WHO International Standard
Serum Gonadotrophin, Equine
NIBSC code: 62/001
Instructions for use
(Version 3.0, Dated 28/03/2013)

1. INTENDED USE
This consists of a batch of ampoules (coded 62/001) which was established as the Second International Standard for Serum Gonadotrophin by the WHO Expert Committee on Biological Standardization (WHO ECBS 1967). It was renamed the Second International Standard for Serum Gonadotrophin, Equine, for Bioassay, in 1968 (WHO ECBS 1969). For further details of this Standard and its collaborative study see Bangham & Woodward (1966).

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
Each ampoule contains 1600 INTERNATIONAL UNITS (by definition)

4. CONTENTS
Country of origin of biological material: United Kingdom.
Each ampoule contains the residue, after freeze-drying, of 1.0ml of a solution which contained:
Extract from serum of pregnant mares approx 0.8 mg
Lactose approx 5 mg
Nitrogen gas at slightly less than atmospheric pressure.

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
Tap the ampoule gently to collect the material at the bottom (labelled) end. Ensure ampoule is scored all around the narrow part of the neck, with a diamond or tungsten carbide tipped glass knife file or other suitable implement before attempting to open. Place the ampoule in the ampoule opener, positioning the score at position ‘A’: shown in the diagram below. Surround the ampoule with cloth or layers of tissue paper. Grip the ampoule and holder in the hand and squeeze at point ‘B’. The ampoule will snap open.
Take care to avoid cuts and projectile glass fragments that enter eyes. Take care that no material is lost from the ampoule and that no glass falls into the ampoule.

Side view of ampoule opening device containing an ampoule positioned ready to open. ‘A’ is the score mark and ‘B’ the point of applied pressure.

7. USE OF MATERIAL
For practical purposes each ampoule contains the same amount of the same materials. Dissolve all the contents in a known amount of buffer solution. No attempt should be made to weigh portions of the freeze dried powder.

For economy of use the solution can be kept for several months if an anti-bacterial preservative is added and the solution is subdivided into several small containers, which are frozen rapidly to below -70°C and then stored below -30°C in the dark; repeated freezing and thawing should be avoided. If extensive dilutions are prepared, a carrier protein (0.1% w/v) should be added, which is free of peptidase.

The material has not been sterilised and contains no bacteriostat.

8. STABILITY
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 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. In addition, once reconstituted, diluted or aliquoted, users should determine the stability of the material according to their own method of preparation, storage and use. Users who have data supporting any deterioration in the characteristics of any reference preparation are encouraged to contact NIBSC.

9. REFERENCES

10. ACKNOWLEDGEMENTS
Grateful acknowledgements are due to Roussel Laboratories, Paris, for providing the material for the Standard, and to the participants in the collaborative 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. PREPARATION OF AMPOULES
Bulk Material: The Roussel Laboratories, Paris, generously supplied about 3.4g of a single batch (CP 171/LEV223). This material represented one of the better batches produced by the normal manufacturing process and was claimed to have a potency of 2700 IU/mg.

Distribution into ampoules: In January 1962, 3.371g of the powder, without further drying, were dissolved in 80ml of 0.5% lactose in glass-distilled water.
The solution was centrifuged at 27,000g for 20 min at 4°C, the very small precipitate was washed once and the material was again centrifuged; the supernatants were then combined and made up to a final volume of 4 litres with 0.5% lactose. This solution was distributed into 3800 ampoules. The average ampoule content was 0.55%, measured by check weighings on 55
ampoules taken at intervals during the filling process. The material in the ampoules was freeze-dried as a single batch, secondarily desiccated and sealed under nitrogen. The mean weight of the contents of an ampoule was estimated to be 5.71mg (average of five determinations).

13. ACTIVITY OF AMPOULE CONTENTS
This was compared with that of the First International Standard in an international collaborative study (Bangham & Woodward, 1966).

14. 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

15. 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.

16. 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>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical appearance:</td>
<td>Freeze dried powder</td>
</tr>
<tr>
<td>Corrosive:</td>
<td>No</td>
</tr>
<tr>
<td>Stable:</td>
<td>Yes</td>
</tr>
<tr>
<td>Oxidising:</td>
<td>No</td>
</tr>
<tr>
<td>Hygroscopic:</td>
<td>Yes</td>
</tr>
<tr>
<td>Irritant:</td>
<td>No</td>
</tr>
<tr>
<td>Flammable:</td>
<td>No</td>
</tr>
<tr>
<td>Handling:</td>
<td>See caution, Section 2</td>
</tr>
<tr>
<td>Other (specify):</td>
<td>None</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.

17. 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.

18. INFORMATION FOR CUSTOMS USE ONLY

| Country of origin for customs purposes*: United Kingdom |
| Toxicty 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_Inter_biolsstandardsrev2004.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.

* 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.