

Exception/Exemptions
10/2018-9/2019 Fiscal Year

Species: Ovine**Studies:**

HVT025-IS16

Animal Number:

6

Max Duration:

8 Days

Animals were restrained by a cross ties for the duration of the 8 day study. The study required constant administration of an anticoagulant to meet the endpoints and mitigate risk of clotting, which required the animals to be connected to tubing, along with an externalization of the test article. The animals were restrained from moving freely during the treatment period due to the risk of dislodgement of tubing and subsequent bleeding. A break could not be given to the animals from the cross tie due to the possibility of dislodgement of the test article or medication lines.

The animals were free to stand and lay down but were unable to rotate. Animals were also offered hay *ad libitum* for enrichment and feed.

Species: Ovine**Studies:**

SAM001-IS75

Animal Number:

4

Max Duration:

11 days

SAM002-IS75

4

12 days

SAM003-IS75

5

13 days

SAM004-IS75

5

13 days

Exemption: housing space requirements

Animals were cross-tied for the duration of the experiment, up to 13 days based on study. There are several reasons for this level of restraint: 1) the animals will have a central venous line (CVL) and a lead running from the device in the aorta to the controller coming from their vessels to the outside. If either were to be removed unintentionally (i.e. by chewing or being caught on something), significant to life-threatening hemorrhage could occur. 2) The animals were receiving a heparin infusion to prevent clot formation in their aorta (via CVL) that would increase any bleeding resulting from what would otherwise be minor traumas. As discussed in the previous point, this could lead to life-threatening hemorrhage. On the other hand, should the CRI be disrupted by the animal (i.e. by chewing or being caught on something) and the coagulation time normalize, the animal may develop intra-arterial thrombi that could lead to thromboembolism while on study.

All animals to be used were acclimatized to the cross-ties for 10 sessions prior to the initial procedure. Animals that failed to tolerate the cross-ties for >4 hours were excluded from the study. Animals were given a 10-15 minute break every 4 hours from cross-tying if staff are present to supervise and prevent injury to the animal, lead exteriorization sites and/or CVL exteriorization sites. The animals were free to stand and lay down but were unable to rotate. Animals were also offered hay *ad libitum* for enrichment and feed.

Species: Ovine**Studies:**

SDH003-IS21

Animal Number:

6

Max Duration:

9 days

SDH003-IS21

6

11 days

During the treatment the animals were required to wear a backpack carrying the test article and were connected to multiple devices, including portions of the device, a pump for administering IV fluids and medications and a console for making blood flow measurements. For up to 11 days of the study, the animals were cross tied. In this instance it would be detrimental to animal health and study endpoints for the tubing to become dislodged or removed, in which case would require euthanasia of the animal without meeting study endpoints.

All animals to be used were acclimatized to the cross-ties for 10 sessions prior to the initial procedure. Animals that failed to tolerate the cross-ties for >4 hours were excluded from the study. The animals were free to stand and lay down but were unable to rotate. The animals were monitored during the day and night during this time and allowed to move freely, with observation and guidance, 3-4 times a day for up to an hour. Animals were also offered hay *ad libitum* for enrichment and feed.