
For the use of Registered Medical Practitioners or hospital or laboratory only.

**Diphtheria, Tetanus, Pertussis (Whole Cell), Hepatitis B (rDNA) and
Haemophilus influenzae Type b Conjugate Vaccine (Adsorbed)**

Shan5™

Shan5™ (Diphtheria, Tetanus, Whole Cell Pertussis, Hepatitis B and *Haemophilus influenzae* type b conjugate vaccine).

PRESCRIBING INFORMATION

Qualitative and Quantitative Composition

Shan5 contains Diphtheria (D) Toxoid, Tetanus (T) Toxoid, inactivated pertussis bacteria (wcp) purified major surface antigen of the Hepatitis B virus (HBV) and conjugated *Haemophilus influenzae* type b polysaccharide (adsorbed).

The D and T toxoid are prepared from the toxin of cultures of *Corynebacterium diphtheriae* and *Clostridium tetani* by formalin inactivation using established technology. The wcp component is obtained by heat inactivation of phase I culture of *Bordetella pertussis* bacteria.

The surface antigen of the HBV (HBsAg) is produced from genetically-engineered yeast cells (*Pichia pastoris*) which carry the gene coding for the major surface antigen of the HBV. This HBsAg expressed in yeast cells is purified by several physico-chemical steps.

The capsular polysaccharide is produced from culture of *Haemophilus influenzae* type b and purified. Purified polysaccharide (PRP) is covalently bound to Tetanus Toxoid (T) to produce PRP-T conjugate.

Each dose of 0.5 mL contain:

Active Ingredients	Quantity
Diphtheria Toxoid	≥ 30 IU
Tetanus Toxoid	≥ 60 IU
<i>B. pertussis</i> (whole cell)	≥ 4 IU
rDNA Hepatitis B Surface Antigen	10 µg
Purified capsular polysaccharide of Hib	10 µg

conjugated to 20 – 40 mcg of Tetanus Toxoid
(carrier protein)

Excipients

Thiomersal	0.05 mg
Aluminium Phosphate Gel equivalent to Al ⁺⁺⁺	0.625 mg
Sodium Chloride	4.5 mg
Water for Injection	q.s. to 0.5 mL

Dose: 0.5 mL by intramuscular injection.

INDICATION

Shan5 is indicated for active immunization against Diphtheria, Tetanus, Pertussis, Hepatitis B and *Haemophilus influenzae* type b in infants starting from 6 weeks of age. The vaccine should not be used as a birth dose vaccine.

POSOLGY

The recommended single human dose of the vaccine is 0.5 mL. The primary vaccination schedule consists of three doses administered at an interval of at least 4 weeks between doses and starting at 6 weeks of age. In geographical areas where there is a high endemicity of Hepatitis B and significant perinatal transmission, the practice to administer monovalent Hepatitis B vaccine at birth should be continued. Three doses of the pentavalent vaccine can be used to complete the primary series starting from 6 weeks of age.

ADMINISTRATION

The liquid vaccine in the vial should be shaken before use to homogenize the suspension. The vaccine should be injected deep intramuscularly. Do not inject subcutaneously or intravenously. The anterolateral aspect of the upper thigh is the preferred site of injection. An injection into a child's buttocks may cause injury to the sciatic nerve and is not recommended. The vaccine must not be injected into the skin as this may give rise to local reactions. A sterile syringe and sterile needle must be used for the injection. Another injectable vaccine if co-administered with **Shan5** should be administered at a different anatomical site. The vaccine should be visually inspected for any foreign particulate matter and/or variation of physical aspect prior to administration. In the event of either being

observed discard the vaccine. **Shan5** should not be mixed with any other vaccine or injectable in the same syringe before administration.

Once opened, multi-dose vials should be kept between +2°C and +8°C. Multi-dose vials of Diphtheria, Tetanus, Pertussis (Whole Cell), Hepatitis B (rDNA) and *Haemophilus influenzae* Type b Conjugate Vaccine (Adsorbed), from which one or more doses of vaccine have been removed during an immunization session may be used in subsequent immunization sessions for up to a maximum of 4 weeks, provided that all of the following conditions are met:

- The expiry date has not passed.
- The vaccines are stored under appropriate cold chain conditions.
- The vaccine vial septum has not been submerged in water.
- Aseptic technique has been used to withdrawal doses.

CONTRA-INDICATIONS

Shan5 should not be administered to subjects with either known hypersensitivity to any component of the vaccine, or having shown signs of hypersensitivity after previous administration of **Shan5** or Diphtheria, Tetanus, Pertussis, Hepatitis B or Hib vaccines. It is a contraindication to administer the vaccine in the presence of any evolving or suspected neurological condition.

As with other vaccines, the administration of **Shan5** should be postponed in subjects suffering from acute severe febrile illness. However, the presence of minor illnesses such as mild upper respiratory infections with or without low grade fever is not a contraindication for further use.

Shan5 is contra-indicated if the child has experienced an encephalopathy of unknown aetiology, occurring within 7 days following previous vaccination with pertussis containing vaccine or any progressive neurological disorder. In these circumstances the vaccination may be continued with DT, Hib and Hepatitis B vaccines after a thorough medical evaluation and assessment of risk benefit.

SPECIAL PRECAUTIONS

Vaccination should be preceded by a review of the medical history (especially with regard to previous vaccination and the possible occurrence of undesirable events) and a clinical examination.

If any of the following events occur in temporal relation to receipt of **Shan5**, the decision to give subsequent doses of **Shan5** or any other vaccine containing the pertussis component should be carefully considered.

- Temperature of $\geq 39.5^{\circ}\text{C}$ (103.1°F) within 48 hours, not due to another identifiable cause;
- Inconsolable crying lasting ≥ 3 hours, occurring within 48 hours;
- Collapse or shock-like state (hypotonic-hyporesponsive episode) within 48 hours;
- Convulsions/Seizures with or without fever, occurring within 3 days.

There may be circumstances, such as presence of high fever, when the potential benefits of the vaccine use outweigh possible risks.

HIV infection is not considered as a contraindication for Diphtheria, Tetanus, Pertussis, Hib and Hepatitis B vaccination. The expected immunological response may not be obtained after vaccination of immunosuppressed patients, for example, patients on immunosuppressive therapy including irradiation, antimetabolites, alkylating agents, cytotoxic drugs, and corticosteroids (used in greater than physiologic doses). Vaccine should be administered to prevent the child from contacting the diseases should be undertaken as per recommended standard schedules.

As with all injectable vaccines, appropriate medical treatment should always be readily available in case of anaphylactic reactions following the administration of the vaccine. For this reason, the vaccinee should remain under medical supervision for at least 30 minutes after vaccination. Adrenaline injection (1:1000) must be immediately available should an acute anaphylactic reaction occur due to any component of the vaccine. For treatment of severe anaphylaxis the initial dose of adrenaline is 0.1- 0.5 mg (0.1-0.5 mL of 1:1000 injection) given subcutaneously or intramuscularly. For infants the recommended dose of adrenaline is 0.01 mg/kg (0.01 mL/kg of 1:1000 injection). Single pediatric dose should not be more than 0.5 mg (0.5 mL). Post vaccination with injectable vaccines, it is expected that there may be minor swelling, tenderness and redness at the injection site. In case this does not resolve within seven days or if associated with any increase in severity, it should be brought

to the physician's notice immediately for further treatment and care. **Shan5** should be administered with caution to subjects with thrombocytopenia or a bleeding disorder since bleeding may occur following an intramuscular administration to these subjects, unless the potential benefit clearly outweighs the risk of administration.

CLINICAL EXPERIENCE¹

In a Phase III study designed to evaluate immune lot consistency and immune non inferiority of **Shan5** as compared to a licensed pentavalent vaccine, conducted at eleven centers across India, 1100 subjects (15 toddlers and 1085 infants) were vaccinated. The study demonstrated seroprotection rates for Hib (99.5%), Hepatitis B (97.8%), Diphtheria (100%), Tetanus (100%) and seroresponse rate of 70.1% for whole cell Pertussis component of **Shan5** vaccine. The seroprotection/ seroresponse rates were statistically non inferior to the licensed comparator pentavalent vaccine for all five antigens.

ADVERSE REACTIONS

In a Phase III study conducted on **Shan5**, most commonly reported local adverse events were pain, redness and swelling at injection site. Among the systemic reactions fever, vomiting, crying, drowsiness, loss of appetite and irritability were commonly observed. All the events were resolved without any sequelae within 7 days post administration of vaccine. All the events were mild to moderate in severity. Rarely a nodule may be palpable at the injection site for few weeks, which disappear with or without medication. The frequency and severity of local and systemic reactions observed in the phase III study was comparable between **Shan5** and the licensed pentavalent vaccine.

STORAGE

Shan5 should be stored at + 2°C to + 8°C (35.6°F to 46.4°F). **Not to be Frozen.** Discard vaccine if frozen.

Once opened, multi-dose vials should be kept between +2°C and +8°C. Multi-dose vials from which one or more doses of vaccine have been removed during an immunization session may be used in subsequent immunization sessions for up to a maximum of 4 weeks, provided that all of the following conditions are met:

- The expiry date has not passed.
- The vaccines are stored under appropriate cold chain conditions.

- The vaccine vial septum has not been submerged in water.
- Aseptic technique has been used to withdrawal doses.

SHELF-LIFE

The expiry date of the vaccine is indicated on the label and packaging. The vaccine should not be used beyond this date.

PRESENTATION

Single dose vial 0.5 mL

Multidose vial (10 dose) 5.0 mL

Shan5 is presented in USP type I glass vial.

INSTRUCTION FOR USE/HANDLING

How to use Shan5

Shan5 is presented as a suspension. Upon storage, a white deposit may be observed at the bottom of the vial. The vaccine vial should be **shaken adequately** in order to obtain a homogeneous turbid white suspension. The vial should be visually inspected for any foreign particulate matter. Physical aspects like cap and the seal should be inspected for integrity of container closure system. In the event of either of the above being observed, discard the vaccine.

When using a multi dose vial, each dose should be taken with a sterile needle and syringe. Each dose of vaccine should be withdrawn under strict aseptic conditions and precautions to avoid contamination of the contents.

Ref:

1. Data on file, Shantha Biotechnics Private Limited.

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