1. NAME OF THE MEDICINAL PRODUCT

Deca-Durabolin® 25 mg/ml solution for injection

2. QUALITATIVE AND QUANTITATIVE COMPOSITION

Each ampoule contains 1 ml of 25 mg/ml nandrolone decanoate

For the full list of excipients, see 6.1.

3. PHARMACEUTICAL FORM

Solution for injection.

Clear, yellow, oily solution

4. CLINICAL PARTICULARS

4.1 Therapeutic indications

- Treatment of osteoporosis
- For the palliative treatment of selected cases of disseminated mammary carcinoma in women.
- As an adjunct to specific therapies and dietary measures in pathologic conditions characterized by a negative nitrogen balance

4.2 Posology and method of administration

Deca-Durabolin should be administered by deep intramuscular injection.

For treatment of osteoporosis: 50 mg once every 3 weeks

For the palliative treatment of selected cases of disseminated mammary carcinoma in women: 50mg every 2 – 3 weeks

As an adjunct to specific therapies and dietary measures in pathologic conditions characterized by a negative nitrogen balance: 25-50 mg every 3 weeks.

N.B. For an optimal therapeutic effect it is necessary to administer adequate amounts of vitamins, minerals and protein in a calorie-rich diet.

Safety and efficacy have not been adequately determined in children and adolescents (see section 4.4).

4.3 Contraindications

- Pregnancy (see Section 4.6)
- Known or suspected carcinoma of the prostate or breast in the male (see section 4.4)
- Hypersensitivity to the active substance or to any of the excipients, including arachis oil. Deca-Durabolin is therefore contraindicated in patients allergic to peanuts or soya (see section 4.4)

4.4 Special warnings and precautions for use

Medical examination:

Physicians should consider monitoring patients receiving Deca-Durabolin before the start of treatment, at quarterly intervals for the first 12 months and yearly thereafter for the following parameters:

- Digital rectal examination (DRE) of the prostate and PSA to exclude benign prostate hyperplasia or a sub-clinical prostate cancer (see section 4.3),
- Hematocrit and hemoglobin to exclude polycythemia.

Conditions that need supervision:

Patients, especially the elderly, with the following conditions should be monitored for:

- **Tumours** – Mammary carcinoma, hypernephroma, bronchial carcinoma and skeletal metastases. In these patients hypercalcemia may develop spontaneously, also during anabolic steroid therapy. The latter can be indicative of a positive tumour response to the hormonal treatment. Nevertheless, the hypercalcemia should first be treated appropriately and after restoration of normal calcium levels, hormone therapy can be resumed.
- **Pre-existing conditions** – In patients with pre-existing cardiac, renal or hepatic insufficiency/disease anabolic steroid treatment may cause complications characterized by edema with or without congestive heart failure. In such cases treatment must be stopped immediately.

  Patients who experienced myocardial infarction, cardiac-, hepatic- or renal insufficiency, hypertension, epilepsy, or migraine should be monitored due to the risk of deterioration on or reoccurrence of disease. In such cases treatment must be stopped immediately.
- **Diabetes mellitus –** Deca-Durabolin can improve the glucose tolerance in diabetic patients (see section 4.5).

- **Anti-coagulant therapy –** Deca-Durabolin can enhance the anti-coagulant action of coumarin-type agents (see section 4.5).

Adverse events:

- If anabolic steroid-associated adverse reactions occur (see section 4.8), treatment with Deca-Durabolin should be discontinued and, upon resolution of complaints, resumed with a lower dose.

Virilization:

Patients should be informed about the potential occurrence of signs of virilization. In particular singers and women with speech professions should be informed about the risk of deepening of the voice.If signs of virilisation develop, the risk/benefit ratio has to be newly assessed with the individual patient.

(Mis)use in sports:
Patients who participate in competitions governed by the World Anti-Doping Agency (WADA) should consult the WADA-code before using this product as Deca-Durabolin can interfere with anti-doping testing

- The misuse of anabolic steroids to enhance ability in sports carries serious health risks and is to be discouraged

Excipients:
Deca-Durabolin contains arachis oil (peanut oil) and should not be taken/ applied by patients known to be allergic to peanut. As there is a possible relationship between allergy to peanut and allergy to soya, patients with soya allergy should also avoid Deca-Durabolin (see section 4.3)

Deca-Durabolin contains 100 mg benzyl alcohol per ml solution and must not be given to premature babies or neonates. Benzyl alcohol may cause toxic reactions and anaphylactoid reactions in infants and children up to 3 years old.

Paediatric Population:

In pre-pubertal children statural growth and sexual development should be monitored since anabolic steroids in general and Deca-Durabolin in high dosages may accelerate epiphyseal closure and sexual maturation.

4.5 Interaction with other medicinal products and other forms of interaction

Enzyme-inducing agents may decrease and enzyme-inhibiting drugs may increase nandrolone levels. Therefore, adjustment of the dose of Deca-Durabolin may be required.

Insulin and other anti-diabetic medicines:

Anabolic steroids may improve glucose tolerance and decrease the need for insulin or other antidiabetic medicines in diabetics patients (see section 4.4). Patients with diabetes mellitus should therefore be monitored especially at the beginning or end of treatment and at periodic intervals during Deca-Durabolin treatment.

Anti-coagulant therapy:High doses of Deca-Durabolin may enhance the anticoagulant action of coumarin-type agents (see section 4.4). Therefore close monitoring of prothrombin time and if necessary a dose reduction of the anticoagulant is required during therapy.

ACTH or corticosteroids:

The concurrent administration of anabolic steroids with ACTH or corticosteroids may enhance oedema formations; thus these active substances should be administered cautiously, particularly in patient with cardiac or hepatic disease or in patient predisposed to oedema (see section 4.4).

Laboratory test interactions

Anabolic steroids may decrease levels of thyroxine-binding globulin resulting in decreased total T4 serum levels and increase resin uptake of T3 and T4. Free thyroid hormone levels remain unchanged, however, and there is no clinical evidence of thyroid dysfunction

Recombinant Human Erythropoietin:Combination of Deca-Durabolin (50-100 mg/week) with rhEPO (recombinant human erythropoietin), especially in females, may enable a reduction of the erythropoietin dose to reduce anaemia

4.6 Pregnancy, lactation and fertility

Deca-Durabolin is contra-indicated in women who are pregnant (see section 4.3).

Pregnancy

There are no adequate data from the use of Deca-Durabolin in pregnant women. In view of the risk of virilization of the fetus, Deca-Durabolin should not be used during pregnancy. Treatment with Deca-Durabolin should be discontinued when pregnancy occurs (see Section 4.3).

Lactation

There are no adequate data from the use of Deca-Durabolin during lactation. Therefore, Deca-Durabolin should not be used during lactation.

Fertility:

In men, treatment with Deca-Durabolin can lead to fertility disorders by repressing sperm-formation. In women treatment with Deca-Durabolin can lead to an infrequent or repressed menstrual cycle (see section 4.8).

4.7 Effects on ability to drive and use machines

Deca-Durabolin has no influence on the ability to drive and use machines.

4.8 Undesirable effects

Due to the nature of Deca-Durabolin, side effects cannot be quickly reversed by discontinuing medication. Injectables in general, may cause a local reaction at the injection site.

Dependent on the dose, frequency and total period of administration of Deca-Durabolin the following undesirable effects may occur (see also Section 4.4):

System Organ Class	MedDRA term *
Endocrine disorders	Virilism
Metabolism and nutrition disorders	Hyperlipidaemia
Psychiatric disorders	Libido increased
Vascular disorders	Hypertension
Respiratory, thoracic and mediastinal disorders	Dysphonia
Gastrointestinal disorders	Nausea
Hepatobiliary disorders	Hepatic function abnormal Peliosis hepatis
Skin and subcutaneous tissue disorders	Acne Rash

System Organ Class	MedDRA term *
	Pruritus Hirsutism
Musculoskeletal and connective tissue disorders	Epiphyses premature fusion
Renal and urinary disorders	Urine flow decreased
Reproductive system and breast disorders	Benign prostatic hyperplasia Priapism Penis enlarged Enlarged clitoris Oligomenorrhoea Amenorrhoea Sperm count decreased
General disorders and administration site conditions	Oedema Injection site reaction
Investigations	High density lipoprotein decreased Sperm count decreased Haemoglobin increased
Injury, poisoning and procedural complications	Intentional misuse

* MedDRA version 15.0.

The terms used to describe the undesirable effects above are also meant to include synonyms and related terms.

Paediatric population:

The following undesirable effects have been reported in pre-pubertal children using androgens (see section 4.4): precocious sexual development, an increased frequency of erections, phallic enlargement and premature epiphyseal closure.

4.9 Overdose

The acute toxicity of nandrolone decanoate in animals is very low.

There are no reports of acute overdosage with Deca-Durabolin in the human.

Chronic overdose to enhance athletic abilities carries severe risks to the abuser's health.

5. PHARMACOLOGICAL PROPERTIES

5.1 Pharmacodynamic properties

Pharmacotherapeutic group: Anabolic steroids. (ATC code): A14A B01

Deca-Durabolin contains the decanoate ester of nandrolone. This decanoate ester gives the preparation a duration of action of about three weeks after injection. In the circulation the decanoate ester is hydrolyzed to nandrolone. Nandrolone is chemically related to the male hormone, testosterone. Compared to testosterone, it has an enhanced anabolic and a reduced androgenic activity. This has been demonstrated in animal bioassays and can be explained by its metabolism to 5α-dihydronandrolone, which has reduced binding capacity to the androgen receptor, in contrast to 5α-dihydrotestosterone, which displays enhanced binding. The low androgenicity of nandrolone is confirmed in clinical use. The risk of virilization increases with higher dosages and frequency of administration and the length of treatment.

Deca-Durabolin has been shown to positively influence calcium metabolism and to increase bone mass in osteoporosis. Furthermore, Deca-Durabolin has a nitrogen-saving action. This effect on protein metabolism has been established by metabolic studies and is utilized therapeutically in conditions where a protein deficiency exists such as during chronic debilitating diseases and after major surgery, burns and severe trauma. In these conditions, Deca-Durabolin serves as a supportive adjunct therapy to specific treatments and dietary measures including parenteral nutrition.

Androgenic effects (e.g. virilization) are relatively uncommon at the recommended dosages. Nandrolone lacks the C17α-alkyl group, which is associated with the occurrence of liver dysfunction and cholestasis.

5.2 Pharmacokinetic properties

Absorption

After deep intramuscular injection of Deca-Durabolin a depot is formed and nandrolone decanoate is slowly released from the injection site into the blood with a half-life of 6 days. The terminal half-life of Deca-Durabolin is 5 – 15 days.

Distribution

In the blood, the ester is rapidly hydrolyzed to nandrolone with a half-life of one hour or less. The combined process of hydrolysis, and distribution and elimination of nandrolone has a mean half-life of approximately 4 hours.

Biotransformation and excretion
Nandrolone is metabolized by the liver. The main excretion products in the urine are 19-norandrosterone and 19-noretiocholanolone. It is not known whether these metabolites display a pharmacological action.

5.3 Preclinical safety data

No formal studies to assess reproduction toxicity, genotoxicity and carcinogenicity have been conducted by the company. As a class, anabolic steroids are considered to be probably carcinogenic to humans (IARC Group 2a).

The use of androgens in different species has resulted in virilization of the external genitals of female fetuses. Some publications have reported nandrolone to be genotoxic in the *in vitro* micronucleus assay and micronucleus assay in mouse but not rat, and in the comet assay of mouse and rat. The relevance of these findings for use in patients is unknown.

6. PHARMACEUTICAL PARTICULARS

6.1 List of excipients
Arachis oil, 100 mg/ml benzyl alcohol

6.2 Incompatibilities
Not applicable.

6.3 Shelf life
5 years
Since an opened ampoule cannot be resealed in such a way to further guarantee the sterility of the contents, the solution should be used immediately.

6.4 Special precautions for storage
Store at or below 30°C; protect from light.

Do not refrigerate or freeze.

6.5 Nature and contents of container

1 ml in 1 ml type I glass ampoule

6.6 Instructions for use and handling <and disposal>

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

See also "Special precautions for storage" and "Posology and method of administration".

7. DATE OF REVISION OF THE TEXT

May 2017

8. PRODUCT OWNER

Aspen Global Incorporated
Mauritius