1. NAME OF THE MEDICINAL PRODUCT

DMSA 1.5 mg powder for solution for injection

2. QUALITATIVE AND QUANTITATIVE COMPOSITION

Each vial contains 1.5 mg of dimercaproic acid (DMSA). Sodium pertechnetate ([99mTc]Tc) solution for injection should be used for preparation of the technetium ([99mTc]Tc) DMSA diagnostic injection.

3. PHARMACEUTICAL FORM


4. CLINICAL PARTICULARS

4.1 Therapeutic indications

This medicinal product is for diagnostic use only. Indication field: Kidney function. After radiolabelling with sodium pertechnetate ([99mTc]Tc) solution the [99mTc]DMSA diagnostic injection is obtained.

4.2 Posology and method of administration

Posology

111-185 MBq [99mTc]-DMSA for intravenous injection. Elderly population

Dosing recommendations for older patients are the same as adults.

The use in children and adolescents has to be considered carefully, based upon clinical needs and assessing the risk/benefit ratio in this patient group.

For paediatric examination (see Chapter 4.3) use Webster’s equation to determine the activity to be administered:

\[ \text{Leg} = \frac{\text{NAge}}{\text{Nage of the child [year]}} \times \text{Adult activity [MBq]} \]

where N-age is the number of years to the patient, N-age of the child [year] activity [MBq]

Method of administration

[99mTc]-DMSA. After the labelling reaction containing 1-3 MBq ([99mTc]Tc) per 100 μL of plasma a DMSA injection is obtained. Under 18 years of age except if the necessity and importance of obtaining the diagnostic information outweighs the risk associated with the radiation exposure.

4.3 Contraindications

- Hypersensitivity to the active substance or to any of the excipients (listed in section 6.1) Pregnancy and lactation (See section 4.4) children of less than 18 years of age. In case of additional test the time dependence of accumulation after administration can be measured.

4.4 Special warnings and precautions for use

Potential for hypersensitivity or anaphylactic reactions

Hypersensitivity or anaphylactic reactions occur. The administration of the medicinal product must be discontinued immediately and intravenous treatment initiated, if necessary. To enable immediate action in emergencies, the necessary medicinal products and equipment such as endotracheal tube and ventilator must be immediately available.

Individual benefit/risk justification

For each patient, the radiation exposure must be justified by the likely benefit. The activity administered should in any case be as low as reasonably achievable to obtain the required diagnostic information.

Careful dose must be given over the closure of the closed pregnancy (if the woman has a 

4.5 Overdose

No case of overdose has been reported. The [99mTc]-DMSA should be used and administered only by authorised persons in clinical departments with the potential for physiological overdose is negligible. In case of incidental overdose be ready to provide life support. Radiation dose to the body can be reduced by increased and frequent diuresis. Cautiously, careful persons that have been exposed to a large excess may require medical attention, particularly in case of biliary obstruction, where there is a risk of significant accumulation in the liver.

In case of incidental overdose, the effectively administered activity of [99mTc] should be determined (in MBq) and the actual absorbed radiation dose must be calculated. Information about the contents of the dosage table of Chapter 11. Necessity and method of further treatment should be concluded based on these results. The table of Chapter 11 contains absorbed radiation dose data in μSv in case of effective administered of 1 MBq of [99mTc]DMSA. Multiply these specific absorbed radiation dose data by the effectively administered activity (in MBq) to obtain the required absorbed radiation dose data in μSv. Once the absorbed dose is known, a treatment plan should be put forward.

4.6 Fertility, pregnancy and lactation

Women of childbearing potential

When an administration of radiopharmaceuticals to a woman of childbearing potential is intended, it is important to determine whether or not she is pregnant. Any woman who has missed a period should be assumed to be pregnant until proven otherwise. If in doubt about her potential pregnancy (if the woman has missed a period or if the test for the presence of the urine is very irregular, etc.), alternative techniques not using ionising radiation (if there are any) should be offered to the patient.

Pregnancy

Pregnant women should not be investigated with DMSA. Furthermore, the radiation exposure during pregnancy, when the likely benefit far exceeds the risk incurred by the mother and fetus.

Breastfeeding

The [99mTc]Tc is secreted in breast milk. Before administering radiopharmaceuticals to a mother who is breastfeeding consideration should be given to the possibility of delaying the administration of radiopharmaceuticals until the mother has ceased breastfeeding, and to what is the most appropriate choice of radiopharmaceuticals, bearing in mind the secretion of radionuclide until the mother has ceased breastfeeding. The content of the kit before extemporary preparation is not radioactive. After radiolabelling with sodium pertechnetate ([99mTc]Tc) DMSA kit by one Summary Of Product Characteristic and Patient Information Leaflet and six labels with radioactive material sign.

4.7 Undesirable effects

4.7.1 Effects on the ability to drive and use machines

[99mTc]-DMSA has no or negligible influence on the ability to drive and use machines.

4.7.2 Undesirable effects

Exposure to ionising radiation is linked with cancer induction and a potential for hereditary defects. However, these effects are hardly expected regarding the applied amount of activity.

Adverse event and reactions have not been reported ever since the authorisation of [99mTc]-DMSA. Healthcare professionals are asked to report any suspected adverse reactions via the national reporting system one of the contacts (in Hungary: [99mTc]-DMSA is a reducing agent. It reduces free pertechnetate from (+) oxidation state to (+4) oxidation state, in which technetium readily forms complex with DMSA. It is important to keep the vials of the vials from moisture and light. In case of example chemical oxidation agents or air of the oxygen. Alkaline media facilitate the oxidation of SnII before the labelling reaction this is why the physiological saline solution can be used. As a result of these incompatibility it is recommended to remove the closed closure injection vials just before the radiolabelling according to the instructions given in the Section 4.2.2.

4.8 Preclinical safety data

Acute toxicity test on mice showed no clinical symptoms up to 0.43 mg/kg of the product (1989) not reported in the literature. Considering the number of the examinations carried out since, no adverse reactions are expected (frequency lower than 1/10000).

Side effects of radiopharmaceuticals

- Radiation exposure

Reporting suspected adverse reactions after administration 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 the national reporting system one of the contacts (in Hungary: [99mTc]-DMSA).

5. PHARMACEUTICAL PROPERTIES

5.1 Pharmacodynamic properties

Pharmacotherapeutic group: Diagnostic radiopharmaceutical, ATC code: V09A02.

The structure of DMSA-complex administered to the body is [99mTc-DMSA]. As it is a complex of a radionuclide, this means that the plasma proteins of the blood. Plasma-binding highly depends on the pH value of the product, at pH=3 binding is 90%, at pH=7 it is 50% [1]. [99mTc]-DMSA is secreted by the kidneys. This [99mTc]-DMSA is eliminated via the urine. This mechanism allows the binding of not more than 0.1 mg of DMSA to the kidneys.

With this mechanism maximum 0.1 mg DMSA can be bound per kg bodyweight.

The fractional uptake in the kidneys is determined by the ratio of the labelled plasma proteins to the plasma proteins of the blood.

5.2 Pharmacokinetic properties

After radiolabelling with sodium pertechnetate ([99mTc]Tc) solution for injection is used for labelling the labelled substance is administered to one patient. The activity eluted from the generator or obtained is indicated in section 6.1.

5.3 Incompatibilities


6. PHARMACEUTICAL PARTICULARS

6.1 List of excipients

Stannous chloride dehydrate, ascorbic acid, calcium gluconate.

6.2 Incompatibilities

For preparation of [99mTc]-DMSA kit by one Summary Of Product Characteristic and Patient Information Leaflet and six labels with radioactive material sign.

7. Shelf life

Kit: 24 month (from the date of the manufacture). The radiolabelled injection: after reconstitution and radiolabelling it must be used within 8 hours.

8. Special precautions for storage

Kit: Store in refrigerator (2°C–8°C). Keep the bottle in the outer carton in order to protect from light. The radiolabelled injection: do not store [99mTc]-DMSA injection above 25°C, protected from light. Storage of the radiolabelled injection should be in accordance with national regulation on radioactive materials.

8.5 Nature and contents of container

Sterile, type 1, 6 ml (colourless, 6R type injection vial, with wiper (halobutyl) rubber stopper, with green, flip-off plastic shield with rolled aluminum cap).

Multidose vial.

One box contains six vials with powder, one Summary Of Product Characteristic and Patient Information Leaflet and six labels with radioactive material sign.

8.6 Special precautions for disposal and other handling

The content of the kit before extemporary preparation is not radioactive. However, after sodium pertechnetate ([99mTc]Tc) solution for injection is added, radioisotope shielding of the final preparation must be maintained.

Radiopharmaceuticals should be received, used and administered only by authorized persons in designated clinical settings. Their receipt, storage, use, disposal is subject to one to the regulations and/or appropriate licenses of the local competent official organization. Radioactive products are considered a dangerous substance which satisfies both radiation safety and pharmaceutical quality requirements. Appropriate ascetic precautions should be taken.

Compliance with the dose weight level (caution in the preparation of the [99mTc]-DMSA injections and are not to be administered directly to the patient without first undergoing the preparative procedure. For the administration of the medicinal product before administration, see section 12. Administration procedures should be carried out in a way to minimize risk of contamination of the medicinal product and irradiation of the operators. Adequate shielding is mandatory.

The use of particular chemicals creates risks for other persons from external radiation or contamination from spill of urine, vomiting etc. Radiation protection precautions in accordance with national regulations must be kept. Any unused medicinal product or waste material should be disposed of in accordance with local regulations.

Classification

In accordance with CLVI 1997 on Health Care, (I), which may be used under the conditions provided by providers of outpatient care or outpatient services required by the outpatient clinic under section 3 (a) of the Act requirements.
If your doctor decides
nics). The Radiochemical purity of the Injection (Ph. Eur. 0643) than 2%.
Use the lab intravenously.

Place the vial containing the freeze dried powder in a small lead container which, in view of its long half-life, should be kept in a place where it cannot be reached. After removing the strips from the tank, let them dry in air and record the chromatogram by gamma scanner.

Expected Rf values:

- 
- 

Specification, Technecium-succinum complex: not less than 95%.

Impurity A ([99mTc]pertechnetate ion): ≤ 2%.

PACKAGING LEAFLET: INFORMATION FOR THE USER
DMSA 1.5 mg powder for solution for injection
Dimercaptosuccinic acid (DMSA)

Read all of this leaflet carefully before you get this medicine because it contains important information for you.

Keep this leaflet. You may need to read it again.

- If you have any further questions, ask your doctor.
- If you get any side effects, talk to your doctor. This includes any possible side effects not listed in this leaflet. See 4.

What is this in a leaflet?

1. What DMSA is and what it is used for

This medicine is radiopharmaceutical for diagnostic use containing radioactive isotope.

- w99mTc-DMSA injection prepared from DMSA kit is a diagnostic radiopharmaceutical containing Technetium-99m,

- 99mTc-DMSA is transported to the kidneys via the bloodstream, allowing to perform various diagnostic examinations of the kidney by imaging technique. As the medicine contains gamma-emitting radioactive isotope, it can be detected from outside the body using gamma cameras.

- When a picture is taken by a camera showing the distribution of the radioactive isotope in your body and organs. The pictures can give your doctor valuable information about the structure and working of the organ helping this way to choose the best treatment.

- 99mTc-DMSA is suitable for kidney scintigraphy, static imaging of kidney, detection of function (of the kidneys) by means of imaging, determination of functional mass of kidney, determination of relative functions of right and left kidneys.

- 99mTc-DMSA injection does involve exposure to small amounts of radioactivity. Your nuclear medicine doctor has considered that the clinical benefit that you will obtain from the procedure with the radiopharmaceutical outweighs the risk due to radiation.

2. What you need to know before DMSA is used

DMSA must not be used:
- if you are allergic (hypersensitive) to the active substance or any of the other ingredients of DMSA (listed in section 6),
- if you are pregnant or breast feeding, except if your doctor decides otherwise.

Warnings and precautions

Information for the nuclear medicine specialist if any of the following apply to you:
- if you are allergic (hypersensitive) to the active substance or any of the other ingredients of DMSA (listed in section 6),
- if you are pregnant or breast feeding, except if your doctor decides otherwise.

If you get any side effects, talk to your doctor. This includes any possible side effects not listed in this leaflet. See 4.

If you get any side effects, talk to your doctor. This includes any possible side effects not listed in this leaflet. See 4.

If you have any further questions, ask your doctor.

Keep this leaflet. You may need to read it again.

- If you have any further questions, ask your doctor.
- If you get any side effects, talk to your doctor. This includes any possible side effects not listed in this leaflet. See 4.

If you get any side effects, talk to your doctor. This includes any possible side effects not listed in this leaflet. See 4.

If you have any further questions, ask your doctor.

Keep this leaflet. You may need to read it again.

- If you have any further questions, ask your doctor.
- If you get any side effects, talk to your doctor. This includes any possible side effects not listed in this leaflet. See 4.

If you get any side effects, talk to your doctor. This includes any possible side effects not listed in this leaflet. See 4.

If you have any further questions, ask your doctor.

Keep this leaflet. You may need to read it again.

- If you have any further questions, ask your doctor.
- If you get any side effects, talk to your doctor. This includes any possible side effects not listed in this leaflet. See 4.