



WHO Reference Panel
WHO International Reference Panel for anti-Lassa fever virus antibodies
NIBSC code: 21/332
Instructions for use
(Version 2.0, Dated 19/01/2022)

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2. CAUTION

The preparation contains material of human origin, and has been tested and found negative for HCV RNA. Sample 20/246 tested positive for anti-HIV antibodies, and samples 20/244, 20/246, 20/248 also positive for HBsAg. As the preparation has been solvent-detergent treated is still deemed not infectious for shipping.

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 has been assigned to the panel members. Representative anti-LASV antibody titres have been provided in section 7 calculated from the consensus titre from the collaborative study; this is for guidance only, and different assay will produce different results.

4. CONTENTS

Country of origin of biological material: Nigeria and Sierra Leone. Each ampoule contains the freeze-dried equivalent of 0.25 mL of human plasma.

5. STORAGE

The WHO International reference panel should be stored at -20C or below upon receipt.

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

This material should be reconstituted in 0.25 mL distilled water. Following addition of water, the ampoules should be left at ambient temperature for approximately 30 minutes until dissolved and then mixed thoroughly, avoiding the generation of excessive foam.

Anti-LASV antibody titres were calculated as geometric mean of the potencies obtained from the collaborative study participants calibrated against the WHO International Standard for anti-LASV

antibodies (NIBSC code 20/202) and expressed in International Unit (IU)/mL.

	20/228	20/244	20/204	20/226	20/246	20/222	20/248
neut Ab	109	112	37	56	19	17	16
anti-GP IgG	970	1290	1580	960	320	340	180
anti-NP IgG	1090	1490	1170	1450	400	310	230

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.

9. REFERENCES

- 1) Mattiuzzo et al. Establishment of the first WHO International Standard and Reference Panel for anti-Lassa Fever virus antibody . 2021 WHO Expert Committee on Biological Standardization .WHO/BS/2021.2406
- 2) Dichtelmüller et al. Robustness of solvent/detergent treatment of plasma derivatives: a data collection from Plasma Protein Therapeutics Association member companies. Transfusion. 2009;49:1931–43

10. ACKNOWLEDGEMENTS

We would like to wholeheartedly thank the anonymous donors of the serum and plasma samples for their consent which has allowed this study to be undertaken; we would like to express our gratitude to Ephraim Ogbaini-Emovon (Insitute for Lassa Fever Research and Control, Irrua Specialist Teaching Hospital, Edo State, Nigeria), Donald S Grant (Kenema Government Hospital, Kenema, Sierra Leone) Christian T. Happi (Redeemer's University, Ede, Nigeria), the Viral Hemorrhagic Fever Consortium and the African Center of Excellence for Genomics of Infectious Disease for the collection and testing of the serum and plasma samples. We gratefully acknowledge the important contributions of the collaborative study participants. We would also like to thank NIBSC Standards Production and Development staff for the formulation and distribution of materials.

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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



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): Material of human origin	
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: 0.25 g
Toxicity Statement: Non-toxic
Veterinary certificate or other statement if applicable.
Attached: 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 http://www.who.int/bloodproducts/publications/TRS932Annex2_1nter_biolefstandardsrev2004.pdf (revised 2004). 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.