Summary of Product Characteristics

1 NAME OF THE MEDICINAL PRODUCT

diTeBooster, suspension for injection in pre-filled single-dose syringes.Diphtheria and tetanus vaccine (adsorbed, reduced antigen content).

2 QUALITATIVE AND QUANTITATIVE COMPOSITION

One dose (0.5 ml) contains:
Diphtheria Toxoid, purified[1] 6.25 Lf / ≥2 IU
Tetanus Toxoid, purified[1] 6.25 Lf / ≥20 IU

[1] adsorbed on aluminium hydroxide, hydrated (Al(OH)3) corresponding to 0.5 mg aluminium (Al^{3+}).

The diphtheria and tetanus toxins, obtained from cultures of *Corynebacterium diphtheriae* and *Clostridium tetani*, are purified and detoxified.

No substances of human origin are used during the vaccine manufacture.

The vaccine may contain traces of formaldehyde which is used during the manufacturing process (see section 4.4).

For the full list of excipients, see section 6.1.

3 PHARMACEUTICAL FORM

Suspension for injection in pre-filled syringes. (Injection).
Colourless or light yellow suspension of white/grey particles.

4 CLINICAL PARTICULARS

4.1 Therapeutic indications

Active immunisation against tetanus and diphtheria in individuals from 5 years of age.

Re-vaccination against diphtheria and tetanus, and primary immunisation in individuals with missing, incomplete or unknown primary immunisation.

Tetanus prophylaxis in individuals from 5 years of age with tetanus prone injuries with simultaneous immunisation against diphtheria.

The use of diTeBooster should be in accordance with official national recommendations.

4.2 Posology and method of administration

Posology
diTeBooster should be administered intramuscularly as a single dose of 0.5 ml for all ages.

Revaccination
diTeBooster can be used for revaccination of individuals who are previously primary vaccinated against diphtheria and tetanus in accordance with national recommendations.

A booster response can only be expected in individuals who have been primary vaccinated.

Repeat vaccination against diphtheria and tetanus should be performed at intervals per official recommendations (generally 10 years).

Primary immunisation
Persons with unknown immunisation status, missing or incomplete primary vaccination can be vaccinated with diTeBooster. More than one vaccination may be needed to require protective immunity against diphtheria and tetanus. National recommendations should be followed.

Tetanus-prone injuries
In persons with tetanus-prone injuries, diTeBooster can be administered when vaccination against diphtheria is also relevant. Tetanus immunoglobulin can be administered simultaneously in accordance with national recommendations.

Paediatric population
The safety and efficacy of diTeBooster in children below 5 years of age have not been established (no data are available).

Method of administration
diTeBooster should be administered intramuscularly (IM), preferably in the deltoid region.

Do not inject intravascularly.

Shake before use.

At certain indications (for example haemorrhagic diathesis) diTeBooster can be administered deep subcutaneously.

4.3 Contraindications

Serious adverse reactions following previous vaccination with the vaccine or hypersensitivity to the active substances or to any of the excipients listed in section 6.1.

4.4 Special warnings and precautions for use

- As with all injectable vaccines, appropriate medical treatment and supervision should always be readily available in case of a rare anaphylactic event following the administration of the vaccine.
- Vaccination should be postponed in case of acute illness with fever.
- diTeBooster should under no circumstances be administered intravascularly.
- As with any injectable vaccine, diTeBooster must be administered with caution to individuals with uncontrolled coagulopathy since bleeding may occur following intramuscular administrations.
- In individuals with compromised immune response, the serological response may be impaired. Vaccination of individuals receiving immunosuppressive treatment can take place, but may result in a reduced immunological response.
- Formaldehyde is used during the manufacturing process and trace amounts may be present in the final product. Caution should be taken in subjects with known hypersensitivity to formaldehyde.
- diTeBooster contains less than 1 mmol sodium (23 mg) per dose and is essentially "sodiumfree".
- Too frequent booster vaccination will increase the risk of adverse reactions..

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

Do not mix with other vaccines in the same syringe.

Concomitant use of diTeBooster with other inactivated vaccines has not been studied. It is unlikely that co-administration will result in interference with the immune responses. When considered necessary, diTeBooster can be administered simultaneously with other vaccines, at a different injection site.

If it is necessary to provide immediate protection, diTeBooster may be given at the same time as tetanus immunoglobulin. Injections of diTeBooster and tetanus immunoglobulin should be made into separate limbs.

4.6 Fertility, pregnancy and lactation

Pregnancy
No relevant animal data are available. In humans the data are inadequate to assess teratogenic or fetotoxic risk during pregnancy. During pregnancy the possible risk of clinical infection following exposure should be weighed against the theoretical risks of vaccination.

Breast-feeding
There is no evidence that vaccination of the breast-feeding mother with diTeBooster is harmful to the infant.

Fertility
The effect on reproductive organs has not been studied in toxicological developmental studies. However, nothing indicates that vaccination has an effect on male and female fertility.

4.7 Effects on ability to drive and use machines

diTeBooster has no or negligible influence on the ability to drive and use machines.

4.8 Undesirable effects

In relation to the administration of diTeBooster, the most common adverse reactions are redness and swelling at the injection site and fever. The reactions most commonly start within 48 hours from the day of vaccination.

Tabulated list of adverse reactions
The adverse reactions listed below are based on data from clinical trials in children, adolescents and adults, and are classified according to MedDRA System Organ Class.
The safety evaluation of diTeBooster also includes adverse reactions from clinical trials and spontaneous reporting with vaccines containing the same or higher antigen content of diphtheria and tetanus than diTeBooster in combination with aluminium hydroxide and other vaccine antigens.

System Organ Class and frequency	Adverse reactions
Immune System disorders	
Rare (≥1/10.000 to <1/1.000)	Hypersensitivity, including anaphylactic reactions
Nervous system disorder	
Very common (≥1/10)	Headache
Common (≥1/100 to <1/10)	Dizziness
Very rare (<1/10.000)	Vasovagal syncope
Gastrointestinal disorders	
Common (≥1/100 to <1/10)	Nausea, vomiting and diarrhoea
Skin and subcutaneous tissue disorder	
Uncommon (≥1/1,000 to <1/100)	Eczema and dermatitis
Rare (≥1/10.000 to <1/1.000)	Urticarial reactions
Musculoskeletal and connective tissue disorders	
Common (≥1/100 to <1/10)	Myalgia
General disorders and administration site conditions	
Very common (≥1/10)	Injection site redness/swelling* Injection site pain Injection site itching Fatigue
Common (≥1/100 to <1/10)	Malaise Fever ≥ 38°C

	Redness/swelling ≥ 5 cm at the injection site
Rare (≥1/10.000 to <1/1.000)	High fever > 40ºC Granuloma or sterile abscess at the injection site.

* In adults, less frequent (common) injection site redness/swelling has been observed.

Paediatric population
The safety evaluation of diTeBooster studied in the clinical trials includes children from the age of 4 years and adolescents.

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. Website: www.hpra.ie

4.9 Overdose

No cases of overdose have been reported.

5 PHARMACOLOGICAL PROPERTIES

5.1 Pharmacodynamic properties

Pharmacotherapeutic group: Tetanus toxoid, combinations with diphtheria toxoid,
ATC-code: J07AM51.

Mechanism of action
Shortly after vaccination, antibodies are produced against both vaccine antigens. Protection against diphtheria and tetanus can be expected to last for at least 10 years.

Clinical efficacy and safety
Clinical trials with diTeBooster have been performed in children, adolescents and adults. The immunogenicity evaluation of diTeBooster also includes data from clinical trials with vaccines containing the same antigen content of diphtheria and tetanus as diTeBooster in combination with aluminium hydroxide and other vaccine antigens e.g. acellular pertussis. The results are summarised in the table below.

Study population	Age	Children 5-6 years	Children 10 years	Adolescents 14-15 years	Adults 18-55 years
	Vaccination history	3 x DTaP first year of life	3 x DT first year of life,	3 x DTaP first year of life; 1 x TdaP 4-6 years of age	3-4 x D and T first year of life
Antigen	Immune response				
Diphtheria	≥ 0.1 IU/ml	98.6-100%	-	100%	98.5-100%
	≥ 0.01 IU/ml	100%	100%	-	98.8-100%
Tetanus	≥ 0.1 IU/ml	99.3-100%	100%	100%	99.4-100%
	≥ 0.01 IU/ml	99.3-100%	100%	-	99.4-100%

Diphtheria and tetanus antibodies were measured one month after vaccination.

Diphtheria and tetanus antibody levels of ≥ 0.01 IU/ml are considered the minimum level of antibodies required to confer some degree of protection, while antibody levels of at least 0.1 IU/ml are considered protective.

5.2 Pharmacokinetic properties

Evaluation of pharmacokinetic properties is not required for vaccines.

5.3 Preclinical safety data

The subacute and acute toxicity of the vaccine components have been investigated in animal tests. No clinical symptoms or systemic toxicity have been reported.

6 PHARMACEUTICAL PARTICULARS

6.1 List of excipients

Per dose = 0.5 ml:
Sodium hydroxide to pH = 7
Sodium chloride
Water for injections

The pH of the vaccine is approximately 7.

For adsorbants, see section 2.

6.2 Incompatibilities

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

6.3 Shelf life

3 years.

6.4 Special precautions for storage

Store in a refrigerator (2ºC - 8ºC).
Do not freeze.
Discard if the vaccine has been frozen.

6.5 Nature and contents of container

Pre-filled single-dose syringes (type I glass) containing 0.5 mL (1 dose).
Pack size: 1 x 0.5 mL, 5 x 0.5 mL, 10 x 0.5 mL and 20 x 0.5 mL.

Not all pack sizes may be marketed.

6.6 Special precautions for disposal and other handling

Shake before use.

After thorough re-suspension the vaccine should appear as a colourless or light yellow suspension of white or grey particles.

Inspect the vaccine for extraneous particulate matter and/or discolouration before use. If these conditions exist, the product should not be administered.

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

7 MARKETING AUTHORISATION HOLDER

AJ Vaccines A/S
5 Artillerivej
DK-2300 Copenhagen S
Denmark

8 MARKETING AUTHORISATION NUMBER

PA2160/001/001

9 DATE OF FIRST AUTHORISATION/RENEWAL OF THE AUTHORISATION

Date of first authorisation: 2nd February 2007
Date of last renewal: 9th September 2008

10 DATE OF REVISION OF THE TEXT

April 2021