Summary of Product Characteristics

1 NAME OF THE MEDICINAL PRODUCT

Typhim Vi Solution for Injection Typhoid Polysaccharide Vaccine

2 QUALITATIVE AND QUANTITATIVE COMPOSITION

Each dose of 0.5 ml contains purified Vi capsular polysaccharide of *Salmonella typhi* (Ty 2 strain) 25 micrograms.

For a full list of excipients, see section 6.1.

3 PHARMACEUTICAL FORM

Solution for injection.
Typhim Vi is a clear, colourless solution.

4 CLINICAL PARTICULARS

4.1 Therapeutic indications

TYPHIM Vi is indicated for active immunisation against typhoid fever caused by *Salmonella enterica serovar typhi*, S. typhi in adults and children 2 years of age or older.

4.2 Posology and method of administration

Adults and Children over 2 years of age: A single dose of 0.5 millilitre.

The preferred route of administration for this vaccine is intramuscular although it may be given subcutaneously.

Do not administer by intravascular injection. Ensure that the vaccine does not penetrate a blood vessel.

Vaccination should occur at least 2 weeks prior to potential exposure to infection with *Salmonella typhi (see section 5.1).*

Children under 2 years of age: As with other polysaccharide vaccines, the antibody response may be inadequate in children under 2 years of age.

Elderly: As for adults and children over 2 years of age.

Revaccination: A single dose at 3 yearly intervals in subjects who remain at risk from typhoid fever.

4.3 Contraindications

Hypersensitivity to the active substance, to any of the excipients listed in section 6.1.
Hypersensitivity to formaldehyde or to casein which are used in manufacture and may be present in trace amounts.

Vaccination must be postponed in case of febrile or acute disease.

4.4 Special warnings and precautions for use

This vaccine provides protection against the risk of infection related to *Salmonella typhi* but gives no protection against *Salmonella paratyphi A* or *B* or against *non-typhoidal Salmonellae*.

Prior to administration of TYPHIM Vi, the recipient or their guardian must be asked about the recipient's personal history, current health status and any adverse event after previous immunisations.
In subjects who have a history of serious or severe reaction within 48 hours of a previous injection with a vaccine containing similar components, the need for the vaccination must be carefully considered, following a risk-benefit assessment.

As with all vaccines, facilities for the management of anaphylaxis should always be available during vaccination. As a precautionary measure, epinephrine injection (1:1000) must be immediately available in case of unexpected anaphylactic or serious allergic reactions.

Syncope (fainting) can occur following, or even before, any vaccination especially in adolescents as a psychogenic response to the needle injection. This can be accompanied by several neurological signs such as transient visual disturbance, paraesthesia and tonic-clonic limb movements during recovery. It is important that procedures are in place to avoid injury from faints.

TYPHIM Vi must be administered with caution to subjects with thrombocytopenia or a bleeding disorder since bleeding may occur following intramuscular administration to these subjects.

TYPHIM Vi may not result in protection against typhoid fever in all vaccine recipients (see section 5.1).

The immunogenicity of TYPHIM Vi may be reduced by immunosuppressive treatment or immunodeficiency (e.g. HIV infection). In such cases it is recommended to postpone vaccination until resolution of the disease or of treatment if possible.

TYPHIM Vi contains less than 1 mmol sodium (23 mg) per dose, that is to say essentially 'sodium-free'.

Traceability
In order to improve the traceability of biological medicinal products, the name and the batch number of the administered product should be clearly recorded

4.5 Interaction with other medicinal products and other forms of interaction

Separate injection sites must be used in case of concomitant administration.

TYPHIM Vi may be administered during the same vaccination session with other common vaccines (yellow fever, diphtheria, tetanus, poliomyelitis, rabies prepared on Vero cells, meningitis A+C, hepatitis A and hepatitis B).

4.6 Fertility, pregnancy and lactation

Pregnancy
Animal reproduction studies have not been conducted with TYPHIM Vi.
Data on the use of this vaccine in pregnant women are limited. Therefore the administration of the vaccine during pregnancy is not recommended. TYPHIM Vi should be given to pregnant women only if clearly needed and following and assessment of risks and benefits.

Lactation
It is not known whether this vaccine is excreted in human milk. Caution must be exercised when TYPHIM Vi is administered to a nursing mother.

4.7 Effects on ability to drive and use machines

No studies on the effects on the ability to drive and use machines have been performed. From post-marketing data, tiredness has been reported following administration of this vaccine (*See section 4.8*).

4.8 Undesirable effects

a. Summary of the safety profile

During clinical development, more than 15,000 people received TYPHIM Vi (first or second injection).

The most common adverse reactions, in all age groups, were injection site pain. In adults from 18 years of age, myalgia and fatigue were the most frequently reported systemic reactions. In children and adolescents (from 2 to 17 years of age), myalgia and headache were the most frequently reported systemic reactions.
Most adverse reactions appeared within 3 days after vaccination. Most reactions resolved spontaneously within 1 to 3 days after onset.

b. Tabulated list of adverse reactions

The adverse reactions come from clinical studies (pooled analysis) and worldwide post-marketing experience. The pooled analysis has been performed on 6 recent studies sharing the same safety standard integrating data from 1532 subjects (97 children and adolescents from 2 to 17 years of age and 1435 adults).

In each System Organ Class, the adverse reactions are ranked under headings of frequency, the most common reactions coming first, using the following convention:

Very common (≥1/10)
Common (≥1/100 to <1/10)
Uncommon (≥1/1000 to <1/100)
Rare (≥1/10 000 to <1/1000)
Very rare (<1/10 000) including isolated cases
Not known (cannot be estimated from the available data).

The table below summarizes the frequencies of the adverse reactions that were recorded after any dose of TYPHIM Vi in children and adolescents from 2 to 17 years of age and adults.

Adverse Reactions Experienced	**Children and Adolescents** 2-17 years	**Adults** ≥ 18 years
	Frequency	Frequency
Immune system disorders		
Anaphylactic, anaphylactoid reactions, including shock	Not known*	
Serum sickness disease	Not known*	
Nervous system disorders		
Vasovagal syncope in response to injection	Not known*	
Headache	Very common	Common
Respiratory, thoracic and mediastinal disorders		
Asthma	Not known*	
Gastrointestinal disorders		
Nausea	Not known*	
Vomiting	Not known*	
Diarrhoea	Not known*	
Abdominal pain	Not known*	
Skin and subcutaneous tissue disorders		
Allergic type reactions such as pruritus, rash, urticaria	Not known*	
Musculoskeletal and connective tissue disorders		
Arthralgia	Not known*	
Myalgia	Very common	Very common
General disorders and administration site condition		
Injection site pain	Very common	
Injection site erythema	Very common	Common
Injection site pruritus	-	Uncommon
Injection site swelling/oedema/induration	Very common	Common
Malaise	Common	Very common
Fever	Common	-
Fatigue/asthenia	Common	Very common

* reported during postmarketing surveillance

The most frequently reported adverse reactions in children and adolescents (from 2 to17 years of age) were injection site reactions: pain (52.6%), swelling/oedema/ induration (16.5%) and erythema (14.4%). The most frequently reported systemic reactions were myalgia (14.6%) and headache (13.5%).

In adults from 18 years of age, the most frequently reported adverse reaction were injection site pain (75.6%), myalgia (47.1%) and fatigue/asthenia (25.0%).

Reporting of suspected adverse reactions

Reporting suspected adverse reactions after authorisation of the medicinal product is important. It allows continued monitoring of the benefit/risk balance of the medicinal product. Healthcare professionals are asked to report any suspected adverse reactions via HPRA Pharmacovigilance, Earlsfort Terrace, IRL - Dublin 2; Tel: +353 1 6764971; Fax: +353 1 6762517. Website: www.hpra.ie; E-mail: medsafety@hpra.ie.

4.9 Overdose

Not applicable.

5 PHARMACOLOGICAL PROPERTIES

5.1 Pharmacodynamic properties

Pharmacotherapeutic group: Typhoid vaccines, ATC code: J07AP03
This vaccine contains purified Vi capsular polysaccharide of *Salmonella typhi* (Ty 2 strain).
Immunity appears within 1-3 weeks after injection and lasts around 3 years.

Immunogenicity

In adults seroconversion rates (defined as 4-fold rise of anti-Vi IgG antibody levels) have ranged from 62.5% to 100% four weeks after a single injection, with similar magnitude of anti-Vi immune response in non-endemic areas compared to endemic areas. Similarly, in children aged from 2 to 17 years the seroconversion rates have ranged from 67% to 100%.

Anti-Vi antibody persistence depends on endemicity, with a trend for better persistence in endemic areas (eg in 83 children anti-Vi IgG was > 1µg/mL at up to 10 years after single dose). In non-endemic areas, anti-Vi antibodies may persist for 2 to 3 years.

Efficacy

A double-blind, randomized, controlled efficacy clinical trial was conducted in children and adults resident in a highly endemic area in Nepal. A total of 3,457 subjects received TYPHIM Vi. The level of protection conferred by a single dose of the vaccine was 74% against blood culture-confirmed cases of typhoid fever throughout the 20 months of active surveillance.

In a double-blind, randomized, controlled efficacy clinical trial conducted in a highly endemic area in South Africa, a total of 5,692 paediatric subjects aged from 5 to 15 years of age received TYPHIM Vi. The level of protection conferred by a single dose of the vaccine was 55% against blood culture-confirmed cases of typhoid fever during the 3-year follow-up period.

5.2 Pharmacokinetic properties

Not applicable.

5.3 Preclinical safety data

Not applicable.

6 PHARMACEUTICAL PARTICULARS

6.1 List of excipients

Phenol
Sodium chloride
Disodium phosphate dihydrate
Sodium dihydrogen phosphate dihydrate
Water for injections

6.2 Incompatibilities

In the absence of compatibility studies, this medicinal product must not be mixed with other medicinal products.

6.3 Shelf life

3 years.

6.4 Special precautions for storage

Store in a refrigerator (2°C - 8°C). Do not freeze.
Keep the syringe in the outer carton in order to protect from light.

6.5 Nature and contents of container

0.5 ml single dose prefilled syringe (type I glass) with plunger (chlorobutyl elastomer), attached needle and needle shield (natural rubber or polyisoprene elastomer).

0.5 ml single dose prefilled syringe (type I glass) with plunger (chlorobutyl elastomer) and tip cap (bromochlorobutyl or synthetic isoprene-bromobutyl elastomer), without needle.

0.5 ml single dose prefilled syringe (type I glass) with plunger (chlorobutyl elastomer) and tip cap (bromochlorobutyl or synthetic isoprene-bromobutyl elastomer), with 1 or 2 separate needles (for each syringe).

Packs of 1 or 10.

Not all pack sizes and presentations may be marketed.

6.6 Special precautions for disposal and other handling

The vaccine should be visually inspected before administration for discolouration or any particulate matter.

Shake well immediately before use.

For needle free syringes, the needle should be pushed firmly on to the end of the pre-filled syringe and rotated through 90 degrees.

Any unused product or waste material should be disposed of in accordance with local requirements.

7 MARKETING AUTHORISATION HOLDER

Sanofi Winthrop Industrie
82 Avenue Raspail
Gentilly
94250
France

8 MARKETING AUTHORISATION NUMBER

PA23458/009/001

9 DATE OF FIRST AUTHORISATION/RENEWAL OF THE AUTHORISATION

Date of first authorisation: 18th August 1992

Date of last renewal: 18th August 2007

10 DATE OF REVISION OF THE TEXT

January 2025