

**WHO Reference Reagent  
Enterovirus 71 (EV71) Inactivated Vaccine 18/120  
NIBSC code: 18/120  
Instructions for use  
(Version 2.0, Dated 01/10/2020)**

### 1. INTENDED USE

WHO Reference Reagent for Enterovirus 71 (EV71) Inactivated Vaccine was established by the WHO Expert Committee on Biological Standardisation (ECBS) in October 2019. It was shown to be suitable for the determination of antigenic content of EV71 by in vitro assays. This material is formalin inactivated EV71 C4 vaccine which was provided by a manufacturer and this preparation has been supplemented with BSA and freeze dried.

### 2. CAUTION

**This preparation is not for administration to humans or animals in the human food chain.**

The material is of bovine origin. The material is certified to be obtained from animals taken from a closed herd in the female line since 1980, in which no animal has been clinically suspected of having BSE & which has not been fed rations containing ruminant derived protein during that period. 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

1,200 EV71 International Units (IU) per ml.

### 4. CONTENTS

Country of origin of biological material: United Kingdom.  
Lyophilized material, each vial should be resuspended in 250µl of sterile distilled water.

### 5. STORAGE

This material 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

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 manufacturers 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**

The WHO Reference Reagent for EV71 should be used to calibrate laboratory reference reagents to be used in the in vitro assays for the determination of the antigenic content of Enterovirus 71 Inactivated Vaccines.

The material is supplied lyophilized and should be resuspended in 250µl of sterile distilled water. This will then require further dilution depending on individual assay requirements. Each vial is intended to be used only once.

### 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.

Stability studies have been carried out and details can be found in the Collaborative Study Report.

NIBSC follows the policy of WHO with respect to its reference materials.

### 9. REFERENCES

EXPERT COMMITTEE ON BIOLOGICAL STANDARDIZATION  
Geneva, 21 to 25 October 2019  
Report on the WHO collaborative study to establish the 1st International Standard for Enterovirus A71 inactivated vaccine  
Alison Tedcastle, Qunying Mao, Jason Hockley, Elaine Pegg, Fan Gao, Zhenglun Liang, Paul Matejtschuk, Chinwe Duru, Philip Minor, Peter Rigsby, Junzhi Wang and Javier Martin

### 10. ACKNOWLEDGEMENTS

The study participants and EV71 manufacturer who kindly donated the candidate material.

### 11. FURTHER INFORMATION

Further information can be obtained as follows:  
This material: [enquiries@nibsc.org](mailto: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](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](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](mailto: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:<br>Powder                             | Corrosive: No                            |
| Stable: Yes  | Oxidising: No                            |
| Hygroscopic: No  | Irritant: No                             |
| Flammable: No  | Handling: See caution, Section 2         |
| Other (specify): Does not contain 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.                             |
| <b>Action on Spillage and Method of Disposal</b>   |   |
| 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.<br>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](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

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|---|
| <b>Country of origin for customs purposes*:</b> United Kingdom<br>* 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. |
| <b>Net weight:</b> 0.25ml   |
| <b>Toxicity Statement:</b> Non-toxic  |
| <b>Veterinary certificate or other statement</b> if applicable.<br><b>Attached:</b> 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\\_biologicalstandardsrev2004.pdf](http://www.who.int/bloodproducts/publications/TRS932Annex2_Inter_biologicalstandardsrev2004.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.