Working Standard  
**Tetanus Antitoxin, Human Immunoglobulin**  
NIBSC code: 76/589  

**Instructions for use**  
(Version 10.0, Dated 10/12/2018)  

This material is not for in vitro diagnostic use.

### 1. INTENDED USE

This material is the freeze-dried residue of pooled human serum. This material can be used as a positive control sample in tetanus immunoassays or for other research purposes. This material is NOT FOR IN VITRO DIAGNOSTIC USE. This material is NOT INTENDED for use as a calibrator or to derive the anti-tetanus antibody concentrations in human serum samples. For calibration of human tetanus serology assays a WHO International Standard is available (NIBSC Product code TE-3).

### 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

This material is not a calibrator as has no assigned value.

### 4. CONTENTS

Country of origin of biological material: Unknown. 
Each vial contains the freeze-dried residue from a 1 ml fill of pooled human serum. The estimated potency is 9.2 International Units (IU) of antibody to tetanus toxin per ampoule, as determined by in vivo toxin neutralisation assay at NIBSC.

### 5. STORAGE

Unopened ampoules should be stored 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

Vials have a ‘flip-up’ circular cap. Either on the cap or the collar of the vial, there is an indication of the point at which to lever off the cap. This exposes an area of the stopper through which reconstitution and withdrawal of the preparation can be made using a hypodermic needle and syringe. If use of a pipette is preferred, then fully remove the metal collar using, for example, forceps, taking care to avoid cuts by wearing appropriate gloves. Remove the stopper for access. Care should be taken to prevent loss of the contents.

### 7. USE OF MATERIAL

No attempt should be made to weigh out any portion of the freeze-dried material prior to reconstitution.  
The entire contents of each vial should be completely resuspended in an accurately measured amount of a suitable solution (e.g. distilled water).

### 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.

Units assigned to this material were valid at the time of calibration and there is no data available on long term stability. However, freeze-dried serum standards are expected to undergo negligible loss of activity during long term storage at the indicated storage temperature [1].

Once reconstituted, users should determine the stability of the material according to their own method of preparation, storage and use. Users who have data supporting any changes in the characteristics of this material are encouraged to contact NIBSC.

### 9. REFERENCES


### 10. ACKNOWLEDGEMENTS

Not applicable

### 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

<table>
<thead>
<tr>
<th>Physical and Chemical properties</th>
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<tbody>
<tr>
<td>Physical appearance: Freeze-dried powder</td>
<td>Corrosive: No</td>
</tr>
<tr>
<td>Stable: Yes</td>
<td>Oxidising: No</td>
</tr>
<tr>
<td>Hygroscopic: Yes</td>
<td>Irritant: No</td>
</tr>
<tr>
<td>Flammable: No</td>
<td>Handling: See caution, Section 2</td>
</tr>
<tr>
<td>Other (specify): Contains material of human origin</td>
<td></td>
</tr>
</tbody>
</table>

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_Terms.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*: Austria
  * 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: Approximately 0.1 g
- Toxicity Statement: Non-toxic
- Veterinary certificate or other statement if applicable. Attached: No