRestore

GeneNovate®-Region
North

Project description

We enable effective immunotargeting of pancreatic cancer by creating an immunological „hot“ target.

Team members

Matthias Wirth
University Medical Center Göttingen

Mallak Alomoush

Tonia Bargmann
Frauenhofer ITEM

20 OROSafe

GeneNovate®-Region
North

Project description

In April 2026, the WHO added Oropouche virus (OROV) to its High Priority Pathogens List after the spike of cases for the third year. OROV causes febrile illness with possible neurological complications and fetal transmission, yet no specific antiviral or vaccine exists. To control the spread of the disease, we engineer the rVSV platform with OROV glycoproteins to develop a replication deficient, single cycle live vaccine, leveraging its ability to induce strong, long-lasting immune response while keeping a high safety profile. Our strategy leverages the EMA fast track and ANVISA regulatory reliance program for rapid market entry.

Team members

Mena Youssef
Twincore, Center for Experimental and Clinical Infection Research

Eren Diniz
University of Göttingen

Jan Straub
Helmholtz Centre for Infection Research

21 AiRNA

GeneNovate®-Region
North

Project description

AirRNA develops inhalable RNA therapeutics for the treatment of viral respiratory diseases. Our platform combines siRNA to silence disease genes with mRNA to express antiviral and regenerative factors directly in the lung. By delivering RNA therapies through inhalation, we enable localized, highly effective treatment while minimizing systemic exposure. Our goal is to establish a new generation of multivalent RNA medicines for current and emerging respiratory infections.

Team members

Anna Zimmer
Fraunhofer ITEM

Jennifer Marx
Medical School Hannover

22 AlzGen

GeneNovate®-Region
North Rhine-Westphalia I

Project description

AlzGen unites real-world clinical expertise with innovative scientific thinking to pursue a single goal: effective therapy for Alzheimer's disease, which affects ~57 million people globally. Current care relies on symptomatic treatments and limited disease-modifying options. We address this gap with a one-shot gene immunotherapy targeting multiple hallmarks of the disease. With greater efficacy than existing amyloid-β antibodies and a broader eligible population, our approach opens access to a >$5B therapeutics market while improving quality of life and restoring hope for millions.

Team members

Sergio Castro-Gomez
University of Bonn, University Hospital Bonn, Center for Neurology

Ida Kulinska
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Susana Ramirez Valladolid
Department of Dermatology
University Hospital of Bonn, Germany

Katrin Pérez Anderson
University Hospital Bonn

Aurelia Merbecks
University of Bonn, University Hospital Bonn, Institute of Innate Immunity

23 CARzi

GeneNovate®-Region
North Rhine-Westphalia I

Project description

Melanoma is the deadliest form of skin cancer, with rising incidence and mortality despite advances in immune checkpoint blockade. With CARzi, we are developing a first-in-class bi-paratopic CAR T cell product that incorporates two single-domain antibodies (sdAbs) as a dual-targeting antigen recognition domain, against CD155. This innovative strategy aims to enhance tumor recognition, reduce antigen escape and resistance mechanisms, ultimately improving patient response rates analogous to cilta-cel's enhanced efficacy. Through CARzi, we aim to provide a novel therapeutic option for melanoma patients not responding to existing immunotherapies.

Team members

Carolin Birr
University of Bonn, University Hospital Bonn, Institute of Experimental Oncology

Franziska Schneppenheim
University of Bonn, University Hospital Bonn, Institute of Experimental Oncology

Nora Möhn
University Hospital Bonn

24 OvOnco

GeneNovate®-Region
North Rhine-Westphalia I

Project description

We are Jacob and Anna, PhD students with background in biochemistry and immunology. Our mission is to accelerate the development of cellular immune therapies for treatment of cancer. OvOnco is based on the chick chorioallantoic membrane (CAM) assay and designed to improve pre-clinical drug development of T cell engagers (TCEs) and chimeric antigen receptor (CAR) T cells. The system aligns with the 3R principles promoted by EMA and FDA encouraging the use of alternative models to support early decision-making. It enables reduction of animal use while retaining key aspects of in-vivo complexity.

Team members

Jacob Mayer
University of Bonn, University Hospital Bonn, Institute of Experimental Oncology

Anna Hartel
University of Bonn, University Hospital Bonn, Institute of Experimental Oncology

Mohsen Hajheidari
University of Cologne

Jiajun Li
University of Bonn, University Hospital Bonn, Institute of Experimental Oncology

Tim Kempchen
University of Bonn, University Hospital Bonn, Institute of Experimental Oncology

25 OnCarion

GeneNovate®-Region
North Rhine-Westphalia I

Project description

OnCarion is an immunoncology company developing next-generation CAR T therapies for solid tumors, initially focused on small cell lung cancer (SCLC). SCLC accounts for 10-15% of lung cancers and remains highly aggressive, with early relapse and a five-year survival of around 9%. OnCarion targets B7-H3, broadly expressed across SCLC subtypes, using a CRISPR-based non-viral engineering platform designed to improve precision, manufacturability, and scalability. Its initial focus is third-line SCLC, representing a high-unmet-need population of 4,000 patients annually across the EU and US, with expansion potential into frontline and other tumors.

Team members

Hyatt Balke-Want
University Hospital Cologne

Laura Godfrey
Institute for Computational Cancer Biology, Center for Integrated Oncology (CIO), Cancer Research Center Cologne Essen (CCCE), University Hospital and University of Cologne, Germany

Jessica Propp
University Hospital Cologne

Johannes Brägelsmann
University Hospital Bonn

Christian Pallasch
University Hospital Cologne

Daniel Bachurski
University Hospital Cologne

26 Next-PA

GeneNovate®-Region
North Rhine-Westphalia I

Project description

Next-PA is developing UHC-D9, a fully human monoclonal antibody against Pseudomonas aeruginosa, a WHO-priority pathogen responsible for severe hospital-acquired infections with high morbidity and mortality. Rising antimicrobial resistance is making these infections increasingly difficult to treat, creating an urgent need for new therapeutic options. UHC-D9 has demonstrated strong efficacy in preclinical studies and is advancing toward a first-in-human Phase I clinical trial. The program has secured more than €8.5 million in non-dilutive funding, positioning Next-PA to deliver a novel treatment for life-threatening acute and chronic infections.

Team members

Jan Rybniker
University Hospital Cologne

Klaus Schwamborn
German Center for Infection Research (DZIF)

27 Plantman

GeneNovate®-Region
North Rhine-Westphalia I

Team members

Ernesto Llamas
University of Cologne

Project description

Plantman is developing therapies for Huntington's disease and other disorders caused by toxic protein aggregation. In these conditions, misfolded proteins form harmful clumps that damage cells, while existing treatments only address symptoms. Our platform leverages discoveries from plants and animals to identify small molecules and biologics that prevent protein aggregation. Unlike gene-silencing approaches, our therapies preserve normal protein function while blocking toxic aggregates. The platform may also apply to other age-related diseases such as ALS and TTR amyloidosis.

28 ProNaCell Therapeutics -

Protein Nanoparticle Platform for game changing nucleic acid based Therapy

GeneNovate®-Region
North Rhine-Westphalia I

Team members

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Project description

The primary challenge in nucleic acid-based therapeutics is ensuring the protected transport of unstable active compounds following parenteral administration and achieving targeted delivery to diseased tissues. ProNaCell addresses this issue with its patented (US 15/533.377) engineered protein nanoparticle platform (EPN). The EPN based on optimized Polyomavirus capsid proteins, providing a proprietary, innovative drug delivery platform. This platform presents a significant advancement, enabling the use of RNA/DNA therapeutics for oncological and orphan disease treatments, opening new therapeutic possibilities with a first-in-class approach.

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Interceptics -

Neutralizing cancer's lethal weapon against immune recognition

GeneNovate®-Region
North Rhine-Westphalia I

Project description

Nearly one in six cancer patients die despite surgery, radiation, and chemotherapy. The death ligand TRAIL has been shown to shield cancers from immune recognition. Interceptics' first-in-class TRAIL blocker reverses this effect. In mice, blocking TRAIL almost completely prevented metastasis and extended survival in aggressive lung and pancreatic cancers, supporting broad use in treatment-resistant tumors. With no direct competitors and multi-billion-dollar markets in brain, lung, and pancreatic cancer, Interceptics represents a unique opportunity in oncology.

Team members

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DuoSmarT

GeneNovate®-Region
North Rhine-Westphalia I

Project description

At DuoSmarT, we are a cross-functional team redefining CAR-T cell therapy for solid tumors as an option for breast cancer patients where none currently exists. We engineer T cells into biological computers using „AND" logic to spare healthy tissue. This approach, proven in vivo, significantly amplifies therapeutic efficacy. It offers a new quality of cancer care, aiming to provide a life-saving option even for patients in palliative treatment. At DuoSmarT we are making CAR T-cells not only stronger, we are making them smarter.

Team members

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31 ReRetina

GeneNovate®-Region
North Rhine-Westphalia I

Project description

ReRetina develops a cell therapy to restore vision in people with age-related macular degeneration (AMD), a leading cause of blindness affecting millions worldwide. Current treatments only help a small group of patients and cannot restore lost vision. Our patented technology produces human photoreceptor cells within days instead of several months required by competing approaches, making therapy fast, scalable, and affordable. We aim to replace damaged photoreceptors with a single injection to restore sight and improve quality of life. With 7 million patients in Germany alone, ReRetina addresses a major and rapidly growing medical market.

Team members

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32 Yulioo Therapeutics

GeneNovate®-Region
North Rhine-Westphalia II

Project description

Yulioo Tx is building next-generation cell therapies leveraging multi-tiered genetically enhanced natural killer (NK) cells. We aim to provide a novel immune therapy using killer cells targeting acute myeloid leukemia (AML). Today, AML patients are still treated with chemotherapy and often require a stem cell transplantation, however, the outcomes are dismal (median overall survival of less than 12 months). With the global AML treatment market of 3-4 billion USD, we address a large unmet need in blood cancer treatment with an innovative NK cell-based approach, which will be faster, safer and more efficient compared to current therapies.

Team members

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Jeffrey Hastings
University Hospital Essen, Virology

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33 VULNERA

GeneNovate®-Region
North Rhine-Westphalia II

Project description

VULNERA is a precision oncology platform for aggressive cancers, starting with glioblastoma, where current treatments often fail and nearly all patients relapse shortly after therapy. VULNERA uses patient biopsies and functional genomics screening to identify genes essential for tumor survival, both with and without radiation. Based on these vulnerabilities, the platform generates a clear report ranking potential drugs and combinations to guide more effective, personalized therapy. By moving beyond one-size-fits-all treatment, VULNERA offers strong clinical and market value as a scalable next-generation cancer therapy platform.

Team members

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Bayar Boldtumur
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34 Base-edited CAR-T cells

GeneNovate®-Region
Southwest

Project description

Current CAR T therapies can lose strength quickly in solid tumors, which limits their long-term effectiveness.
We develop a **novel genetic engineering platform** using precise **base editing technology** to introduce the **PI3Kδ E81K mutation** into CAR T cells, making them stronger, longer-lasting, and better able to fight cancer inside the tumor environment. This approach has already shown promising results in in vitro and in vivo and has strong potential to improve treatment success for patients with hard-to-treat cancers. We aim to start with pediatric neuroblastoma as our first clinical validation and then expand our platform to multiple solid tumor types in the long term.

Team members

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35 Thwick Therapeutics:

Precision Editing - Human-Based

GeneNovate®-Region
Southwest

Team members

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Project description

We aim for safer and more precise gene editing for patients who could benefit from genetic medicines. Today, most base editing tools are built from bacterial proteins, which can trigger immune reactions and create unwanted DNA changes in nearby positions. We have discovered what we believe is the first human enzyme that edits a single DNA letter only at the very end of the DNA strand, avoiding these off-target edits. This "human-native" and terminal-only editor can power a next-generation platform for pharma, biotech, and tool providers that need ultra-precise and better-tolerated editing tools in a fast-growing gene editing market. We are now moving from lab validation to tests in human cells and preparing the groundwork for a dedicated startup to bring this technology to patients.

36 BiObservR

GeneNovate®-Region
Southwest

Team members

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Project description

At BiObservR, we help gene therapy developers move breakthrough science to safer treatments for patients with cancer, rare genetic disorders, blood diseases, and other serious conditions. A major risk is unwanted DNA change, which can cause serious side effects and slow approval. Our innovation is a comprehensive safety testing service that detects these risks before clinical use. Combining computational prediction, biochemical testing, and sequencing validation, we give developers a clear view of genetic risks and how to reduce them for approval. As gene therapy scales, we provide confidence for safer products and faster approvals.

37 VectoGen

GeneNovate®-Region
Southwest

Project description

Our team tackles a key bottleneck in developing gene and cell therapies: limited access to GMP-grade viral vectors for early-stage innovators. Existing providers focus on large-scale production that is too costly and inflexible for startups and academic teams. We provide small- to medium-scale GMP vector production, including quality control and regulatory support, designed specifically to early development needs. By offering faster, more flexible and cost-effective access to high-quality vectors, we enable more therapies to advance from concept to clinic in a rapidly expanding market.

Team members

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38 Senova Theranostics

GeneNovate®-Region
Southwest

Project description

Cellular senescence plays a central role in cancer, aging, fibrosis, and cardiovascular diseases, yet no clinically established method exists to measure senescent cells directly in patients. We developed a first-in-class PET imaging platform for non-invasive whole-body visualization of cellular senescence, enabling quantitative monitoring of therapy response and patient stratification. Our lead tracer is already being evaluated in a clinical phase I/II study, while next-generation tracers are being advanced for broader applications and future theranostic approaches. Through Senova Theranostics, we aim to establish a new diagnostic and therapeutic category: the imaging and targeting of cellular senescence.

Team members

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Micaela Vicente Biscardi
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39 Muc Nova

GeneNovate®-Region
Rhine-Main

Team members

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Project description

MucNova develops targeted therapies for triple-negative breast cancer (TNBC), one of the most aggressive breast cancer types with limited treatment options. Current therapies often fail because many patients do not respond to existing targeted drugs and often experience severe side effects. Our innovation is a highly specific antibody-drug conjugate (ADC) that selectively targets cancer cells while minimizing damage to healthy tissue. By focusing on tumor-associated MUC1, which is present in most TNBC cases, MucNova aims to provide a new treatment option for patients with high unmet medical need.

40 Mind Ex Machina

GeneNovate®-Region
Rhine-Main

Team members

Dr. Sidney Cambridge
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Project description

As populations age, neurodegenerative diseases such as Alzheimer's and Parkinson's are becoming a major clinical challenge. Our team developed a unique in-house genetic screening pipeline in neurons, which we aim to patent, enabling full molecular dissection of neuronal protein aggregation, the central pathology in Alzheimer's and related diseases. Within two years, we expect to identify multiple high-value molecular targets and out-license selected targets to generate cash flow. In parallel, we will advance the most promising candidates with pharma partners, particularly those showing high efficacy at pre-clinical and early disease stages.

41 NeoReGenesis

GeneNovate®-Region
Rhine-Main

Team members

Daniel Sabatelli

Project description

NeoReGenesis is developing a cell therapy platform using novel selection and delivery technology to enhance safety and efficiency, enabling viable ex-vivo cell therapies for broad indications. Its first target: a one-time curative cell therapy for systemic lupus erythematosus — one of the world's most common autoimmune diseases. Current treatments require lifelong administration, incur high long-term costs, and carry undesirable side effects. NeoReGenesis' patented technology mitigates safety risks associated with other cell therapies, making curative treatment accessible, affordable, and safe for this widespread condition.

42 Precision Hematology at Scale:

AI4TX Transforms Blood Cancer Treatment

GeneNovate®-Region:
Rhine-Main

Team members

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Project description

Imagine a leukemia patient finally ringing the bell, not after years of failed chemotherapy, but after receiving personalized therapy precisely matched to their genomic and molecular profile from day one. Today, up to 50% of blood cancer patients in Germany fail standardized chemotherapy protocols simply because treatment is not tailored to their individual tumor biology. AI4TX changes that: an AI-powered clinical decision platform that integrates genomic, proteomic, and clinical data into one explainable, actionable recommendation, embedded directly into the hematologist's workflow. With 35,000 new hematological malignancy cases in Germany each year and a €2.1 billion drug market, the opportunity to redefine personalized medicine in oncology is now. Partner with us to make precision hematology a clinical reality.
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AlzDetect: Early Alzheimer's Detection from Blood

GeneNovate®-Region
Rhine-Main

Team members

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Project description

Clariva is developing AlzDetect, a blood-based test for early Alzheimer's disease detection. Current diagnosis can take 2-5 years due to expensive and invasive procedures. AlzDetect aims to use Alzheimer's-specific biomarker signatures and standard qPCR equipment to provide results within 2-5 days from a simple blood sample. By enabling faster, affordable, and accessible diagnostics through existing laboratory infrastructure, the team is actively working to support earlier treatment and improved patient care for Alzheimer's disease.

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CheckBrain Therapeutics

GeneNovate®-Region
Rhine-Main

Team members

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Project description

Our proprietary autotaxin inhibitors address major unmet medical needs by reducing neuronal overexcitation, a key driver in acute stroke-related brain damage and neurotoxicity. Over 1.5 million strokes annually alone in Europe and no approved neuroprotective therapies available, indicate significant blockbuster potential; accessible with a fast-track opportunity through conditional marketing authorisation. We currently collect readouts from our ongoing first-in-human phase 1 trial. Beyond stroke, neuronal overexcitation plays a role in metabolic and psychiatric disorders, creating additional opportunities for future development programmes.

45 Ultrasound-Enhanced Brain RNA Delivery

GeneNovate®-Region
Rhine-Main

Team members

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Project description

Neuro-oncology needs better ways to deliver medicines across the blood-brain barrier. We help pharma companies turn mRNA therapies with poor brain delivery into brain-targeted treatments using tailored nanocapsules and focused ultrasound to transiently open the BBB near brain tumors. We provide standardized in vivo evidence of improved delivery, biological activity, and translational readiness for clinical trials.

46 Surgic Sense

GeneNovate®-Region:
Rhine-Main

Team members

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Dr. Håkan Lane
Innovation in Medicine

Project description

Surgic Sense develops an AI platform to objectively assess complex wounds—burns, trauma, chronic ulcers, cancer defects—using standard clinical images. Current wound evaluation relies on subjective visual judgment and manual notes, often causing inconsistent assessments and treatment delays. Our AI converts images into measurable, easy-to-interpret data, enabling better healing monitoring and patient care—no special hardware needed. Beyond clinical use, the platform supports medical education via an interactive training environment for students and surgeons. With the global wound care market expanding rapidly, Surgic Sense offers scalable value for hospitals, surgical centers, and medical universities worldwide.

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Region North

HZI Helmholtz Zentrum für Infektionsforschung · Institute for Biomedical Translation Lower Saxony · MHH Medizinische Hochschule Hannover · UNIVERSITÄTSMEDIZIN GÖTTINGEN UMG

Region Heidelberg

bioRN Life Science Cluster · DKTK German Cancer Consortium · dkfz. German Cancer Research Center in the Helmholtz Association · Health + Life Science Alliance Heidelberg Mannheim · hei INNOVATION · H3 Health Hub A Helmholtz Transfer Academy

Region Rhine-Main

biomindz Life Science Hub Mainz · FUTURY · Healthcare Shapers · JGU Johannes Gutenberg Universität Mainz · lzm. · RHEIN-MAIN UNIVERSITÄTEN · JGU UNIVERSITÄTSmedizin. MAINZ

Region Southwest

dkfz. German Cancer Research Center in the Helmholtz Association · DKTK German Cancer Consortium · UNIVERSITÄTS KLINIKUM FREIBURG · Universitätsklinikum Tübingen

GCT
National Strategy
Gene- and Cell-Based Therapies
GeneNovate®

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GeneNovate®

Empowering Innovators and Entrepreneurs in Gene and Cell-Based Therapies

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