The 1st International Standard for Tylosin

NB: Since April 2006, the European Directorate for the Quality of Medicines & HealthCare (EDQM-Council of Europe) is in charge of the establishment and distribution of International Standards for Antibiotics instead of the National Institute for Biological Standards and Control (NIBSC-UK).

1. Introduction
This material has been prepared and characterised by the Veterinary Laboratories Agency, Weybridge, Surrey, UK.

The package insert from VLA is attached.

2. Caution
For laboratory use only. Handle in accordance with good occupational hygiene, safety and laboratory practices and take precautions to avoid exposure. This material is not for administration to humans or animals. The corresponding safety data sheet, when applicable, can be accessed via the EDQM website (Reference Standards Database) or is available upon request from the EDQM (Helpdesk-FAQ section).

3. Relevant factors
For details of this International Standard, please refer to the enclosed package insert from the Veterinary Laboratories Agency. The Distribution statement in the package insert is no longer valid.

4. Stability
It is the policy of WHO not to assign an expiry date to their International Standard. They remain valid with the assigned potency and status until withdrawn or amended.

Once reconstituted, diluted or aliquoted, users should determine the stability of the material according to their own method of preparation, storage and use.

5. Citation
In all publications (or data sheets for kits) in which this Standard is used as an assay calibrant, it is more important that the title of the Standard, code and the name and addresses of EDQM are cited correctly.

6. Product liability
The Council of Europe accordingly makes no representation, contractual statement, or expression of opinion concerning the quality or safety of any item supplied, the presence of any defect in it, or its fitness for any particular purpose. The product must be handled by professional persons having technical skill and at their own discretion and risk. It is for the purchasers of any such item who are responsible for persons in a workplace to determine independently the risks associated with the item according to the conditions of use and to take appropriate safety measures, including provision of appropriate information to persons working with the substance. Any liability of the Council of Europe for injury, loss or damage arising from the supply or use of any such item is in any event hereby excluded to the fullest extent permitted by law; in particular, no liability is accepted for loss of profits or indirect or consequential loss.

7. Disputes
In accordance with the provisions of article 21 of the General Agreement on the Privileges and Immunities of the Council of Europe, all disputes between the Council of Europe (EDQM) and the customer as regards the application of this contract shall be submitted, if a mutual agreement cannot be reached between the parties, to arbitration as laid down in Order No. 481 of the Secretary General, approved by the Committee of Ministers.
8. **Signature**
   This document is electronically signed by:

   **Dr Pierre Leveau**  
   Head of the Quality, Safety and Environment Division
INTERNATIONAL STANDARD FOR TYLOSIN (Tyn)

Description

The International Standard for Tylosin was established in 1966. It consists of a highly purified preparation of Tylosin base. The preparation was distributed into neutral-glass ampoules and dried over phosphorus pentoxide. The ampoules were sealed in an atmosphere of dry nitrogen.

No attempt was made to place an accurately determined amount of antibiotic in each ampoule. The average weight of the ampoule contents is about 40mg.

International Unit

The International Unit is defined as the activity contained in 0.001mg of the International Standard, i.e. there are 1,000 I.U. per mg.

Distribution

The Standard is distributed by the International Laboratory for Biological Standards, Ministry of Agriculture, Fisheries and Food, Central Veterinary Laboratory, New Haw, Addlestone, Surrey, England on behalf of the World Health Organization. It is available free of charge in limited amounts. If a laboratory needs more than one sample every six months, it is expected to prepare its own standard and to calibrate it against the International Standard. A quantity of this latter sufficient for the purpose will be supplied on request.

National and Laboratory Standards

National and laboratory standards should be prepared in a stable form. This may be achieved by thorough drying and by sealing aliquots of the standard in an oxygen-free atmosphere in neutral-glass ampoules by fusion of the glass. The ampoules should be stored in the dark at a low temperature, e.g. –20°C.

Such standards can be calibrated in International Units by performing comparative assays with the International Standard. Series of dilutions of the two preparations should be compared in the same test system and the dose-response lines obtained should be tested for linearity and parallelism.

The calibration of a national or laboratory standard should be based on assays performed on at least three independent weighings of both preparations.

It is suggested that the potency of a national or laboratory standard should be checked against a fresh sample of the International Standard about once a year.

The International Laboratory for Biological Standards at Weybridge is willing to advise and assist laboratories in providing their own standards.
Assay Methods

The weight of the ampoule contents should first be determined.

Tylosin base is not soluble in water but the contents of an ampoule may be dissolved in 5ml methyl alcohol. Once dissolved, the solution may be diluted in an aqueous diluent, e.g. phosphate buffer at pH7.

Suitable media include the following:

(a) Peptone 0.6%
     Pancreatic digest of casein 0.4%
     Yeast extract 0.3%
     Beef extract 0.15%
     Dextrose 0.1%
     Agar 1.5%

(b) Difco Penassay Broth + 1.5% New Zealand Agar

*Bacillus subtilis* is a suitable test organism.

Since Tylosin is adsorbed to soft glass, all glassware used should be of Pyrex or similar borosilicate glass.