

SUMMARY OF PRODUCT CHARACTERISTICS-BCG FOR VACCINE

1. Name of the Medicinal Product:

- 1.1 Product Name - BCG Vaccine (Freeze Dried) Live attenuated
 1.2 Generic name - Bacillus Calmette - Guerin (*Mycobacterium bovis* - Danish 1331)
 1.3 Strength - $2 - 8 \times 10^6$ CFU / Vial
 1.4 Pharmaceutical form - White Lyophilized powder for Intradermal Injection.

2. Qualitative and Quantitative Composition:

- 2.1 BCG (Bacillus Calmette-Guerin) is freeze dried vaccine derived from attenuated strain of *Mycobacterium bovis*. It is used for the prevention of Tuberculosis.
 2.2 The vaccine has to be reconstituted with 1.0 ml of sodium chloride injection (0.9% w/v). After reconstitution, a dose of 0.05ml is equivalent to 1 to 4×10^5 CFU and a dose of 0.1 ml is equivalent to 2 to 8×10^5 CFU.
 2.3 The Vaccine has to be administered intradermally and it contains BCG of Danish 1331 of attenuated strain of *mycobacterium bovis*.

S.No.	Component	Type of ingredient	Concentration
1.	Bacillus Calmette Guerin (Danish-1331 strain) (bacterial suspension)	Active	1 mg / Vial (2 to 8×10^6 CFU)
2.	Monosodium Glutamate	Excipient	1.5 % (W/V)

3. Pharmaceutical Form:

White Lyophilized powder for Intradermal Injection.

4. Clinical Particulars:

4.1 Therapeutic Indications:

Active immunization against tuberculosis. BCG vaccine is to be used on the basis of national official recommendations.

4.2 Posology and method of administration:

- Posology -A dose of 0.05mL / 0.1 ml of the reconstituted vaccine is injected strictly by the intradermal route.
- BCG Vaccine IP:
On reconstitution with 1.0 ml 0.9 % w/v sodium chloride injection, each dose of 0.1 ml for adults

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and children aged over one month and adults contains: 2 to 8×10^5 CFU. On reconstitution with 1.0 ml 0.9 % w/v sodium chloride injection, each dose of 0.05 for children upto one month of age contains: 1 to 4×10^5 CFU.

- **BCG Vaccine BP:**

On reconstitution with 1.0 ml 0.9 % w/v sodium chloride injection, each dose of 0.1 ml for adults and children aged over one year contains: 2 to 8×10^5 CFU. On reconstitution with 1.0 ml 0.9 % w/v sodium chloride injection, each dose of 0.05 for children upto one year of age contains: 1 to 4×10^5 CFU.

- **Method of Administration** – The injection site should be clean and dry. If antiseptics (such as alcohol) are applied to swab the skin, they should be allowed to evaporate completely before the injection is made. BCG Vaccine should be administered by personnel trained in intradermal technique.

BCG vaccine should be injected strictly intradermally in the arm, over the distal Insertion of the deltoid muscle onto the humerus (approx. one third down the Upper arm), as follows:

- The skin is stretched between thumb and forefinger.
- The needle should be almost parallel with the skin surface and slowly inserted bevel upward approximately 2 mm into the superficial layers of the dermis.
- The needle should be visible through the epidermis during insertion.
- The injection is given slowly.
- The injection site is best left uncovered to facilitate healing.
- BCG Vaccine should be administered with a syringe of 1.0 ml sub-graduated into hundredths of ml (1/100 ml) fitted with a short beveled needle (25 G / 0.50 mm or 26G / 0.45 mm). Jet injectors or multiple puncture devices should not be used to administer the vaccine.

4.3 Contraindications:

- BCG Vaccine should not be administered to individuals known to be hypersensitive to any component of the vaccine.
- Normally, the vaccination should be postponed in persons with pyrexia or generalized infected skin condition. Eczema is not a contraindication, but the vaccine site should be lesion - free.
- BCG vaccine should not be given to persons receiving systemic corticosteroids or immunosuppressive treatment, including radiotherapy, to those suffering from malignant

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conditions (e.g. lymphoma, leukemia, hodgkin's disease or other tumors of the reticulo-endothelial system), those with HIV infection, including infants born to HIV-positive mothers.

- The reaction to BCG vaccination may be exaggerated in these patients, and a generalized BCG infection is possible.
- BCG vaccine should not be given to patients who are receiving anti-tuberculosis drugs.

4.4 Special Warnings and Precautions for Use:

Although anaphylaxis is rare, facilities for its management should always be available during vaccination. Whenever possible, patients should be observed for an allergic reaction for up to 15-20 minutes after receiving immunization. Injections made too deeply, increase the risk of lymphadenitis and abscess formation.

4.5 Interaction with other medicinal products and other form of interactions:

Intradermal BCG vaccination may be given concurrently with inactivated or live vaccines. Other vaccines to be given at the same time as BCG vaccine should not be given into the same arm. It is advisable not to give further vaccination in the arm used for BCG vaccination for 3 months because of the risk of regional lymphadenitis.

4.6 Pregnancy and Lactation:

Vaccination of mother is not recommended during pregnancy.

4.7 Effects on ability to drive and machine:

BCG Vaccine has no or negligible effect on the ability during drive and machine.

4.8 Undesirable Effects:

The expected reaction to successful vaccination with BCG vaccine includes in duration at the injection site followed by a local lesion that may ulcerate some weeks later and heal over some months leaving a small, flat scar. It may also include enlargement of a regional lymph node to < 1cm.

Undesirable effects of the vaccine include the following:

An excessive response to the BCG vaccine may result in a discharging ulcer. This may be attributable to inadvertent subcutaneous injection or to excessive dosage. The ulcer should be encouraged to dry and abrasion (by tight cloths, for Example) avoided.

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Uncommon (>1/1000, <1/100)	Systematic: Headache, fever. Local: Enlargement of regional lymph node >1cm. Ulceration with a discharging ulcer at the site of injection.
Rare (<1/100)	Systematic: Disseminated BCG complications as osteitis or osteomyelitis. Allergic reactions, including anaphylactic reactions. Local: Suppurative lymphadenitis, abscess formation.

Expert advice should be sought regarding the appropriate treatment regimen for the management of systematic infections or persistent local infections following vaccination with BCG vaccination.

4.9 Overdose:

Overdose increases the risk of suppurative lymphadenitis and may lead to excessive scar formation and gross over dosage increases the risk of undesirable BCG complications.

5. Pharmacological Properties:

Vaccination with BCG Vaccine elicits a cell-mediated immune response that confers a variable degree of protection to infection with Mycobacterium Tuberculosis. The duration of immunity after BCG vaccination is not known, but there are some indications of waning immunity after 10 years. Vaccinated persons normally become tuberculin positive after 6 weeks.

A positive tuberculin test indicates a response of the immune system to prior BCG vaccination or to a mycobacterial infection. However the relationship between the post vaccination tuberculin test reaction and the degree of protection afforded by BCG remains unclear.

5.1 Pharmacokinetic:

Not relevant for BCG Vaccine

5.2 Pharmacodynamics:

- Pharmacotherapeutic group (ATC code): J 07 AN 01.
- BCG Vaccinated persons usually become tuberculin positive after 6 weeks.
- A positive tuberculin skin test indicates a response of the immune system.
- Moreover a relationship between the post vaccination tuberculin skin test reaction and the degree of protection afforded by BCG remains unclear.

5.3 Preclinical safety data:

The non-clinical data reveals no hazard for humans based on the safety assessment conducted

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during the vaccination. During the follow-up there were no deaths or serious adverse events or adverse events observed and no safety issues emerged during observation period.

6. Pharmaceutical Particulars:

6.1 List of Excipient:

S. No.	Name of the excipient	Concentration
1.	Monosodium Glutamate	1.5 % (W/V)

6.2 Incompatibilities:

BCG Vaccine should not be mixed with other medicinal product.

6.3 Shelf life:

24 months from the date of manufacturing, if the product is rightly stored as recommended in the storage condition. From a microbiological point of view the product should be used immediately after reconstitution.

6.4 Special Precaution for Storage:

The vaccine should be stored at $5 \pm 3^{\circ}\text{C}$ (Before and after reconstitution). Do not freeze. Store in original Package in order to protect from light.

6.5 Nature and content of Container

BCG Vaccine is filled in USP Type I Amber colour glass vials with bromobutyl rubber stoppers and aluminium flip off seal.

1.0 ml of diluent Sodium Chloride Injection IP (0.9 w/v) in Type I glass ampoule.

7. Marketing Authorization Holder:

GreenSignal Bio Pharma Private Ltd,
No. 49, Pappankuppam Village, Gummidipoondi Taluk,
Chennai 601201, India.

8. Market Authorization numbers (s):

The Market Authorization number is **TN00002462**