United States Department of Agriculture
Animal and Plant Health Inspection Service
Center for Veterinary Biologics
P. O. Box 844
Ames, IA 50010

1. Reagent Name: *Leptospira icterohaemorrhagiae* Challenge Culture

2. Strain or Source: CF-1, NVSL No. 11403

3. Lot Number: IRP 655

4. Fill Date: March 30, 2017

5. Expiration Date: December 31, 2028

Precautions: *Leptospira* spp. are classified as a biosafety level 2 pathogen. Handle under a biological safety hood while wearing gloves. Use face shield when inoculating animals.

6. Intended Use: Challenge material for *L. icterohaemorrhagiae* testing.

7. Instructions for Use: Remove vials from cold storage and thaw at room temperature (18°C - 27°C) for approximately 1 hour. A water bath or other warming device is not recommended. Do not vortex during thawing. An 18-gauge needle is recommended to remove cryopreserved challenge from the vial. You may draw the contents of more than one vial into a single syringe for convenience. However, to limit spirochete stress and minimize the human safety risk when working with a zoonotic agent, do not actively mix the contents of separate vials.

Inoculate 50-90 g hamsters, preferably four hamsters total, with cryopreserved challenge using a 23-gauge or smaller bore needle. Each hamster should receive at least 0.25 mL IP. At least 50 percent of the inoculated hamsters should exhibit clinical signs within 10 days post-inoculation, and clinical signs within 4-5 days is expected. Hamster death prior to 3 days should not be attributed to leptospirosis. The *Leptospira* must be serially transferred through hamsters a minimum of three times before used as challenge material in a potency test according to Supplemental Assay Method (SAM) 610.

8. Test of Reagent: Identity was confirmed by ELISA, MAT, REA and MLST analysis. IRP 655 was verified as a virulent challenge when used in potency tests conducted according to SAM 610. The culture was negative for extraneous bacteria when incubated on blood agar plates at 37ºC after three passages in hamsters. No hemadsorbing or cytopathogenic viruses were present based on bovine, canine, and hamster cells testing. Fluorescent antibody staining verified the absence of the following: CCV, CPV, CDV, REO 1, Rabies, BVDV1, BVDV2, BPV, BTV, BAV1, BAV5 and BRSV. PCR also verified the absence of BVDV1, BVDV2, PCV1, PCV2, and PRRS.

9. Container Size, Type, Weight, or Volume: 2.0 mL cryovial containing 1.25 mL hamster liver homogenate with viable *L. icterohaemorrhagiae*.

10. Storage Conditions: For long-term storage, challenge should be maintained in liquid nitrogen. Challenge may be stored at -80°C for storage less than 1 week.

11. CVB Technical Contact: Bacteriology Section, Center for Veterinary Biologics, (515) 337-6100.

12. Origin and Passage History: Origin: Puerto Rico, dog isolate. Walter Reed Army Institute of Research through a commercial laboratory (1969). This strain is hamster virulent.

13. Method of Preparation: Liver tissue from an *L. icterohaemorrhagiae* infected hamster is homogenized in liquid P80-BA medium with trimethoprin, sulfamethoxazole, and 5-fluorouracil and flash-frozen. Challenge is then stored at in liquid nitrogen until use or shipment.

14. Other: None.

Reagent orders and feedback should be sent *including phone number* to the following email address: VS.DB.CVB.Reagent.Requests@usda.gov

Reagent orders forms (APHIS Form 2018) can be found on the CVB website.