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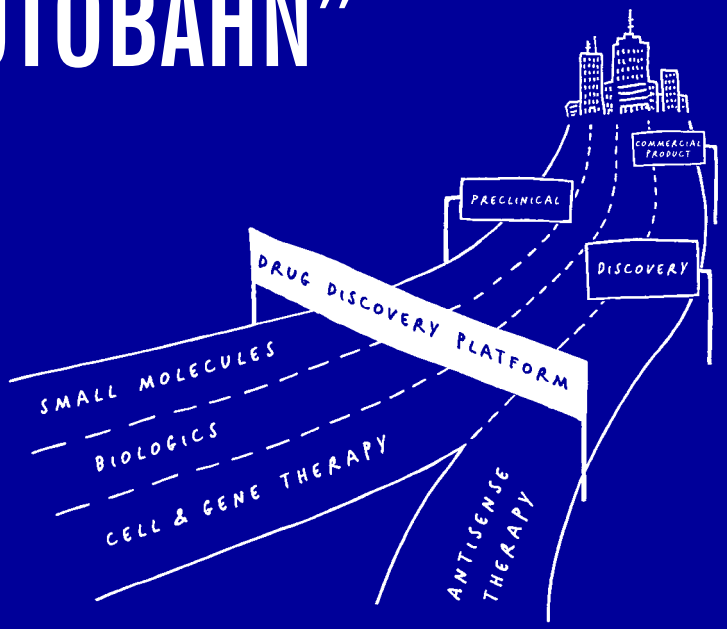
DRUG DISCOVERY INSIGHTS

EVOTEC AND SECARNA COLLABORATE ON ANTISENSE OLIGONUCLEO-TIDES (ASO) DRUG DISCOVERY

BROADENING THE MULTIMODALITY "AUTOBAHN"



Cutting-edge antisense drug discovery capabilities and capacities through the collaboration between

SECARNA + evotec

THE EVOTEC – SECARNA COLLABORATION

Mission

- Jointly working on projects for a co-owned pipeline across a broad range of different indications
- Both parties will combine their state-of-the-art platforms to maximise the efficiency and power to identify new antisense therapeutics

Agreement

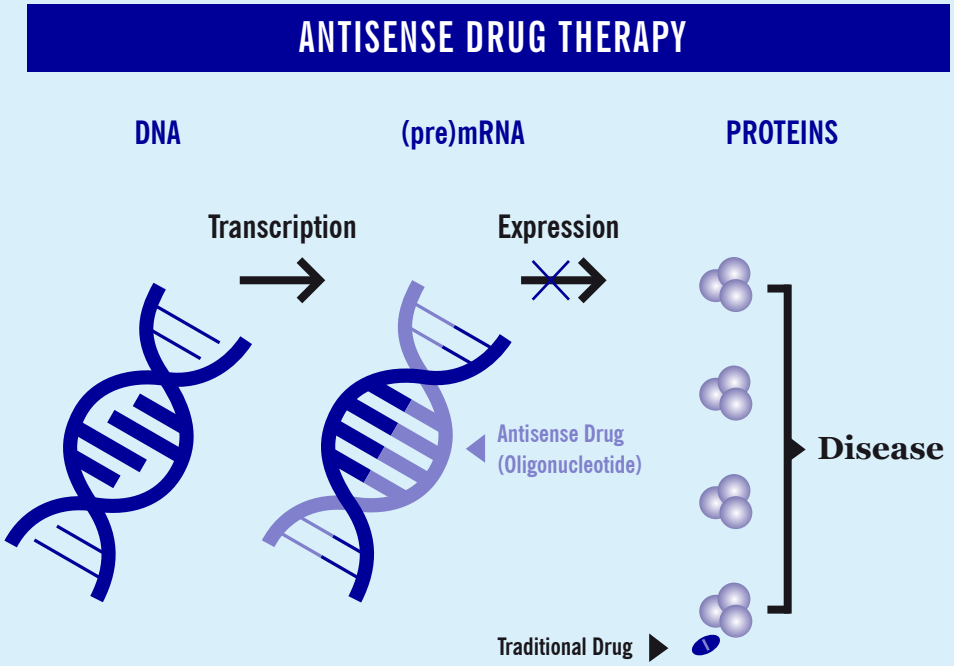
- Joint long-term multi-target drug discovery alliance
- Secarna provides its proprietary LNAplus™-based antisense molecules for the collaboration
- Evotec is responsible for further development of these molecules and subsequent partnering
- Projects will be co-owned
- Evotec's partners can access antisense therapeutics through a variety of individual deal structures

WHAT IS ANTISENSE THERAPY?

Antisense therapy *is a form of treatment that is clearly distinguished from traditional approaches such as small molecule or antibody-based approaches. While the latter modulate (suppress or activate) the function of an existing protein target, ASOs interfere with the production of the protein. ASOs are short chemically modified DNA-strands that are designed to be complementary to the target (pre)mRNA.*

By binding to the target *(pre)mRNA followed by degradation of the (pre)mRNA ASOs suppress target expression. ASOs can also be directed against long noncoding RNAs (lncRNAs) and microRNAs (miRNAs) and used for modulation of downstream gene expression. Furthermore, mRNA splicing can be modulated by ASOs directed against regions involved in splicing processes. With these different possibilities ASOs can be directed against a broad variety of targets, also those which are considered undruggable on the protein level.*

Since the genetic information *of most organisms is known, the design of ASOs is a rational, fast and efficient process.*



SECARNA – A LEADING ANTISENSE DRUG DISCOVERY COMPANY

Secarna has developed technical capabilities and expertise in the discovery and development of third-generation antisense therapeutics.

Present the technology and the uniqueness

ANTISENSE OLIGONUCLEOTIDES FILL A POSITION NOT OR INSUFFICIENTLY ADDRESSED BY MORE TRADITIONAL APPROACHES

ADDRESS **UNDRUGGABLE** TARGETS

- Inaccessible to antibodies
- Without function/surface that can be targeted by small molecules

ADDRESS **CHALLENGING** TARGETS

- Selective inhibition of targets with high structural homology to unwanted off-targets

PROVEN FOR DIFFERENT MODES OF ADMINISTRATION

DIRECT PATIENT TREATMENT

- Unique and well-characterised biodistribution and pharmacokinetics
- Can be manipulated by conjugation to targeting moieties

SYSTEMIC TREATMENT

- Intravenous infusion
- Subcutaneous injection

LOCAL TREATMENT

- Intrathecal
- Intravitreal
- Inhalation

***EX VIVO* TREATMENT OF CELLS IN THE SETTING OF CELL THERAPIES**

TRANSIENT TARGET KNOCKDOWN *EX VIVO* TO IMPROVE:

- Manufacturing process
- Safety of cell product
- Efficacy of cell product

Key advantages of 3rd generation LNA chemistry used by Secarna

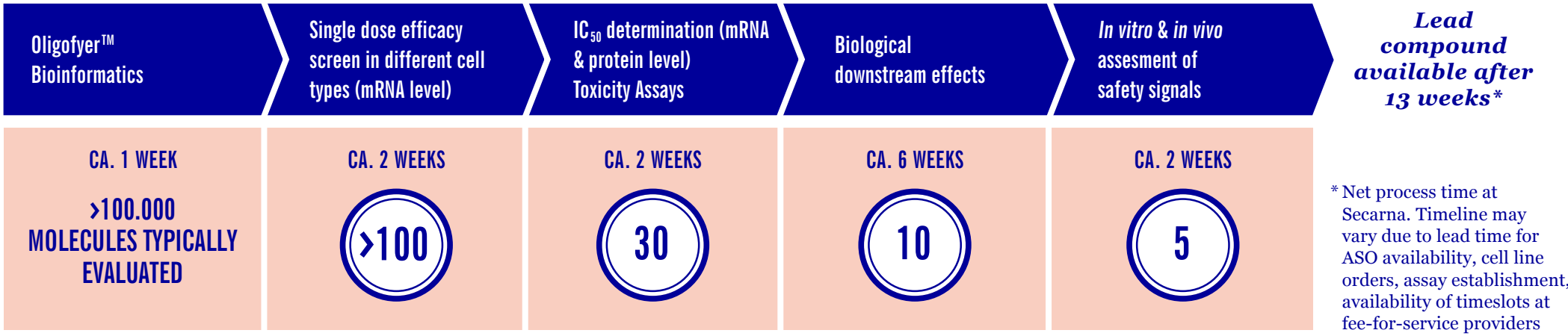
For systemic administration:

- Exceptional target knockdown by unconjugated and unformulated ASOs in tissues with strong biodistribution such as liver and kidney
- Good target knockdown achievable in a variety of other tissues including tumors
- In contrast to siRNA no delivery system required *in vivo* and *in vitro*

For ex vivo applications:

- Potent target knockdown achievable without delivery system and without impairment of cell viability in multitude of cells suitable for cell therapy
- Target knockdown can last for > 7 days after removal of ASO

Rapid and efficient generation of highly active and well-tolerated LNAplus™ candidates as key competitive advantage

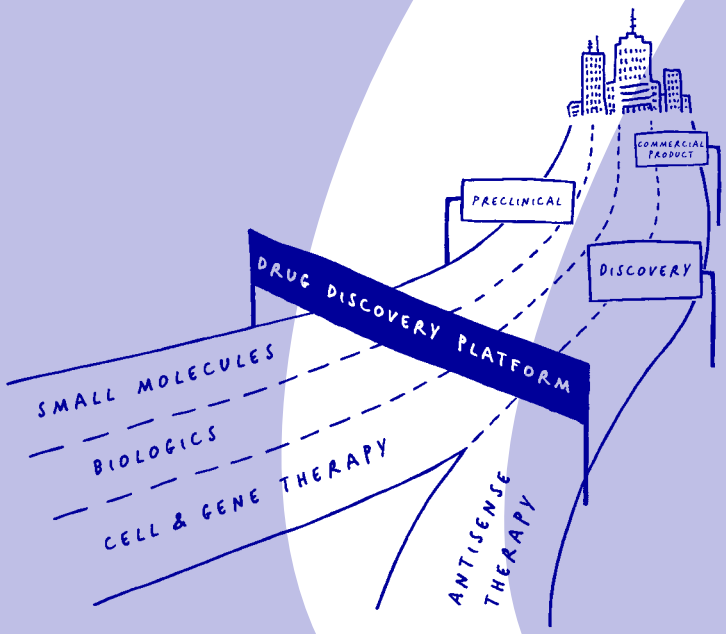


* Net process time at Secarna. Timeline may vary due to lead time for ASO availability, cell line orders, assay establishment, availability of timeslots at fee-for-service providers

- *Application of stringent filtering criteria during Oligofyer™ bioinformatic selection process strongly reduces the number of compounds tested in wet screens by elimination of unspecific, potentially toxic or inactive compounds*
- *Multitude of well-characterised cell-based screening assays established at Secarna covering major disease indications*
- *Elimination of potentially toxic compounds early during compound characterisation step. Most relevant toxicities are covered*
- *Target- and disease-tailored investigation of in vitro proof of concept in sophisticated cell-based assays*
- *Selection of most tolerated compounds in vivo*
- *Hit-to-lead optimisation possible – if required – at certain steps*

LNAplus™ has already been validated by development pipeline and several commercial partnering transactions

Evotec & Secarna – A perfect fit of capacities and capabilities



If you want to know more about the alliance or our ASO capabilities and capacities, please contact: info@evotec.com or info@secarna.com