SUMMARY OF PRODUCT CHARACTERISTICS

0. D.Sp.No.
31247

1. NAME OF THE MEDICINAL PRODUCT
Picovax

2. QUALITATIVE AND QUANTITATIVE COMPOSITION
One dose (0.5 mL) contains:
Poliovirus (inactivated)[1]

Type 1 (Brunhilde)[2]	not less than 3.2 D-antigen unit
Type 2 (MEF-1)[2]	not less than 0.88 D-antigen unit
Type 3 (Saukett)[2]	not less than 3.1 D-antigen unit

[1]adsorbed on aluminium hydroxide, hydrated corresponding to 0.5 mg aluminium.
[2]propagated in Vero cells.

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.

This is a multi-dose container. See section 6.5 for the number of doses per vial.

3. PHARMACEUTICAL FORM
Suspension for injection.

Upon shaking, Picovax appears as a pink to red suspension with white or grey particles.

4. CLINICAL PARTICULARS

4.1 Therapeutic indications
Picovax is indicated for active immunisation against poliomyelitis as follows:
Primary vaccination from 6 weeks of age.
Revaccination (boosting) of infants, children, adolescents and adults.

4.2 Posology and method of administration
Posology
One dose of 0.5 mL for all age groups.

Primary vaccination
A vaccination series consisting of 2-3 doses administered from 6 weeks of age in accordance with official recommendations.
There should be an interval of at least 4 weeks between each dose.

Revaccination (boosting)
After completion of the primary vaccination series, revaccination with Picovax can be performed. The need for and the timing of revaccination should be decided in accordance with official recommendations.

Picovax can be used in a mixed/sequential schedule with oral poliomyelitis vaccine (OPV) in accordance with official recommendations.

Special populations
In immunosuppressed persons, the serological response may be impaired. Vaccination of persons receiving immunosuppressive treatment can take place, but may result in an impaired serological

response. If possible, vaccination should be postponed until influence of immunosuppressive treatment has ceased (see section 4.4).

Paediatric population
The safety and immunogenicity of Picovax in infants less than 6 weeks of age have not been established.

Method of administration
Picovax should be administered by intramuscular (IM) injection. The preferred sites are the anterolateral aspect of the thigh in infants or the deltoid muscle of the upper arm in children, adolescents and adults.

Picovax must not be administered intravascularly or intradermally.

Precautions to be taken before handling or administering the medicinal product
Prior to administration, Picovax must be shaken until it appears as a pink to red suspension with white or grey particles, see section 6.6.

4.3 Contraindications
- Picovax should not be administered to individuals who had a severe reaction after a previous injection of Picovax or a vaccine containing the same substances.
- Picovax should not be administered to individuals with known hypersensitivity to the active substances or to any of the excipients listed in section 6.1. For hypersensitivity to formaldehyd, please see section 4.4.
- As with other vaccines, vaccination should be postponed in subjects suffering from an acute severe febrile illness.

4.4 Special warnings and precautions for use
- Picovax must be shaken before use until it appears as a pink to red suspension with white or grey particles.
- As with all injectable vaccines, appropriate medical treatment and supervision should always be readily available in the case of a rare anaphylactic event following administration of the vaccine.
- Picovax should under no circumstances be administered intravascularly or intradermally.
- As with any injectable vaccine, Picovax must be administered with caution to subjects with uncontrolled coagulopathy since bleeding may occur following intramuscular administrations.
- It may be expected, that in patients receiving immunosuppressive treatment or patients with immunodeficiencies, an adequate immune response may not be elicited. Vaccination of patients receiving immunosuppressive treatment can take place, but may result in an impaired serological response. If possible, vaccination should be postponed until influence of immunosuppressive treatment has ceased.
- Vaccination of persons with chronic immunodeficiency, e.g. HIV infection, is recommended even though the serological response might be impaired.
- As with any vaccine, a protective immune response may not be elicited in all vaccinees.
- Formaldehyde has been used during the manufacturing process and trace amounts may be present in the product. Caution should be observed in individuals with known hypersensitivity to formaldehyde.
- In order to improve traceability of biological medicinal products, the name and the batch number of the administered product should be clearly recorded.

Paediatric population
The potential risk of apnoea and the need for respiratory monitoring for 48–72h should be considered when administrating the primary vaccination series to very premature infants (born ≤28 weeks of gestation) and particularly for those with a previous history of respiratory immaturity. As the benefit of vaccination is high in this group of infants, vaccination should not be withheld or delayed.

4.5 Interaction with other medicinal products and other forms of interaction

With exception of immunosuppressive treatment (see section 4.4) there is no known interaction with any medicinal product.

Picovax can be administered concomitantly, before or after other live or inactivated vaccines. The vaccines should be administered at different injection sites.

4.6 Fertility, pregnancy and lactation

Pregnancy

As with other inactivated vaccines, harm to the foetus is not anticipated. However, Picovax should only be used during pregnancy when there is a clear need for vaccination.

Breastfeeding

The effect on breastfed infants of administration of Picovax to their mothers has not been studied.

Fertility

Nothing indicates that vaccination has an effect on male and female fertility. Data from animal studies showed no effect on reproductive organs.

4.7 Effects on ability to drive and use machines

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

4.8 Undesirable effects

Summary of the safety profile

The most frequently reported reactions after administration of Picovax are transient reactions at the injection site, fever and general malaise. These reactions usually occur within 48 hours after vaccination.

Anaphylactic reactions are very rarely reported for vaccines. The necessary precautions for treatment of anaphylactic reactions should always be taken (see section 4.4).

Tabulated list of adverse reactions

The adverse reactions listed below are based on data from clinical trials in infants, children, adolescents and adults, and are classified according to MedDRA System Organ Class.

The safety evaluation of Picovax also includes adverse reactions from clinical trials and spontaneous reporting with vaccines containing a higher antigen content of poliovirus type 1, 2 and 3 than Picovax; either as a stand-alone vaccine or in combination with aluminium hydroxide and other vaccine antigens.

Immune system disorders Very rare (<1/10,000)	Anaphylactic reaction Hypersensitivity
Metabolism and nutrition disorders Very common (≥1/10)	Decreased appetite
Nervous system disorders Very common (≥1/10) Rare (≥1/10,000 to <1/1,000)	Headache Somnolence Febrile convulsion
Gastrointestinal disorders Common (≥1/100 to <1/10)	Diarrhoea Vomiting Nausea
Skin and subcutaneous tissue disorders Common (≥1/100 to <1/10)	Rash

Musculoskeletal and connective tissue disorders Common (≥1/100 to <1/10)	Myalgia
General disorders and administration site conditions Very common (≥1/10)	Pyrexia Crying Fatigue Irritability Injection site pain Injection site erythema Injection site swelling
Common (≥1/100 to <1/10)	Injection site hematoma Injection site itching
Uncommon (≥1/1,000 to <1/100)	Pyrexia ≥ 40°C
Not known (cannot be estimated from the available data)	Injection site granuloma

Paediatric population
The safety evaluation of Picovax includes data from clinical trials and spontaneous reporting with vaccines containing a higher antigen of poliovirus type 1, 2 and 3 content than Picovax; either as a stand-alone vaccine or in combination with aluminium hydroxide and other vaccine antigens.
The paediatric population studied in the clinical trials includes infants from 6 weeks of age, children and adolescents.

Apnoea may occur in very premature infants (born ≤28 weeks of gestation) (see section 4.4).

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:

Danish Medicines Agency
Axel Heides Gade 1
DK-2300 Copenhagen S
Website: www.meldenbivirkning.dk
E-mail: dkma@dkma.dk

4.9 Overdose
Undesirable effects in relation to overdosage are not expected.

4.10 General classification for supply
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5. PHARMACOLOGICAL PROPERTIES

5.0 Pharmacotherapeutic group
ATC code: J 07 BF 03. poliomyelitis, trivalent, inactivated

5.1 Pharmacodynamic properties

Mechanism of action

Picovax administered in a primary vaccination series and as a booster dose, stimulates the production of neutralising antibodies against poliovirus type 1, 2 and 3.

Paediatric population

Clinical trials with Picovax have been performed in infants, children and adolescents.

Neutralising antibody titers ≥ 8 against poliovirus type 1, 2 and 3 is considered a correlate of protection against poliomyelitis. Immunity induced by one serotype does not provide protection against the other two serotypes.

In the clinical trials with Picovax seroconversion and seroprotection were investigated in different primary vaccination series. The results are summarised below:

Seroconversion and seroprotection rates one month after primary vaccination with 3 doses of Picovax.

Schedule	6, 10 and 14 weeks		2, 4 and 6 months
	N = 204	N = 473	N = 355
	%	%	%
Poliovirus type 1			
Seroconversion[a]	98.5	97.1	96.1
Seroprotection[b]	100	97.9	96.6
Poliovirus type 2			
Seroconversion[a]	94.6	94.2	100
Seroprotection[b]	100	100	100
Poliovirus type 3			
Seroconversion[a]	99.5	98.3	99.2
Seroprotection[b]	99.5	99.0	99.2

[a] Seroconversion: Type-specific post-vaccination titre ≥ 4-fold above the estimated titre of maternal antibodies (based on the pre-vaccination titre declining with a half-life of 28 days) *and* a type-specific post-vaccination titre ≥ 8.
[b] Seroprotection: type-specific post-vaccination titre ≥ 8.

The booster effect of Picovax was evaluated in infants, children and adolescents previously vaccinated with either Picovax or an other inactivated poliovirus (IPV) containing vaccine. The results are summarised below:

Seroprotection rates one month after booster vaccination with 1 dose of Picovax.

Schedule	Booster vaccination at 9 months of age	Booster vaccination at 15-18 months of age		Booster vaccination at 10-15 years of age after
	Primary vaccination at 6, 10 and 14 weeks	Primary vaccination at 2, 4 and 6 months		Primary vaccination at 3, 5 and 12 months and a booster vaccination at 5 years of age
	N = 441*	N = 336*	N = 309**	N = 59**
	%	%	%	%
Poliovirus type 1 Seroprotection[b]	99.8	97.0	100	100
Poliovirus type 2 Seroprotection[b]	100	100	100	100
Poliovirus type 3 Seroprotection[b]	100	100	100	100

[b] Seroprotection: Type-specific post-vaccination titre ≥ 8.
* Previous vaccination with Picovax.

** Previous vaccination with an other IPV vaccine.

There are no clinical trial data on use for primary vaccination beyond infancy. However, referring to the World Health Organization's recommendations, IPV vaccines can be administered to unvaccinated children, adolescents and adults.

5.2 Pharmacokinetic properties
Evaluation of pharmacokinetic properties is not required for vaccines.

5.3 Preclinical safety data
Non-clinical data reveal no special hazard for humans based on conventional studies of single and repeated dose toxicity.

6. PHARMACEUTICAL PARTICULARS

6.1 List of excipients
Sodium hydroxide
Sodium phosphate monobasic, monohydrate
Sodium chloride
Water for injections
Medium 199[1] (contains phenolsulfonphthalein as pH indicator)
Phenyoxyethanol

[1]Medium 199 contains vitamins, mineral salts and amino acids including phenylalanine.

For adjuvants, see section 2.

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

6.3 Shelf life
24 months.

After first use:
From a microbiological aspect, once opened, the vaccine may be stored for a maximum of 28 days in a refrigerator (2°C – 8°C).

6.4 Special precautions for storage
Store in a refrigerator (2°C – 8°C).
Do not freeze.
Vaccine that has been frozen should not be used.
Keep the vial in the outer carton until first use in order to protect from light.

For storage conditions after first opening of the medicinal product, see section 6.3.

6.5 Nature and contents of container
Suspension for injection in a multi-dose container with 5 x 0.5 mL doses in a Type 1 glass vial with a chlorobutyl stopper and an aluminium cap.
The vial and stopper do not contain latex.

Pack sizes of 1, 5, 10, 20 and 50 vials.

Not all pack sizes may be marketed.

6.6 Special precautions for disposal and other handling
Prior to administration, Picovax must be shaken until it appears as a pink to red suspension with grey or white particles.

Picovax should not be used if it appears yellow.

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(S)

61354

9. DATE OF FIRST AUTHORISATION/RENEWAL OF THE AUTHORISATION

29 May 2019

10. DATE OF REVISION OF THE TEXT

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