Medicines & Healthcare products Regulatory Agency

NIBSC Confidence in Biological Medicines

Influenza Reagent
Influenza anti-A/Sydney/5/2021-like (H1N1) HA serum
NIBSC code: 22/224
Instructions for use
(Version 3.0, Dated 29/08/2025)

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1. INTENDED USE

Influenza antiserum reagent 22/224 is prepared for single radial diffusion assay of H1N1 A/Sydney/5/2021-like antigens using an appropriate NIBSC antigen reagent.

The antiserum reagent was prepared in sheep 798, 799, 800, 801, 802 and 803 using the purified HA of a A/Sydney/5/2021-like virus. The HA antigens were extracted from purified virus by treatment with bromelain and purified by sedimentation on sucrose gradients (Brand, CN and Skehel, JJ, Nature, New Biology, 1972, 238, 145-147).

2. CAUTION

This preparation is not for administration to humans or animals in the human food chain.
The material is not of human or bovine origin.

As with all materials of biological origin, this preparation should be regarded as potentially hazardous to health. It should be used and discarded according to your own laboratory's safety procedures. Such safety procedures should include the wearing of protective gloves and avoiding the generation of aerosols. Care should be exercised in opening ampoules or vials, to avoid cuts.

3. UNITAGE

No unitage is assigned to this material.

4. CONTENTS

Country of origin of biological material: United Kingdom.
The immunization schedule for sheep 798, 799, 800, 801, 802 and 803 was as follows: one dose of approximately 100 µg of A/Sydney/5/2021 (SAN-013) virus HA with Freund's Complete Adjuvant (FCA) was given intramuscularly, followed two weeks later with a 50 microgram dose of A/Sydney/5/2021 (SAN-013) including Freund's Incomplete Adjuvant (FIA). Three further 50 microgram doses of A/Sydney/5/2021 (SAN-013) HA including FIA were given after a week. Six weeks after the initial immunization, serum was collected and sodium azide (0.05% w/v) added.

For the inactivation of FMDV the antiserum was treated by maintenance of pH 5.5 (or lower) for at least 30 minutes followed by restoration of the original pH.

The antisera obtained from sheep 798, 799, 800, 801, 802 and 803 were pooled, diluted 1 : 5 with PBS buffer containing sodium azide (0.05% w/v), and filled into vials in 2ml volumes.

5. STORAGE

+2-8ºC
However, if it is intended to store the reagent for long periods i.e. >2 years, they may be stored at -20ºC. The antiserum can be frozen and thawed without any adverse impact on its use in the SRD assay.

6. DIRECTIONS FOR OPENING

Vials have a screw cap; an internal stopper may also be present. The cap should be removed by turning anti-clockwise. Care should be taken to prevent loss of the contents. Please note: If a stopper is present on removal of the cap, the stopper should remain in the vial or be removed with the cap.

7. USE OF MATERIAL

For the assay of antigens containing 20-50 micrograms of HA activity in 1ml, approximately 15-25 µl of the undiluted reagent should be added to 1ml agarose. It may be necessary to change the antiserum concentrations depending on the A/Sydney/5/2021-like antigen standard used or according to local laboratory conditions.
Antiserum Reagent 22/224 should be used according to the method described by Wood, JM, Schild, GC, Newman, RW and Seagroatt, VA. Journal of Biological Standardisation, 1977, 5, 2.

8. STABILITY

It is the policy of WHO not to assign an expiry date to their international reference materials. They remain valid with the assigned potency and status until withdrawn or amended.

Reference materials are held at NIBSC within assured, temperature-controlled storage facilities. Reference Materials should be stored on receipt as indicated on the label. Once reconstituted, diluted or aliquoted, users should determine the stability of the material according to their own method of preparation, storage and use.

NIBSC follows the policy of WHO with respect to its reference materials.

Users who have data supporting any deterioration in the characteristics of any reference preparation are encouraged to contact NIBSC. Reference materials are held at NIBSC within assured, temperature-controlled storage facilities. Reference Materials should be stored on receipt as indicated on the label.

9. REFERENCES

None

10. ACKNOWLEDGEMENTS

None

11. FURTHER INFORMATION

Further information can be obtained as follows;
This material: enquiries@nibsc.org
WHO Biological Standards:
http://www.who.int/biologicals/en/
JCTLM Higher order reference materials:
http://www.bipm.org/en/committees/jc/jctlm/
Derivation of International Units:
http://www.nibsc.org/standardisation/international_standards.aspx
Ordering standards from NIBSC:
http://www.nibsc.org/products/ordering.aspx
NIBSC Terms & Conditions:
http://www.nibsc.org/terms_and_conditions.aspx

12. CUSTOMER FEEDBACK

Customers are encouraged to provide feedback on the suitability or use of the material provided or other aspects of our service. Please send any comments to enquiries@nibsc.org

National Institute for Biological Standards and Control,
Potters Bar, Hertfordshire, EN6 3QG. T +44 (0)1707 641000, nibsc.org
WHO International Laboratory for Biological Standards,
UK Official Medicines Control Laboratory

13. CITATION

In all publications, including data sheets, in which this material is referenced, it is important that the preparation's title, its status, the NIBSC code number, and the name and address of NIBSC are cited and cited correctly.

14. MATERIAL SAFETY SHEET

Classification in accordance with Directive 2000/54/EC, Regulation (EC) No 1272/2008: 1

Physical and Chemical properties	
Physical appearance: Liquid	Corrosive: No
Stable: Yes	Oxidising: No
Hygroscopic: No	Irritant: No
Flammable: No	Handling: See caution, Section 2
Other (specify): (0.05% w/v)	Contains Sheep Serum and Sodium Azide
Toxicological properties	
Effects of inhalation:	Not established, avoid inhalation
Effects of ingestion:	Not established, avoid ingestion
Effects of skin absorption:	Not established, avoid contact with skin
Suggested First Aid	
Inhalation:	Seek medical advice
Ingestion:	Seek medical advice
Contact with eyes:	Wash with copious amounts of water. Seek medical advice
Contact with skin:	Wash thoroughly with water.
Action on Spillage and Method of Disposal	
Spillage of ampoule contents should be taken up with absorbent material wetted with an appropriate disinfectant. Rinse area with an appropriate disinfectant followed by water. Absorbent materials used to treat spillage should be treated as biological waste.	

15. LIABILITY AND LOSS

In the event that this document is translated into another language, the English language version shall prevail in the event of any inconsistencies between the documents.

Unless expressly stated otherwise by NIBSC, NIBSC's Standard Terms and Conditions for the Supply of Materials (available at http://www.nibsc.org/About_Us/Terms_and_Conditions.aspx or upon request by the Recipient) ("Conditions") apply to the exclusion of all other terms and are hereby incorporated into this document by reference. The Recipient's attention is drawn in particular to the provisions of clause 11 of the Conditions.

16. INFORMATION FOR CUSTOMS USE ONLY

Country of origin for customs purposes*: United Kingdom * Defined as the country where the goods have been produced and/or sufficiently processed to be classed as originating from the country of supply, for example a change of state such as freeze-drying.
Net weight: 2g
Toxicity Statement: Non toxic
Veterinary certificate or other statement if applicable. **Attached:** Yes SH798 SH799 SH800 SH801 SH802 SH803

Royal Veterinary College
University of London

Alex McSloy
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VETERINARY CERTIFICATE OF ANIMAL HEALTH

This is to certify that I have examined a Sheep with ear tag number: UK 010101005603 [Virology no. SH798], which has been used in the production of blood antiserum between 5th October 2022 and 15th November 2022. Both the ear tag number and the animals' record show that it is of UK origin.

This animal was a breeding Ewe which became surplus to requirements. In my opinion at the time of clinical examination, the ewe was in good health and showed no clinical signs of infectious disease.

Alex McSloy MA VetMB DipACVIM PhD MRCVS
Named Veterinary Surgeon

Date signed: 15 Nov 22

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VETERINARY CERTIFICATE OF ANIMAL HEALTH

This is to certify that I have examined a Sheep with ear tag number: UK 056403038192 [Virology no. SH799], which has been used in the production of blood antiserum between 5th October 2022 and 15th November 2022. Both the ear tag number and the animals' record show that it is of UK origin.

This animal was a breeding Ewe which became surplus to requirements. In my opinion at the time of clinical examination, the ewe was in good health and showed no clinical signs of infectious disease.

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VETERINARY CERTIFICATE OF ANIMAL HEALTH

This is to certify that I have examined a Sheep with ear tag number: UK 024126904851 [Virology no. SH800], which has been used in the production of blood antiserum between 5th October 2022 and 15th November 2022. Both the ear tag number and the animals' record show that it is of UK origin.

This animal was a breeding Ewe which became surplus to requirements. In my opinion at the time of clinical examination, the ewe was in good health and showed no clinical signs of infectious disease.

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This is to certify that I have examined a Sheep with ear tag number: UK 056165623496 [Virology no. SH801], which has been used in the production of blood antiserum between 5th October 2022 and 16th November 2022. Both the ear tag number and the animals' record show that it is of UK origin.

This animal was a breeding Ewe which became surplus to requirements. In my opinion at the time of clinical examination, the ewe was in good health and showed no clinical signs of infectious disease.

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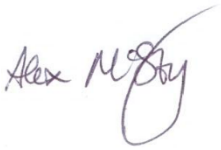
VETERINARY CERTIFICATE OF ANIMAL HEALTH

This is to certify that I have examined a Sheep with ear tag number: UK 056403030798 [Virology no. SH802], which has been used in the production of blood antiserum between 5th October 2022 and 16th November 2022. Both the ear tag number and the animals' record show that it is of UK origin.

This animal was a breeding Ewe which became surplus to requirements. In my opinion at the time of clinical examination, the ewe was in good health and showed no clinical signs of infectious disease.



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This is to certify that I have examined a Sheep with ear tag number: UK 02415124513 [Virology no. SH803], which has been used in the production of blood antiserum between 5th October 2022 and 16th November 2022. Both the ear tag number and the animals' record show that it is of UK origin.

This animal was a breeding Ewe which became surplus to requirements. In my opinion at the time of clinical examination, the ewe was in good health and showed no clinical signs of infectious disease.

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