Medicines & Healthcare products Regulatory Agency

NIBSC Confidence in Biological Medicines

WHO International Reference Reagent
WHO International Reference Reagent
Anti-drug antibodies to adalimumab (detection of low affinity)
NIBSC code: FS-008
Instructions for use
(Version 1.0, Dated 10/02/2026)

§

1. INTENDED USE

Four different anti-drug antibodies (ADAs) to adalimumab have been established to facilitate the development, characterization and validation of adalimumab ADA assays. These include:

The International Reference reagent FS-008, a chimeric IgG4 for detecting low affinity ADA (no assigned units). This antibody would serve to assess the ability of the assay to detect the bivalent (but not the monovalent) IgG4 and to assess the sensitivity of the neutralizing antibody assays (if needed).
The International Reference reagent FS-007, a chimeric IgG1 for detecting low activity binding ADA (no assigned units). This antibody also has neutralizing activity.
The International Standard 19/264, a high affinity, neutralizing, human IgG1 with an arbitrary unitage for neutralizing activity intended for calibration of neutralizing antibody assays.
The International Standard 19/266, a high affinity, neutralizing, human IgG1 with an arbitrary unitage for binding activity intended for calibration of in-house and commercially available ADA binding assays.

These ADAs are intended to facilitate comparison and harmonization of results across adalimumab ADA assays and assure assay performance.

Detailed information on these antibodies can be found in the collaborative study report for the Proposed WHO International Biological Reference Preparations for Adalimumab anti-drug antibodies (see references).

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

FS-008 - No unitage is assigned to this preparation

4. CONTENTS

Country of origin of biological material: Japan.
Each ampoule contains the residue after freeze-drying of 1.0 ml of a solution that contained:

50.0 µg adalimumab ADA produced in CHO cells
10mM L-Glutamic acid
4% Mannitol
2% Sucrose
0.01%Tween20

The material has not been sterilised and contains no bacteriostat.

5. STORAGE

Unopened ampoules should be stored at –20°C.
If materials are stored at 4°C or room temperature following reconstitution, it is strongly advised to use the materials within 24 hours. For longer storage post-reconstitution, please keep the materials at –20°C.
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
Reconstitution: dissolve the total contents in 1ml of sterile distilled water. For further dilutions, use a suitable buffer solution with carrier protein (free of peptidase), to minimise loss by surface adsorption.

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

This standard was produced under WHO Guidelines cited in the WHO Technical Reports Series, No 932, 2006, Annex 2.

Report on a Collaborative Study for Proposed WHO International Biological Reference Preparations for Adalimumab anti-drug antibodies, WHO/BS/2025.2487

10. ACKNOWLEDGEMENTS

We are thankful to the ABIRISK consortium (funded by the Innovative Medicines Initiative program, EU) and the National Institute of Health Sciences (Japan) for donating the antibodies for the reference standards, and to the study participants for supporting the study.

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

Medicines & Healthcare products Regulatory Agency

NIBSC Confidence in Biological Medicines

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 powder		Corrosive:	No
Stable:	Yes	Oxidising:	No
Hygroscopic:	No	Irritant:	No
Flammable:	No	Handling: See caution, Section 2	
Other (specify):	n/a		

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: 5g
Toxicity Statement: Toxicity not assessed
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 https://www.who.int/publications/m/item/annex2-trs932(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.