

(For The Medical Profession)

# FREEZE-DRIED GLUTAMATE BCG VACCINE (JAPAN) FOR INTRADERMAL USE

## DESCRIPTION

It is a live freeze-dried vaccine made from an attenuated strain of *Mycobacterium bovis*.

It is used for the prevention of tuberculosis. The vaccine fulfils WHO requirements for BCG vaccine.

## COMPOSITION OF VACCINE

- (a) Live Bacteria of Calmette and Guerin (as approximately 70% moist bacteria) ..... 0.5mg/ampoule  
(b) Sodium Glutamate (as a stabilizer) ..... 2.0mg/ampoule

## ADMINISTRATION

For children under one year 0.05ml and for others 0.1 ml of reconstituted vaccine is given intradermally. Special syringes allow administration of the exact dose. A sterile syringe and a sterile needle should be used for each injection. The skin should not be cleaned with antiseptic. Special care is needed in opening the ampoule so that the vaccine is not blown out. Because of sensitivity to ultraviolet light, the vaccine must be protected from sunlight. If not used immediately after reconstitution, the vaccine should be kept on ice to maintain its temperature between +2°C and +8°C. Any opened container remaining at the end of a session (within **six hours** of reconstitution) must be discarded.

The diluent supplied is specially designed for use with this vaccine. Only this diluent may be used to reconstitute the vaccine. Do not use diluents from other types of vaccine or from other manufacturers. Water for injection may NOT be used for this purpose. **Using an incorrect diluent may result in damage to the vaccine and/or serious reactions to those receiving the vaccine.** Diluent must not be frozen but must be cooled between +2°C and +8°C before reconstitution. If the vaccine vial monitor (see figure) is present, it is removed on reconstitution.

Skin testing with tuberculin is not generally carried out before giving BCG, but when performed, those who are found to be positive reactors need not be immunized.

## RECONSTITUTION AND VACCINATION

File the neck part of the BCG ampoule with the file provided with the pack for cutting the ampoule. Wrap the filed site with the sheet provided with the pack to prevent the vaccine from blowing out of the ampoule as the interior of the ampoule is kept vacuum, and then snap to break off the ampoule at the filed site. With a syringe, add the whole amount of saline diluent into the BCG ampoule (A file is not needed to break off the diluent ampoule). Give a few gentle shakes to the ampoule to ensure homogeneity of the suspension. A homogeneous suspension in a concentration of 0.5mg per ml is now obtained. The vaccination site is about half way down the outer aspect of the upper arm. Do not vaccinate at the shoulder, nor revaccinate at a previously vaccinated site. Any volume of vaccine remaining in the container must be discarded.

## IMMUNIZATION SCHEDULE

BCG should be given routinely to all infants at risk of early exposure to the disease. For maximum protection, this vaccine should be given as soon after birth as possible. It can be given at the same time as DTP, measles, polio (OPV and IPV), hepatitis B, Haemophilus influenzae type b, and yellow fever vaccines and vitamin A supplementation. Many countries still recommend not to give BCG within 4 weeks of another live vaccine.

## SIDE EFFECTS

A fever and a local reaction are normal after BCG. A small tender red swelling appears at the site of the injection, which gradually changes to a small vesicle and then an ulcer in 2-4 weeks. The reaction usually subsides within two to five months and in practically all children leaves a superficial scar 2-10 mm in diameter. Rarely, the nodule may persist and ulcerate. Occasionally, enlargement of axillary lymph nodes may appear in 2-4 months following immunization. Very rarely, enlarged lymph nodes can suppurate. Inadvertent subcutaneous injection may produce abscess formation and may lead to scarring.

Shock or anaphylaxis may appear. Although anaphylaxis is very rare, the subjects should be observed for an allergic reaction after BCG. Very rarely, systemic disseminated BCG-infection, including osteitis or osteomyelitis, may appear, especially in persons with primary or secondary immunodeficiencies. Expert advice should be sought regarding the appropriate treatment regimen with selected anti-tuberculosis drugs for the management of systemic infections.

### CONTRAINDICATIONS

Keloid and lupoid reactions may also occur at the site of injection and children experiencing such reactions should not be revaccinated.

Do not give in pregnancy.

### Immune deficiency

The vaccine is contraindicated in individuals with cell-mediated immune deficiency.

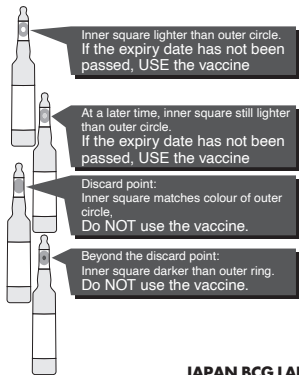
**Individuals known to be infected with human immunodeficiency virus (HIV), either non-symptomatic or symptomatic, should NOT receive BCG vaccine.**

### STORAGE

BCG vaccine should be stored and transported between +2°C and +8°C. It is even more stable if stored in temperatures as low as -20°C. The diluent should not be frozen. The vaccine should be protected from the light. Vaccine ampoules and diluents should be transported together.

Vaccine Vial Monitors (VVMs) are part of the label on all BCG supplied through JAPAN BCG LABORATORY. The colour dot, which appears on the label of the ampoule, is a VVM. This is a time-temperature sensitive dot that provides an indication of the cumulative heat to which the ampoule has been exposed. It warns the end user when exposure to heat is likely to have degraded the vaccine beyond an acceptable level.

The interpretation of the VVM is simple. Focus on the central square. Its colour will change progressively. As long as the colour of this square is lighter than the colour of the ring, then the vaccine can be used. As soon as the colour of the central square is the same colour as the ring or of a darker colour than the ring, then the ampoule should be discarded.



The VVM does not extend life of a vaccine once it has been reconstituted. Even though the VVM indicates that the vaccine is acceptable, if it has been reconstituted, the vaccine should be used immediately on a maximum of 6 hours beyond reconstitution and then discarded.

### PRESENTATION

The vaccine comes in boxes of 100 ampoules each containing 1,000 doses or 2,000 doses per box.

The diluent in boxes of 100 ampoules accompanies all orders.

### REFERENCES

1. Quality Control of freeze-dried BCG vaccine from Japan BCG Laboratory, Tokyo, Japan, 1994/1995, Dr. J. Milstien, WHO Vaccine Supply and Quality, 1996.
2. The Thermostability of Different BCG Products, K. Bunch-Christensen, Chief, BCG Department, Statens Seruminstitut, Copenhagen, WHO Collaborating Centre for BCG Vaccine; WHO/TB/81.118, 1981.

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