Resminostat demonstrates potential to significantly alleviate itching in CTCL patients

- **Resminostat reduces the expression of IL-31 – a messenger molecule which is associated with itching in patients with cutaneous T-cell lymphoma (CTCL)**
- **Resminostat therefore has the potential to alleviate one of the major disease burdens in affected patients**
- **Poster presentation at the EORTC CLTF Meeting on 15 October 2017 at 9 a.m. (BST) in London, UK**

Planegg-Martinsried, Germany, 10 October 2017 – 4SC AG (4SC, FSE Prime Standard: VSC) is currently investigating resminostat as maintenance therapy in the pivotal RESMAIN study in advanced-stage cutaneous T-cell lymphoma (CTCL) and this new preclinical data provides a better understanding of the molecular basis of resminostat's anti-itching potential in patients with CTCL.

Itching in CTCL

CTCL is a blood cancer that arises from the malignant transformation of T cells – a specialized immune cell – where patients suffer from disfigurement and severe itching. To date, the underlying molecular mechanism of itching in CTCL has not been well understood and established anti-itching drugs such as anti-histamines have proven ineffective in CTCL patients.

Resminostat down-regulates itching-associated molecule in CTCL cell line

"From historical data we know that the messenger molecule IL-31 is produced by malignant T-cell populations in CTCL and high levels of IL-31 correlate with itching. It has also been established that in comparison to other treatment options, inhibitors of histone deacetylases (HDAC) can more effectively reduce itching in these patients," explained Roland Baumgartner, Ph.D., Chief Scientific Officer of 4SC.

"Resminostat is an HDAC inhibitor that reactivates silenced genes in cancer cells and downregulates excessively active genomic areas. We performed a genome-wide analysis of a CTCL cell line before and after addition of resminostat and found that the expression of IL-31 was significantly reduced after treatment with resminostat. These new data provide an important addition to our understanding of how resminostat can alleviate itching in these patients, and in addition, given that time to symptom worsening is one of the major endpoints in our RESMAIN study, these data support our clinical development plans to advance resminostat to market authorization and to offer a new and effective treatment option to CTCL patients and physicians."

Poster presentation at the EORTC CLTF Meeting

Matthias Borgmann, Ph.D., Product Manager (Resminostat) of 4SC, will present the scientific details at the EORTC CLTF Meeting | Cutaneous Lymphomas: Insights & Therapeutic Progress 2017 Meeting.

Posters	Resminostat's action in CTCL – hints from a genome-wide study
	A multicentre, double blind, randomised, placebo controlled, Phase II trial to evaluate Resminostat for maintenance treatment of patients with advanced stage (Stage IIB IVB) mycosis fungoides (MF) or Sézary Syndrome (SS) that have achieved disease control with systemic therapy – the RESMAIN Study
Time	Poster Session, 15 October 2017, 9:00 to 10:15 a.m. (BST)
Location	Hilton London Tower Bridge Hotel, United Kingdom

- Press release ends -

Related articles

13 September 2017, Phase I study of 4SC's resminostat indicates efficacy in biliary tract cancer

30 May 2017, Resminostat enhances immune cell cancer cell interaction

3 May 2017, Progress update on pivotal RESMAIN study of resminostat in CTCL at 13th Congress of the EADO

Further information

About resminostat

Resminostat is orally administered and potentially offers a novel approach for the treatment of a wide variety of cancers, both as monotherapy and in combination therapy with other anti-cancer drugs. Resminostat inhibits tumor growth and proliferation, causes tumor regression, and strengthens the body's immune response to cancer.

Resminostat has been shown to be well tolerated in several clinical trials. Resminostat is currently being investigated in a Phase II pivotal study in cutaneous T-cell lymphoma (CTCL) by 4SC. A Phase II study in biliary tract cancer is planned by 4SC's development partner Yakult Honsha in Japan. Amongst others, resminostat has previously been investigated in biliary tract or pancreatic cancer and hepatocellular carcinoma (HCC).

About cutaneous T-cell lymphoma (CTCL)

CTCL is a rare disease with approximately 5,000 patients being newly diagnosed in Europe each year. The disease arises from malignant transformation of T cells, a specialized subgroup of immune cells, primarily affects the skin, but may ultimately involve lymph nodes, blood and visceral organs.

Currently, CTCL is not curable and treatment options for advanced-stage CTCL are limited. Although patients respond to the available treatment options, the duration of response is often short-lived and declines as the severity of the disease increases. The key therapeutic challenge in advanced-stage CTCL is therefore to make remissions more durable, halting disease progression, improving quality of life and prolonging progression free and overall survival.

About the RESMAIN study – Resminostat for maintenance treatment of CTCL

The RESMAIN pivotal study is open for recruitment since November 2016 and is being conducted at more than 50 clinical centers in 11 European countries. It will include 150 patients who suffer from advanced-stage cutaneous T-cell lymphoma (CTCL) and have achieved disease control with systemic therapy. The patients are randomized 1:1 to receive either resminostat or placebo. Patients who experience disease progression – while being on placebo – will be offered resminostat in an open label treatment arm.

The primary goal of the study is to determine whether maintenance treatment with resminostat prolongs progression-free survival and the key secondary objective is to prolong the time to

symptom worsening (itching). A comprehensive biomarker program is also included in the study to ensure vital knowledge about the biological background of resminostat treatment and CTCL is acquired. 4SC anticipates top-line data to be available in 2019.

About 4SC

4SC AG is a clinical-stage biopharmaceutical company developing small-molecule drugs that can target key indications in cancer with high unmet medical needs. Such drugs are intended to provide patients with innovative treatment options that are more tolerable and efficacious than existing therapies and provide a better quality of life. 4SC's pipeline is protected by a comprehensive portfolio of patents and comprises promising products that are in various stages of preclinical and clinical development. 4SC's core assets include resminostat, 4SC-202 and 4SC-208.

4SC aims to generate future growth and enhance its enterprise value by entering into partnerships with pharmaceutical and biotech companies and/or the eventual marketing and sales of approved drugs in select territories by 4SC itself. 4SC had 47 employees as of 25 August 2017 and is listed on the Prime Standard of the Frankfurt Stock Exchange (FSE Prime Standard: VSC; ISIN: DE000A14KL72).

Forward-looking information

Information set forth in this press release contains forward-looking statements, which involve risks and uncertainties. The forward-looking statements contained herein represent the judgement of 4SC as of the date of this press release. Such forward-looking statements are neither promises nor guarantees, but are subject to a variety of risks and uncertainties, many of which are beyond 4SC's control, and which could cause actual results to differ materially from those contemplated in these forward-looking statements. 4SC expressly disclaims any obligation or undertaking to release any updates or revisions to any such statements to reflect any change in its expectations or any change in events, conditions or circumstances on which any such statement is based.

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