



**WHO International Standard**

**First WHO International Standard for antibodies to Sudan virus  
for neutralisation assays (human serum)**

**NIBSC code: 24/124\_NT**

**Instructions for use**

**(Version 1.0, Dated 24/10/2025)**

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**1. INTENDED USE**

The First WHO International Standard for Sudan virus (SUDV) antibodies for neutralisation assays (human serum), is the freeze-dried equivalent of 0.25 mL of pooled serum obtained from 14 individuals who recovered from Sudan Virus Disease (SVD). The preparation has been evaluated in a WHO International collaborative study [1]. The intended use of the International Standard is for the calibration and harmonisation of neutralisation assays against SUDV. The preparation has been solvent detergent treated to minimise the risk of the presence of enveloped viruses [2].

**2. CAUTION**

**This preparation is not for administration to humans or animals in the human food chain.**

The preparation contains material of human origin, and either the final product or the source materials, from which it is derived, have been tested and found negative for HBsAg, anti-HIV and HCV RNA. 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**

The assigned potency of the WHO International Standard for SUDV antibodies for neutralising assays (human serum) is 250 IU/ampoule for neutralising antibodies. These values have been arbitrarily chosen and do not reflect the proportion of the antibody activities in the preparation. After reconstitution of the lyophilised cake in 0.25 mL of distilled water or other matrix, the final concentration will be 1000 IU/mL for neutralising antibodies.

**4. CONTENTS**

Country of origin of biological material: Uganda.

Each ampoule contains the freeze-dried equivalent of 0.25 mL of pooled human sera.

**5. STORAGE**

Ampoules should be stored at -20°C or below until use.

Please note because of the inherent stability of lyophilized material, NIBSC may ship these materials at ambient temperature.

**6. DIRECTIONS FOR OPENING**

DIN ampoules have an 'easy-open' coloured stress point, where the narrow ampoule stem joins the wider ampoule body. Various types of ampoule breaker are available commercially. To open the ampoule, tap the ampoule gently to collect material at the bottom

(labelled) end and follow manufactures instructions provided with the ampoule breaker.

**7. USE OF MATERIAL**

**No attempt should be made to weigh out any portion of the freeze-dried material prior to reconstitution**

The contents of each ampoule should be reconstituted in 0.25mL distilled water. Following addition of the distilled water, the material must be allowed to become fully reconstituted before use.

**8. STABILITY**

Reference materials are held at NIBSC within assured, temperature-controlled storage facilities. Reference Materials should be stored on receipt as indicated on the label.

NIBSC follows the policy of WHO with respect to its reference materials. It is the policy of WHO not to assign an expiry date to International Standards. They remain valid with the assigned potency and status until withdrawn or amended. Please note that the stability of International Standard when reconstituted has not been specifically determined. Therefore, it is recommended that the reconstituted material is for single use only. Should users wish to store reconstituted material, they should determine the stability of reconstituted material according to their own method of preparation, storage and use.

**9. REFERENCES**

[1] Le Duff et al. Collaborative Study for the Establishment of the First WHO International Standard for Sudan virus antibodies. 2025 WHO Expert Committee on Biological Standardization. WHO/BS/2025.2494.

[2] Dichtelmüller, H.O., et al., Robustness of solvent/detergent treatment of plasma derivatives: a data collection from Plasma Protein Therapeutics Association member companies. Transfusion, 2009. 49(9): p. 1931-43.

**10. ACKNOWLEDGEMENTS**

We would like to wholeheartedly thank the anonymous donors of the serum samples for their consent which has allowed this study to be undertaken. We would like to express our gratitude to Julius Lutwama and his team at the Uganda Virus Research Institute (UVRI), Uganda, Wendy Boone and the team at Integrum Scientific, USA. We would like to thank the team at Battelle for their valuable contribution throughout the project and the teams at the Coalition for Epidemic Preparedness Innovation (CEPI), at the National Institute of Allergy and Infectious Diseases (NIAID) and at the Biomedical Advanced Research and Development Authority (BARDA) for providing advice during this study. We would like to acknowledge the support from CEPI (project ID PRJ-68594) for the collection of samples and from the NIAID, (task Order No. 75N93023F00001 / TO V17), for the preparation of the International Standard and the evaluation of the candidate IS through the collaborative study. We gratefully acknowledge the important contributions of the collaborative study participants. We would also like to thank MHRA Manufacturing and Logistics teams for the formulation and distribution of materials.

**11. FURTHER INFORMATION**

Further information can be obtained as follows;

This material: [enquiries@nibsc.org](mailto: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](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](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](mailto:enquiries@nibsc.org)

## 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: Not applicable or not classified

Physical and Chemical properties	
Physical appearance: Freeze dried	Corrosive: No
Stable: Yes	Oxidising: No
Hygroscopic: No	Irritant: No
Flammable: No	Handling: See caution, Section 2
Other (specify):	
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](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

<b>Country of origin for customs purposes*:</b> 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.
<b>Net weight:</b> 0.25 g
<b>Toxicity Statement:</b> Toxicity not assessed
<b>Veterinary certificate or other statement</b> if applicable.
<b>Attached:</b> No

## 17. CERTIFICATE OF ANALYSIS

NIBSC does not provide a Certificate of Analysis for WHO Biological Reference Materials because they are internationally recognised primary reference materials fully described in the instructions for use. The reference materials are established according to the WHO Recommendations for the preparation, characterization and establishment of international and other biological reference standards ([https://www.who.int/publications/m/item/annex2-trs932\(revised2004\)](https://www.who.int/publications/m/item/annex2-trs932(revised2004))). They are officially endorsed by the WHO Expert Committee on Biological Standardization (ECBS) based on the report of the international collaborative study which established their suitability for the intended use.