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## **Santhera's MICONOS Trial with Catena®/Sovrima® in Friedreich's Ataxia Misses Primary Endpoint**

**Liestal, Switzerland, May 20, 2010 – Santhera Pharmaceuticals (SIX: SANN) announced today that its MICONOS Phase III study evaluating Catena®/Sovrima® for the treatment of Friedreich's Ataxia missed its primary endpoint. Trends towards improvement in the key neurological endpoint were however identified by a meta-analysis of all Santhera's Phase II and III studies in the same indication. MICONOS also confirmed that Catena®/Sovrima® is safe and well tolerated at doses of up to 2250 mg/day.**

The 12-month MICONOS (Mitochondrial Protection with Idebenone In Cardiac Or Neurological Outcome Study) study enrolled 232 primarily adult patients and evaluated the safety and efficacy of three doses of Catena®/Sovrima® compared to that of placebo. Analysis of the primary endpoint of the study, mean change in the International Cooperative Ataxia Rating Scale (ICARS) score from baseline, did not detect any significant difference between the active dose arms and placebo. Secondary endpoints, including the proportion of patients improving on ICARS score (responder analysis) and change in the Friedreich's Ataxia Rating Scale also did not show statistically significant differences between the placebo and active dose groups. Although a detailed analysis of cardiac endpoints is still ongoing, there was no difference between the active and placebo groups in the key cardio logical secondary endpoint assessing a combination of anatomical and functional cardiac parameters.

A meta-analysis of Santhera's three Phase II and III studies including 344 patients of all age groups and disease stages showed trends for improvement on Catena®/Sovrima® in the mean change in ICARS score in the combined mid- and high dose groups compared to placebo ( $p=0.083$ ) as well as in the high dose group compared to placebo ( $p=0.088$ ). Similarly, a larger proportion of patients improved by at least 2.5 ICARS points over a six months treatment period in the Catena®/Sovrima dose groups (placebo: 30.4%; mid-dose group 39.1%; high dose group 41.9%) and comparison with placebo showed a trend in favor of the combined mid and high dose groups ( $p=0.10$ ) and the high dose group ( $p=0.098$ ).

The pharmacokinetic analyses of study participants revealed detectable levels of idebenone or its metabolites in the blood of 12% of the patients in the placebo arm. With the exception of one, none of these individuals declared prior use of idebenone before joining the MICONOS study.

**Webcast/Teleconference**

At **17:00 CET / 16:00 UKT / 11:00 EST** on **May 20, 2010**, Santhera's management will host a teleconference/webcast. You can either join the **webcast on [www.santhera.com/webcast](http://www.santhera.com/webcast)** or the **teleconference** using the conference **ID 76973094** and one of the following dial-ins:

Europe +44 (0) 1452 555 566  
USA +1 866 966 9439  
Canada +1 866 966 0399

The webcast will be available for playback one hour after the analyst presentation ends.

Thomas Meier, Chief Scientific Officer, commented: "We are surprised and disappointed by the MICONOS results. The outcome of the study represents a major set-back for us and the whole Friedreich's Ataxia community. However, we now have results from three clinical studies which, when combined, show a trend for superiority of Catena®/Sovrima® compared to placebo as assessed by the ICARS. Before deciding on how to proceed with the development program, we will analyze the data from the two ongoing extension studies which will provide important long-term follow-up data on the use of the drug in Friedreich's Ataxia patients. Considering the data from all three clinical studies, we are convinced that individual patients benefit from Catena®/Sovrima®, although we were not able to demonstrate this conclusively in this clinical trial of still limited size and duration. In this slowly and variably progressing neurological disorder, where patients experience daily fluctuations in their disease status, it remains a challenge to demonstrate changes in neurological functions in the short-term."

Klaus Schollmeier, Chief Executive Officer, commented: "The MICONOS results are an unexpected setback for us. However, we have a broad late-stage pipeline which includes three distinct molecules in seven indications and we have sufficient cash reserves to fund it. We remain optimistic about the medical and commercial potential of Catena®/Sovrima® and now wait for data from the long-term extension studies in Friedreich's Ataxia, the RHODOS Phase II study in Leber's Hereditary Optic Neuropathy which are due within the next few weeks as well as from the MELTIMI Phase II study in MELAS syndrome. Interim data from the DELOS Phase III study in Duchenne Muscular Dystrophy, which is based on a different mechanism of action, are also expected in the second half of this year."

Santhera's late-stage pipeline includes Catena®/Sovrima® in four additional indications, fipamezole in Dyskinesia in Parkinson's Disease currently prepared for Phase III development in the United States of America by partner Biovail, and omigapil in Congenital Muscular Dystrophy, which is in preparation for a Phase II/III study. All development programs cover a high unmet medical need and address substantial market opportunities in niche and orphan indications.

**About the MICONOS study**

The MICONOS study was a randomized, double blind, placebo controlled trial testing the efficacy and safety of three doses of Catena®/Sovrima® and placebo over a 12 months treatment period. The doses tested were 180/360 mg/day (low dose for patients ≤ and >45 kg body weight), 450/900 mg/day (mid-dose) and 1350/2250 mg/day (high dose). Patients of all age groups and disease stages were enrolled into the study, which was initiated in December 2005 and conducted in 13 study centers in Europe.

**About Friedreich's Ataxia**

Friedreich's Ataxia is a devastating inherited disease associated with progressive neurodegeneration. The disorder is caused by mutations in the gene that encodes for frataxin. Lack of this protein impairs the energy production in the mitochondria, the energy production centers in each cell, and damages nervous and cardiac tissue.

First symptoms typically develop from around 5 to 15 years of age. Coordination difficulties such as unsteady gait, frequent falls or clumsiness usually appear first. Gait ataxia then spreads to the arms and the trunk. Speech is almost always affected, making communication increasingly difficult. Patients become wheelchair-bound and require continuous care. Cardiomyopathy is a common complication of Friedreich's Ataxia and while it may be asymptomatic early on, it remains a leading cause of death.

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**About Santhera**

Santhera Pharmaceuticals (SIX: SANN) is a Swiss specialty pharmaceutical company focused on the development and commercialization of innovative pharmaceutical products for the treatment of severe neuromuscular diseases, an area of high unmet medical need which includes many orphan indications with no current therapy. Santhera's first product, Catena® to treat Friedreich's Ataxia, is marketed in Canada. The drug is also being investigated in a Phase III study in Duchenne Muscular Dystrophy for which commercial rights in Europe are licensed to Takeda Pharmaceutical. Santhera's second compound fipamezole recently showed efficacy in reducing levodopa-induced Dyskinesia in Parkinson's Disease. Phase III development and commercialization rights in the United States and Canada are partnered with Biovail. For further information, please visit the Company's web site [www.santhera.com](http://www.santhera.com).

*Catena® is a trademark of Santhera Pharmaceuticals.*

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