

March 22, 2021

Press Release

DS Pharma Animal Health Co., Ltd.

**DS Pharma Animal Health Announces World's First Marketing
Authorization Approval for a Canine Allogeneic Adipose Tissue-Derived
Mesenchymal Stem Cell Product, Stemcure®**

DS Pharma Animal Health Co., Ltd. (Head Office: Chuo-ku, Osaka, Japan; President & CEO: Kazuhiro Takada) announced today that it received marketing authorization on March 19 for Stemcure® (development code: A-110), a canine allogeneic^{*1} adipose tissue-derived mesenchymal stem cell^{*2} product that is classified as a veterinary regenerative medical product^{*3} (animal somatic stem cell-processed product^{*4}). This is the world's first^{*5} authorization approval for the manufacture and marketing of a veterinary regenerative medical product whose main ingredient is canine allogeneic adipose tissue-derived mesenchymal stem cells.

Based on the results of clinical trials for thoracolumbar intervertebral disk herniation in dogs, DS Pharma Animal Health submitted an application for marketing authorization of Stemcure® on June 14, 2019. It has been approved as an animal somatic stem cell-processed product for regenerative medical product for use in animals in accordance with Article 23-26 (Conditional and Time-Limited Approval^{*6}) of the Act on Securing Quality, Efficacy and Safety of Products Including Pharmaceuticals and Medical Devices (Pharmaceutical Affairs Law).

Intervertebral disk herniation in dogs is caused by trauma, aging, or genetic factors with spinal cord compression due to disk protrusion into the spinal canal. Thoracolumbar intervertebral disk herniation can result in paralysis of the hind limbs, making walking difficult and interfering with urination and defecation, which can significantly reduce the quality of life of the dog owner's family as well as that of the affected dog. Depending on the severity of the condition, surgical treatment or conservative therapy may be instituted, but in some cases recovery cannot be expected, and new treatment methods have been highly anticipated.

Mesenchymal stem cells are thought to promote the recovery of nerve cell functions damaged by disk herniation by secreting certain humoral factors. The mechanism of action of Stemcure® may include the anti-inflammatory effects of transforming growth factor- β , prostaglandin E2, indoleamine-2,3-dioxygenase, or other agents, the angiogenic effects of vascular endothelial growth factor, and the neuroprotective effects of nerve growth factor.

DS Pharma Animal Health began research into veterinary regenerative medical products in 2015, and with technical support provided by Sumitomo Dainippon Pharma Co. Ltd., established the Ikeda Regenerative and Cellular Medicine Center for Animals (Ikeda, Osaka Prefecture), building a system that enables reliable research, development, and manufacturing of safe and high-quality veterinary regenerative medical products. With the marketing authorization gained for this groundbreaking new product, DS Pharma Animal Health seeks to contribute to the treatment of thoracolumbar intervertebral disk herniation in dogs in Japan by offering a new treatment option for this previously intractable disease.

Further Information

1. Overview of Stemcure®

Product name:	Stemcure®
Constituent cells:	Canine allogeneic adipose tissue-derived mesenchymal stem cells
Content:	2.5×10 ⁶ cells in 1 mL
Packaging:	One vial (1 mL) or one vial (2 mL)
Indication:	Improvement of clinical signs associated with thoracolumbar intervertebral disk herniation in dogs
Dosage and Administration:	Dilute 0.5 to 1 × 10 ⁶ canine mesenchymal stem cells per 1 kg body weight using 5% Glucose Injection JP to adjust the infusion volume to 30 mL, then using a transfusion set for red blood cells with an integral mesh filter, slowly infuse the entire amount at a rate of 0.5 mL per minute. Administer once weekly with a dosing interval of no less than 5 days, for a total duration of 3 weeks.
Marketing Authorization Holder:	DS Pharma Animal Health Co., Ltd.
Date of Marketing Authorization:	March 19, 2021

2. Explanation of Terms

Terms	Explanations
*1. Allogeneic	Means from the same species, but not from the same individual.
*2. Mesenchymal stem cells	Mesenchymal stem cells are cells that are found in various tissues of the body that have the potential to become osteoblasts, adipocytes, chondrocytes, myocytes, and other types of cells. It has been reported that the functions of these cells include the repair of damaged tissues and regulation of the immune system (suppression of excessive inflammatory response).

*3. Veterinary regenerative medical product	A regenerative medical product that is exclusively for use in animals.
*4. Animal somatic stem cell-processed product	Products derived from animal cells that are made by culturing animal cells or other processing method for the purpose of “reconstruction, repairing or formation of the structure or function of the bodies of humans or animals” or the “treatment or prevention of disease in humans or animals.” As this product made by DS Pharma Animal Health contains mesenchymal stem cells, it is classified as an animal somatic stem cell-processed product.
*5. World’s first	To the best of our knowledge (as of March 19, 2021), this is the first authorization anywhere in the world for the manufacture and marketing of a veterinary regenerative medical product whose main ingredient is canine allogeneic adipose tissue-derived mesenchymal stem cells.
*6. Conditional and Time-Limited Approval	<p>Approval Conditions:</p> <ul style="list-style-type: none"> · Stemcure® must only be used under the guidance of a veterinarian with sufficient knowledge and experience in the diagnosis and treatment of intervertebral disk herniation in dogs; in a setting for animals under treatment for which the use of Stemcure® is deemed appropriate; and in which appropriate measures are taken such as the checking of vital signs and monitoring of laboratory test values. · During the period from the start of the conditional and time-limited approval until the application for marketing approval is submitted again, postmarketing clinical studies of efficacy and safety must be conducted for an adequate number of affected animals <p>Duration of Approval: 7 years</p>

DS Pharma Animal Health Co., Ltd

DS Pharma Animal Health Co., Ltd. is an R&D-focused manufacturer of veterinary medicines that was established in July 2010 by spinning off the animal health business of Sumitomo Dainippon Pharma Co., Ltd. Our corporate policy aims to contribute to happiness in people’s lives by supporting the health of animals. Based on our experience and achievements in veterinary medicines, we are making advances in three business sectors: a companion animal business that supports the bonds between humans and animals, a livestock and aquaculture business that supports a better life for society, and a laboratory testing business that is indispensable to definitive diagnosis.

In addition, we are transforming ourselves into a company that offers more comprehensive solutions, expanding our business areas that were previously limited to medicines and functional foods to the overall needs of veterinarians and customers, covering the entire health cycle from examination to testing, diagnosis, drug treatment, and after-care.

For further information, see our website at <https://animal.ds-pharma.co.jp/>

Inquiries

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