Package leaflet: Information for the user

Caspofungin 50 mg powder for concentrate for solution for infusion
Caspofungin 70 mg powder for concentrate for solution for infusion
Caspofungin

Read all of this leaflet carefully before you or your child are given this medicine because it contains important information for you.
- Keep this leaflet. You may need to read it again.
- If you have further questions, please ask your doctor, nurse or pharmacist.
- If you get any side effects, talk to your doctor, nurse or pharmacist. This includes any possible side effects not listed in this leaflet. See section 4.

What is in this leaflet

1. What Caspofungin is and what it is used for

What Caspofungin is
Caspofungin contains a medicine called caspofungin. This belongs to a group of medicines called antifungals.

What Caspofungin is used for
Caspofungin is used to treat the following infections in children, adolescents and adults:
- serious fungal infections in your tissues or organs (called 'invasive candidiasis'). This infection is caused by fungal (yeast) cells called Candida. People who might get this type of infection include those who have just had an operation or those whose immune systems are weak. Fever and chills that do not respond to an antibiotic are the most common signs of this type of infection.
- fungal infections in your nose, nasal sinuses or lungs (called 'invasive aspergillosis') if other anti-fungal treatments have not worked or have caused side effects. This infection is caused by a mould called Aspergillus. People who might get this type of infection include those having chemotherapy, those who have had a transplant and those whose immune systems are weak.
- suspected fungal infections if you have a fever and a low white cell count that have not improved on treatment with an antibiotic. People who are at risk of getting a fungal infection include those who have just had an operation or those whose immune systems are weak.

How Caspofungin works
Caspofungin makes fungal cells fragile and stops the fungus from growing properly. This stops the infection from spreading and gives the body's natural defenses a chance to completely get rid of the infection.

2. What you need to know before you are given Caspofungin

You must not be given Caspofungin

- if you are allergic to caspofungin or any of the other ingredients of this medicine (listed in section 6).

If you are not sure, talk to your doctor, nurse or pharmacist before you are given your medicine.

Warnings and precautions
Talk to your doctor, nurse or pharmacist before you are given Caspofungin:
- if you are allergic to any other medicines
- if you have ever had liver problems - you might need a different dose of this medicine
- if you are already taking cyclosporin (used to help prevent organ transplant rejection or to
- suppress your immune system) - as your doctor may need to run extra blood tests during your treatment.
- if you have ever had any other medical problem.

If any of the above applies to you (or you are not sure), talk to your doctor, nurse or pharmacist before you are given Caspofungin.

Caspofungin may also cause Serious Cutaneous Adverse Reactions such as Stevens-Johnson Syndrome (SJS) and toxic epidermal necrolysis (TEN).

Other medicines and Caspofungin
Tell your doctor, nurse or pharmacist if you are taking, have recently taken or might take any other medicines. This includes medicines obtained without a prescription, including herbal medicines. This is because Caspofungin can affect the way some other medicines work. Also some other medicines can affect the way Caspofungin works.

Tell your doctor, nurse or pharmacist if you are taking any of the following medicines:
- cyclosporin or tacrolimus (used to help prevent organ transplant rejection or to suppress your immune system) as your doctor may need to run extra blood tests during your treatment;
- some HIV medicines such as efavirenz or nevirapine;
- phenytoin or carbamazepine (used for the treatment of seizures);
- dexamethasone (a steroid);
- rifampicin (an antibiotic).

If any of the above apply to you (or you are not sure), talk to your doctor, nurse or pharmacist before you are given Caspofungin.

Pregnancy and breast-feeding
Ask your doctor for advice before taking any medicine, if you are pregnant or breast-feeding or think you are pregnant.
- Caspofungin has not been studied in pregnant women. It should be used in pregnancy only if the potential benefit justifies the potential risk to the unborn baby.
- Women given Caspofungin should not breast-feed.

Driving and using machines
There is no information to suggest that Caspofungin affects your ability to drive or operate machinery.

Caspofungin contains sodium
This medicine contains less than 1 mmol sodium (23 mg) per vial, that is to say essentially ‘sodium-free’.

3. How to use Caspofungin

Caspofungin will always be prepared and given to you by a healthcare professional.

You will be given Caspofungin:
- once each day
- by slow injection into a vein (intravenous infusion)
- over about 1 hour

Your doctor will determine the duration of your treatment and how much Caspofungin you will be given each day. Your doctor will monitor how well the medicine works for you. If you weigh more than 80 kg, you may need a different dose.

Children and adolescents
The dose for children and adolescents may differ from the adult dose.

If you have been given more Caspofungin than you should
Your doctor will decide how much Caspofungin you need and for how long each day. If you are worried that you may have been given too much Caspofungin, tell your doctor or nurse straight away.

If you have any further questions on the use of this medicine, ask your doctor, nurse or pharmacist.

4. Possible side effects

Like all medicines, this medicine can cause side effects, although not everybody gets them.

Tell your doctor or nurse straight away if you notice any of the following side effects - you may need urgent medical treatment:
- rash, itching, feeling warm, swelling of your face, lips or throat or difficulty breathing - you may be having a histamine reaction to the medicine;
- difficulty breathing with wheezing or a rash that gets worse - you may be having an allergic reaction to the medicine;
- cough, serious breathing difficulties - if you are an adult and have invasive aspergillosis you may be experiencing a serious respiratory problem that could result in respiratory failure.
- rash, skin peeling, mucous membrane sores, hives, large areas of peeling skin.

As with any prescription medicine, some side effects may be serious. Ask your doctor for more information.

Other side effects in adults include:

Common (may affect up to 1 in 10 people):
- decreased haemoglobin (decreased oxygen carrying substance in the blood), decreased white blood cells;
- decreased blood albumin (a type of protein) in your blood, decreased potassium or low potassium levels in the blood;
- headache;
- inflammation of the vein;
- shortness of breath;
- diarrhoea, nausea or vomiting;
- changes in some laboratory blood tests (including increased values of some liver tests);
- itching, rash, skin redness or sweating more than usual;
- joint pain;

- chills, fever;
- itching at the injection site.

Uncommon (may affect up to 1 in 100 people):
- changes in some laboratory blood tests (including disease of blood clotting, platelets, red blood cells and white blood cells);
- loss of appetite, increase in amount of body fluid, imbalance of salt in the body, high sugar level in the blood, low calcium level in the blood, increase calcium level in the blood, low magnesium level in the blood, increase in acid level in the blood;
- disorientation, feeling nervous, being unable to sleep;
- feeling dizzy, decreased feeling or sensitivity (especially in the skin), shaking, feeling sleepy, change in the way things taste, tingling or numbness;
- blurred vision, increase in tears, swollen eyelid, yellowing of the whites of the eyes;
- sensation of fast or irregular heart beats, rapid heart beat, irregular heart beat, abnormal heart rhythm, heart failure;
- flushing, hot flush, high blood pressure, low blood pressure, redness along a vein which is extremely tender when touched;
- tightening of the bands of muscle around the airways resulting in wheezing or coughing, fast breathing rate, shortness of breath that wakes you up, shortage of oxygen in the blood, abnormal breath sounds, crackling sounds in the lungs, wheezing, nasal congestion, cough, throat pain;
- belly pain, upper belly pain, bloating, constipation, difficulty swallowing, dry mouth, indigestion, passing gas, stomach discomfort, swelling due to build-up of fluid around the belly;
- decreased flow of bile, enlarged liver, yellowing of the skin and/or whites of the eyes, liver injury caused by a drug or chemical, liver disorder;
- abnormal skin tissue, generalised itching, hives, rash of varying appearance, abnormal skin, red often itchy spots on your arms and legs and sometimes on the face and the rest of the body;
- back pain, pain in an arm or leg, bone pain, muscle pain, muscle weakness;
- loss of kidney function, sudden loss of kidney function;
- catheter site pain, injection site complaints (redness, hard lump, pain, swelling, irritation, rash, hives, leaking of fluid from the catheter into the tissue), inflammation of vein at injection site;
- increased blood pressure and alterations in some laboratory blood tests (including kidney electrolyte and clotting tests), increased levels of the medicines you are taking that weaken the immune system;
- chest discomfort, chest pain, feeling of body temperature change, generally feeling unwell, general pain, swelling of the face, swelling of the ankles, hands or feet, swelling, tenderness, feeling tired.

Side effects in children and adolescents

Very common (may affect more than 1 in 10 people):
- fever.

Common (may affect up to 1 in 10 people):
- headache;
- fast heart beat;
- flushing, low blood pressure;
- changes in some laboratory blood tests (increased values of some liver tests);
- itching, rash;
- catheter site pain;
- chills;
- changes in some laboratory blood tests.

Reporting of side effects

If you get any side effects, talk to your doctor, pharmacist or nurse. This includes any possible side effects not listed in this leaflet. You can also report side effects directly via the Yellow Card Scheme at: www.mhra.gov.uk/yellowcard. By reporting side effects you can help provide more information on the safety of this medicine.

5. How to store Caspofungin

Keep this medicine out of the sight and reach of children.

Do not use this medicine after the expiry date which is stated on the carton and the vial after EXP. The expiry date refers to the last day of that month.

Unopened vials: Store in a refrigerator at 2°C to 8°C.

Chemical and physical in-use stability has been demonstrated for up to 24 hours at 25 °C or less and at 5 ± 3 °C when reconstituted with water for injection. From a microbiological point of view, unless the method of opening/reconstitution/dilution precludes the risk of microbiological contamination, the product should be used immediately.
This is because it does not contain any ingredients to stop the growth of bacteria. If not used immediately, in-use storage times and conditions prior to use are the responsibility of the user.

Chemical and physical in-use stability of the diluted patient infusion solution has been demonstrated for 48 hours at 2 to 8°C and at room temperature (25 °C), when diluted with sodium chloride solution 9 mg/ml (0.9 %), 4.5 mg/ml (0.45 %), or 2.25 mg/ml (0.225 %) for infusion, or lactated Ringer's solution.
From a microbiological point of view, the product should be used immediately. If not used immediately, in use storage times and conditions prior to use are the responsibility of the user and would normally not be longer than 24 hours at 2 to 8°C, unless reconstitution and dilution have taken place in controlled validated aseptic conditions.

Only a trained healthcare professional who has read the complete directions should prepare the medicine (please see below "Instructions of how to reconstitute and dilute Caspofungin").

Do not throw away any medicines via wastewater or household waste. Ask your pharmacist how to throw away medicines you no longer use. These measures will help protect the environment.

6. Contents of the pack and other information

What Caspofungin contains
- The active substance is caspofungin.
  Each 50 mg vial contains 50 mg caspofungin (as acetate).
  Each 70 mg vial contains 70 mg caspofungin (as acetate).
  After reconstitution in 10.5 ml of water for injection, 1 ml of the concentrate contains 5.2 mg or 7.2 mg caspofungin.
- The other ingredients are sucrose, mannitol, glacial acetic acid and sodium hydroxide.

What Caspofungin looks like and contents of the pack
Caspofungin is a sterile, white to off-white lyophilised powder.
Each pack contains one vial (10 ml) of powder.

Marketing Authorisation Holder and Manufacturer

Marketing Authorisation Holder
Sun Pharmaceutical Industries Europe B.V.
Polarisavenue 87
2132 JH Hoofddorp
The Netherlands

Manufacturer

Pharmathen S.A.
Dervenakion str., Pallini, Attiki
153 51, Greece

ELPEN PHARMACEUTICAL CO., INC
Marathonos Ave. 95,
Pikermi Attiki
19009 Greece

Pharmadox Healthcare Ltd
KW20A Kordin Industrial Park, Paola
PLA 3000, Malta

For any information about this medicinal product, please contact the local representative of the Marketing Authorisation Holder.

This medicinal product is authorised in the Member States of the EEA under the following names:

Denmark	Caspofungin SUN 50 mg pulver til koncentrat til infusionsvæske, opløsning Caspofungin SUN 70 mg pulver til koncentrat til infusionsvæske, opløsning
Spain	Caspofungin SUN 50 mg polvo para concentrada para solucio para perfusion EFG Caspofungin SUN 70 mg polvo para concentrada para solucio para perfusion EFG
France	Caspofungine SUN 50 mg, poudre pour solution à diluer pour perfusion Caspofungine SUN 70 mg, poudre pour solution à diluer pour perfusion
Italy	Caspofungin SUN
Germany	Caspofungin SUN 50 mg Pulver für ein Konzentrat zur Herstellung einer Infusionslösung Caspofungin SUN 70 mg Pulver für ein Konzentrat zur Herstellung einer Infusionslösung
United Kingdom	Caspofungin 50 mg powder for concentrate for solution for infusion Caspofungin 70 mg powder for concentrate for solution for infusion
Romania	Caspofungina Terapia 50mg pulbere pentru concentrat pentru soluţie perfuzabilă Caspofungina Terapia 70mg pulbere pentru concentrat pentru soluţie perfuzabilă

This leaflet was last revised in September 2022.

The following information is intended for medical or healthcare professionals only:
Instructions of how to reconstitute and dilute Caspofungin

Reconstitution of Caspofungin
DO NOT USE ANY DILUENTS CONTAINING GLUCOSE as Caspofungin is not stable in diluents containing glucose. DO NOT MIX OR CO-INFUSE CASPOFUNGIN WITH ANY OTHER MEDICINES, as there are no data available on the compatibility of Caspofungin with other intravenous substances, additives, or medicinal products. Visually inspect the infusion solution for particulate matter or discolouration.

Caspofungin 50 mg powder for concentrate for solution for infusion

INSTRUCTIONS FOR USE IN ADULT PATIENTS

Step 1 Reconstitution of conventional vials
To reconstitute the powder bring the vial to room temperature and aseptically add 10.5 ml of water for injection. The concentrations of the reconstituted vials will be 5.2 mg/ml.

The white to off-white compact lyophilised powder will dissolve completely. Mix gently until a clear solution is obtained. Reconstituted solutions should be visually inspected for particulate matter or discolouration. This reconstituted solution may be stored for up to 24 hours at 25 °C or less or at 5 ± 3 °C.

Step 2 Addition of reconstituted Caspofungin to patient infusion solution
Diluents for the final solution for infusion are: sodium chloride solution for injection, or lactated Ringer's solution. The solution for infusion is prepared by aseptically adding the appropriate amount of reconstituted concentrate (as shown in the table below) to a 250 ml infusion bag or bottle. Reduced volume infusions in 100 ml may be used, when medically necessary, for 50 mg or 35 mg daily doses. Do not use if the solution is cloudy or has precipitated.

PREPARATION OF THE SOLUTION FOR INFUSION IN ADULTS

DOSE*	**Volume of reconstituted Caspofungin for transfer to intravenous bag or bottle**	**Standard preparation** (reconstituted Caspofungin added to 250 ml) final concentration	**Reduced volume infusion** (reconstituted Caspofungin added to 100 ml) final concentration
50 mg	10 ml	0.20 mg/ml	-
50 mg at reduced volume	10 ml	-	0.47 mg/ml
35 mg for moderate hepatic impairment (from one 50 mg vial)	7 ml	0.14 mg/ml	-
35 mg for moderate hepatic impairment (from one 50 mg vial) at reduced volume	7 ml	-	0.34 mg/ml

* 10.5 ml should be used for reconstitution of all vials

INSTRUCTIONS FOR USE IN PAEDIATRIC PATIENTS

Calculation of Body Surface Area (BSA) for paediatric dosing

Before preparation of infusion, calculate the body surface area (BSA) of the patient using the following formula: (Mosteller[1] Formula)

$$BSA\ (m^2) = \sqrt{\frac{Height\ (cm)\ X\ Weight\ (kg)}{3600}}$$

Preparation of the 70 mg/m^2 infusion for paediatric patients >3 months of age (using a 50-mg vial)

1. Determine the actual loading dose to be used in the paediatric patient by using the patient's BSA (as calculated above) and the following equation:
   BSA (m^2) X 70 mg/m^2 = Loading Dose
   The maximum loading dose on Day 1 should not exceed 70 mg regardless of the patient's calculated dose.
2. Equilibrate the refrigerated vial of Caspofungin to room temperature.
3. Aseptically add 10.5 ml of water for injection [a] This reconstituted solution may be stored for up to 24 hours at 25 °C or less or at 5 ± 3 °C[b]. This will give a final caspofungin concentration in the vial of 5.2 mg/ml.
4. Remove the volume of medicinal product equal to the calculated loading dose (Step 1) from the vial. Aseptically transfer this volume (ml)[c] of reconstituted Caspofungin to an IV bag (or bottle) containing 250 ml of 0.9 %, 0.45 %, or 0.225 % Sodium Chloride Injection, or Lactated Ringers Injection. Alternatively, the volume (ml)[c] of reconstituted Caspofungin can be added to a reduced volume of 0.9 %, 0.45 %, or 0.225 % Sodium Chloride Injection or Lactated Ringers Injection, not to exceed a final concentration of 0.5 mg/ml. This infusion solution must be used within 48 hours if stored refrigerated at 2 to 8°C or at room temperature (25°C).

Preparation of the 50 mg/m^2 infusion for paediatric patients >3 months of age (using a 50-mg vial)

1. Determine the actual daily maintenance dose to be used in the paediatric patient by using the patient's BSA (as calculated above) and the following equation:
   BSA (m^2) X 50 mg/m^2 = Daily Maintenance Dose
   The daily maintenance dose should not exceed 70 mg regardless of the patient's calculated dose.
2. Equilibrate the refrigerated vial of Caspofungin to room temperature.
3. Aseptically add 10.5 ml of water for injection[a]. This reconstituted solution may be stored for up to 24 hours at 25 °C or less or at 5 ± 3 °C[b]. This will give a final caspofungin concentration in the vial of 5.2 mg/ml.
4. Remove the volume of medicinal product equal to the calculated daily maintenance dose (Step 1) from the vial. Aseptically transfer this volume (ml)[c] of reconstituted Caspofungin to an IV bag (or bottle) containing 250 ml of 0.9 %, 0.45 %, or 0.225 % Sodium Chloride Injection, or Lactated Ringers Injection. Alternatively, the volume (ml)[c] of reconstituted Caspofungin can be added to a reduced volume of 0.9 %, 0.45 %, or 0.225 % Sodium Chloride Injection or Lactated Ringers Injection, not to exceed a final concentration of 0.5 mg/ml. This infusion solution must be used within 48 hours if stored refrigerated at 2 to 8°C or at room temperature (25°C).

Preparation notes:

a The white to off-white cake will dissolve completely. Mix gently until a clear solution is obtained.
b Visually inspect the reconstituted solution for particulate matter or discolouration during reconstitution and prior to infusion. Do not use if the solution is cloudy or has precipitated.
c Caspofungin is formulated to provide the full labeled vial dose (50 mg) when 10 ml is withdrawn from the vial.

Caspofungin 70 mg powder for concentrate for solution for infusion

[1] Mosteller RD: Simplified Calculation of Body Surface Area. *N Engl J Med* 1987 Oct 22;317(17): 1098 (letter)

INSTRUCTIONS FOR USE IN ADULT PATIENTS

Step 1 Reconstitution of conventional vials
To reconstitute the powder bring the vial to room temperature and aseptically add 10.5 ml of water for injection. The concentrations of the reconstituted vials will be 7.2 mg/ml.

The white to off-white compact lyophilised powder will dissolve completely. Mix gently until a clear solution is obtained. Reconstituted solutions should be visually inspected for particulate matter or discolouration. This reconstituted solution may be stored for up to 24 hours at 25 °C or less or at 5 ± 3 °C.

Step 2 Addition of reconstituted Caspofungin to patient infusion solution
Diluents for the final solution for infusion are: sodium chloride solution for injection, or lactated Ringer's solution. The solution for infusion is prepared by aseptically adding the appropriate amount of reconstituted concentrate (as shown in the table below) to a 250 ml infusion bag or bottle. Reduced volume infusions in 100 ml may be used, when medically necessary, for 50 mg or 35 mg daily doses. Do not use if the solution is cloudy or has precipitated.

PREPARATION OF THE SOLUTION FOR INFUSION IN ADULTS

DOSE*	**Volume of reconstituted Caspofungin for transfer to intravenous bag or bottle**	**Standard preparation** (reconstituted Caspofungin added to 250 ml) final concentration	**Reduced volume infusion** (reconstituted Caspofungin added to 100 ml) final concentration
70 mg	10 ml	0.28 mg/ml	Not Recommended
70 mg (from two 50 mg vials)**	14 ml	0.28 mg/ml	Not Recommended
35 mg for moderate hepatic impairment (from one 70 mg vial)	5 ml	0.14 mg/ml	0.34 mg/ml

***** 10.5 ml should be used for reconstitution of all vials.
****** If 70 mg vial is not available, the 70 mg dose can be prepared from two 50 mg vials.

INSTRUCTIONS FOR USE IN PAEDIATRIC PATIENTS

Calculation of Body Surface Area (BSA) for paediatric dosing
Before preparation of infusion, calculate the body surface area (BSA) of the patient using the following formula: (Mosteller[2] Formula)

$$BSA\ (m^2) = \sqrt{\frac{Height\ (cm)\ X\ Weight\ (kg)}{3600}}$$

Preparation of the 70 mg/m^2 infusion for paediatric patients >3 months of age (using a 70-mg vial)

1. Determine the actual loading dose to be used in the paediatric patient by using the patient's BSA (as calculated above) and the following equation:
   BSA (m^2) X 70 mg/m^2 = Loading Dose

[2] Mosteller RD: Simplified Calculation of Body Surface Area. *N Engl J Med* 1987 Oct 22;317(17): 1098 (letter)

The maximum loading dose on Day 1 should not exceed 70 mg regardless of the patient's calculated dose.

2. Equilibrate the refrigerated vial of Caspofungin to room temperature.
3. Aseptically add 10.5 ml of water for injection.[a] This reconstituted solution may be stored for up to 24 hours at 25 °C or less or at 5 ± 3 °C.[b] This will give a final caspofungin concentration in the vial of 7.2 mg/ml.
4. Remove the volume of medicinal product equal to the calculated loading dose (Step 1) from the vial. Aseptically transfer this volume (ml)[c] of reconstituted Caspofungin to an IV bag (or bottle) containing 250 ml of 0.9 %, 0.45 %, or 0.225 % Sodium Chloride Injection, or Lactated Ringers Injection. Alternatively, the volume (ml)[c] of reconstituted Caspofungin can be added to a reduced volume of 0.9 %, 0.45 %, or 0.225 % Sodium Chloride Injection or Lactated Ringers Injection, not to exceed a final concentration of 0.5 mg/ml. This infusion solution must be used within 48 hours if stored refrigerated at 2 to 8°C or at room temperature (25°C).

Preparation of the 50 mg/m^2 infusion for paediatric patients >3 months of age (using a 70-mg vial)

1. Determine the actual daily maintenance dose to be used in the paediatric patient by using the patient's BSA (as calculated above) and the following equation:
   BSA (m^2) X 50 mg/m^2 = Daily Maintenance Dose
   The daily maintenance dose should not exceed 70 mg regardless of the patient's calculated dose.
2. Equilibrate the refrigerated vial of Caspofungin to room temperature.
3. Aseptically add 10.5 ml of water for injection.[a] This reconstituted solution may be stored for up to 24 hours at 25 °C or less or at 5 ± 3 °C.[b] This will give a final caspofungin concentration in the vial of 7.2 mg/ml.
4. Remove the volume of medicinal product equal to the calculated daily maintenance dose (Step 1) from the vial. Aseptically transfer this volume (ml)[c] of reconstituted Caspofungin to an IV bag (or bottle) containing 250 ml of 0.9 %, 0.45 %, or 0.225 % Sodium Chloride Injection, or Lactated Ringers Injection. Alternatively, the volume (ml)[c] of reconstituted Caspofungin can be added to a reduced volume of 0.9 %, 0.45 %, or 0.225 % Sodium Chloride Injection or Lactated Ringers Injection, not to exceed a final concentration of 0.5 mg/ml. This infusion solution must be used within 48 hours if stored refrigerated at 2 to 8°C or at room temperature (25°C).

Preparation notes:

a The white to off-white cake will dissolve completely. Mix gently until a clear solution is obtained.
b Visually inspect the reconstituted solution for particulate matter or discolouration during reconstitution and prior to infusion. Do not use if the solution is cloudy or has precipitated.
c Caspofungin is formulated to provide the full labeled vial dose (70 mg) when 10 ml is withdrawn from the vial.