MATWIN
MATURATION & ACCELERATING TRANSLATION **WITH INDUSTRY**

TECHNOLOGY OFFER

SUPPORTING INNOVATION AND TECHNOLOGY TRANSFER IN ONCOLOGY

THERAPY

Therapeutics for solid cancers

GENERAL APPROACH FOR TARGETING SOLID TUMOURS

CONTEXT & BACKGROUND

Targeted therapeutics have recently achieved tremendous success in eradicating a number of hematological malignancies (CAR-T, ADC, IO). Nonetheless, solid tumours still remain extremely difficult to target for all existing approaches. The main reasons of this diminished susceptibility to current treatments are: (a) suppressive tumour microenvironment, (b) lack of specific tumour antigens, (c) hindered tumour penetration. These three problematics are being addressed by the company and novel approaches have been developed:

a). One lead compound of the company (S..1001) is a small molecule drug that makes use of a hallmark of many solid cancers: presence of a specific (normally lysosomal) enzyme in the extracellular matrix of the tumour. The molecule is consisted of three parts: a clinically validated highly potent cytotoxic agent (responsible for the activity), an enzyme-specific release trigger (responsible for targeting the microenvironment of the tumour), and an albumin-binding group (responsible for prolongated circulation time and avoiding lysosomal digestion of the molecule). The candidate has demonstrated unprecedented levels of efficacy in orthotopic in vivo models of colorectal, pancreatic and triple-negative breast cancers. The company is looking for industrial partners for out-licencing or co-development of the candidate.

b). Another lead compound of the company (S..2103) is an antibody-drug conjugate with low drug-to-antibody ratio (DAR) of precisely 1. The obtained results indicate that, when normalized on the amount of the cytotoxin, company's DAR 1 ADC has much higher efficacy, compared to classically used ADC formats (having high loading of 4 or 2 cytotoxic moieties per antibody). The hypothesized reason for this improvement of the efficacy are: longer circulation time and deeper penetration into the tumor. The candidate is being co-developed with a biotech partner for prostate cancer. Ongoing stage: evaluation of toxicity of this ADC format (low drug loading) in cynomolgus monkeys (results expected in 1Q2019).

c). The company is exploring a new target for antibody-based therapies of melanoma (CD-XXX). The results generated with a mouse antibody are promising, the antibody humanization is ongoing, the in vivo tests of S...2104 (ADC based on the antibody) are scheduled (2Q2019). Low-drug load format (see candidate 2103 description) has been selected for the first evaluation.

The company is looking for an industrial partner for both co-development of proprietary drug candidates, and for the evaluation of proprietary technology platform (application to partner's candidates).

SCOPE

Targeted therapies – discovery and development

KEYWORDS

Cancer therapeutics, small molecules, antibody-drug conjugates, immunoconjugates, pancreatic cancer, TNBC, colorectal cancer, prostate cancer, melanoma

INNOVATIVE COMPONENT & TECHNOLOGY

Proprietary drug candidates targeting solid tumours (tumour microenvironment, improved penetration, novel target), a ready-to-use platform to generate improved therapeutics for solid tumours.

OBJECTIVES

The ultimate goal of the company is to bring to the market a new generation of efficient therapeutics of solid tumours. Both small molecules and biologics are being evaluated and developed internally. The candidates are available for out-licensing or co-development; the technology platform may be applied to partners' candidates to improve their efficacy in solid cancers.

DEVELOPMENT & MATURATION STAGE

An enhanced therapeutic efficacy of the company's drug candidates was successfully demonstrated in vitro and in vivo.
A pipeline of 4 targeted solid cancer therapeutics is currently under development. The product pipeline includes:
1. S..1001 – proprietary targeted small molecule for colorectal, pancreatic and triple-negative breast cancers.
Full in vivo package, ready for regulatory toxicology. Available for out-licencing or co-development.
2. S..2101 – an internalising ADC co-developped with a biotech company. Finished GMP preparation and regulatory toxicology. Developed by Biotech1, enters the clinic in 2019.
3. S..2103 – low drug-load ADC for prostate cancer. In vivo validated, toxicology validation in cynomolgus monkeys is ongoing. Co-developing with Biotech2.
4. S..2204 – ADC against a novel target found in melanoma. Ongoing preclinical development. Available for co-development.

INTELLECTUAL PROPERTY & PATIENT CO-OWNER(S)

The company holds exclusive worldwide rights for its technology platform and drug candidates derived from the platform.

STRENGHTS & COMPETITIVE ADVANTAGES

The company has a diversified portfolio of technologies for generation of drug candidates with improved efficacy in solid cancer. This is achieved by combining three new approaches for better solid tumour targeting, penetration, and drug release.

INDUSTRIAL APPLICATIONS & OPPORTUNITIES

Co-development of drug candidates (small molecules and biologics) to transform lives of patients with solid cancer.

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