

Piperin 2 g / 0.25 g Powder for solution for infusion
Piperin 4 g / 0.5 g Powder for solution for infusion

piperacillin/ tazobactam

Read all of this leaflet carefully before you start using 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, pharmacist or nurse.
- If you get any side effects, talk to your doctor, pharmacist or nurse. This includes any possible side effects not listed in this leaflet. See section 4.

- What is in this leaflet**
1. What Piperin is and what it is used for
 2. What you need to know before you use Piperin
 3. How to use Piperin
 4. Possible side effects
 5. How to store Piperin
 6. Contents of the pack and other information



1 What Piperin is and what it is used for

Piperacillin belongs to the group of medicines known as “broad-spectrum penicillin antibiotics”. It can kill many kinds of bacteria. Tazobactam can prevent some resistant bacteria from surviving the effects of piperacillin. This means that when piperacillin and tazobactam are given together, more types of bacteria are killed.

Piperin is used in adults and adolescents to treat bacterial infections, such as those affecting the lower respiratory tract (lungs), urinary tract (kidneys and bladder), abdomen, skin or blood. Piperin may be used to treat bacterial infections in patients with low white blood cell counts (reduced resistance to infections).

Piperin is used in children aged 2-12 years to treat infections of the abdomen such as appendicitis, peritonitis (infection of the fluid and lining of the abdominal organs), and gallbladder (biliary) infections. Piperin may be used to treat bacterial infections in patients with low white blood cell counts (reduced resistance to infections).

In certain serious infections, your doctor may consider using Piperin in combination with other antibiotics.

2 What you need to know before you use Piperin

- Do not use Piperin**
- if you are allergic to piperacillin or tazobactam or any of the other ingredients of this medicine (listed in section 6).
 - if you are allergic to antibiotics known as penicillins, cephalosporins or other beta-lactamase inhibitors, as you may be allergic to Piperin.

- Warnings and precautions**
- Talk to your doctor, pharmacist or nurse before using Piperin
- if you have allergies. If you have several allergies, make sure you tell your doctor or other healthcare professional before receiving this product.
 - if you are suffering from diarrhoea before, or if you develop diarrhoea during or after your treatment. In this case, make sure you tell your doctor or other healthcare professional immediately. Do not take any medicine for the diarrhoea without first checking with your doctor.
 - if you have low levels of potassium in your blood. Your doctor may want to check your kidneys before you take this medicine and may perform regular blood tests during treatment.
 - if you have kidney or liver problems, or are receiving haemodialysis. Your doctor may want to check your kidneys before you take this medicine, and may perform regular blood tests during treatment.
 - if you are taking certain medicines (called anticoagulants) to avoid an excess of blood clotting (see also “Other medicines and Piperin” in this leaflet) or any unexpected bleeding occurs during the treatment. In this case, you should inform your doctor or other healthcare professional immediately.
 - if you develop convulsions during the treatment. In this case, you should inform your doctor or other healthcare professional.
 - if you think you developed a new or worsening infection. In this case, you should inform your doctor or other healthcare professional.

Children below 2 years
Piperacillin / tazobactam is not recommended for use in children below the age of 2 years due to insufficient data on safety and effectiveness.

Other medicines and Piperin
Tell your doctor or other healthcare professional if you are taking, have recently taken or might take any other medicines, including medicines obtained without a prescription. Some medicines may interact with piperacillin and tazobactam. These include:

- medicine for gout (probenecid). This can increase the time it takes for piperacillin and tazobactam to leave your body.
- medicines to thin your blood or to treat blood clots (e.g. heparin, warfarin or aspirin).
- medicines used to relax your muscles during surgery. Tell your doctor if you are going to have a general anaesthetic.
- methotrexate (medicine used to treat cancer, arthritis or psoriasis). Piperacillin and tazobactam can increase the time it takes for methotrexate to leave your body.
- medicines that reduce the level of potassium in your blood (e.g. tablets enhancing urination or some medicines for cancer).
- medicines containing the other antibiotics tobramycin, gentamycin, or vancomycin. Tell your doctor if you have kidney problems.

Effect on laboratory tests
Tell the doctor or laboratory staff that you are taking Piperin if you have to provide a blood or urine sample.

Pregnancy and breast-feeding
If you are pregnant or breast-feeding, think you may be pregnant or are planning to have a baby, ask your doctor or other healthcare professional for advice before receiving this medicine.
Your doctor will decide if Piperin is right for you.

Piperacillin and tazobactam can pass to a baby in the womb or through breast milk. If you are breast-feeding, your doctor will decide if Piperin is right for you.

Driving and using machines
The use of Piperin is not expected to affect the ability to drive or use machines.

Piperin 2 g / 0.25 g Powder for solution for infusion contains 109 mg of sodium (main component of cooking/table salt) in each dosage unit. This is equivalent to 6% of the recommended maximum daily dietary intake of sodium for an adult.

Piperin 4 g / 0.5 g Powder for solution for infusion contains 217 mg of sodium (main component of cooking/table salt) in each dosage unit. This is equivalent to 11% of the recommended maximum daily dietary intake of sodium for an adult.
This should be taken into consideration if you are on a controlled sodium diet.

3 How to use Piperin

Your doctor or other healthcare professional will give you this medicine through an infusion (a drip for 30 minutes) into one of your veins.

Dosage
The dose of medicine given to you depends on what you are being treated for, your age, and whether or not you have kidney problems.

Adults and adolescents above 12 years of age
The usual dose is 4 g / 0.5 g of piperacillin / tazobactam given every 6-8 hours, which is given into one of your veins (directly into the blood stream).

Children aged 2 to 12 years
The usual dose for children with abdominal infections is 100 mg / 12.5 mg / kg of body weight of piperacillin / tazobactam given every 8 hours into one of your veins (directly into the blood stream). The usual dose for children with low white blood cell counts is 80 mg / 10 mg / kg of body weight of piperacillin / tazobactam given every 6 hours into one of your veins (directly into the blood stream).

Your doctor will calculate the dose depending on your child’s weight but each individual dose will not exceed 4 g / 0.5 g of Piperin.

You will be given Piperin until the sign of infection has gone completely (5 to 14 days).

Patients with kidney problems
Your doctor may need to reduce the dose of Piperin or how often you are given it. Your doctor may also want to test your blood to make sure that your treatment is at the right dose, especially if you have to take this medicine for a long time.

If you receive more Piperin than you should
As you will receive Piperin from a doctor or other healthcare professional, you are unlikely to be given the wrong dose. However, if you experience side effects, such as convulsions, or think you have been given too much, tell your doctor immediately.

If you miss a dose of Piperin
If you think you have not been given a dose of Piperin, tell your doctor or other healthcare professional immediately.

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

4 Possible side effects

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

See a doctor immediately if you experience any of these potentially serious side effects of Piperin:

- The serious side effects (with frequency in brackets) of Piperin are:**
- serious skin rashes [Stevens-Johnson syndrome, dermatitis bullous (Not known), dermatitis exfoliative (Not known) toxic epidermal necrolysis (Rare)] appearing initially as reddish target-like spots or circular patches often with central blisters on the trunk. Additional signs include ulcers in the mouth, throat, nose, extremities, genitals and conjunctivitis (red and swollen eyes).
The rash may progress to widespread blistering or peeling of the skin and potentially may be life threatening.
 - severe potentially fatal allergic condition (drug reaction with eosinophilia and systemic symptoms) that can involve the skin and most importantly other organs under the skin such as the kidney and the liver (Not known)
 - a skin condition (acute generalised exanthematous pustulosis) accompanied by fever, which consists of numerous tiny fluid filled blisters contained within large areas of swollen and reddened skin (Not known)
 - swelling of the face, lips, tongue or other parts of the body (Not known)
 - shortness of breath, wheezing or trouble breathing (Not known)
 - severe rash or hives (Uncommon), itching or rash on the skin (Common)
 - yellowing of the eyes or skin (Not known)
 - damage to blood cells [the signs include: being breathless when you do not expect it, red or brown urine (Not known), nosebleeds (Rare) and small spot bruising (Not known)], severe decrease in white blood cells (Rare)
 - severe or persistent diarrhoea accompanied by a fever or weakness (Rare).

Very common side effects (may affect more than 1 in 10 people):
– diarrhoea.

Common side effects (may affect up to 1 in 10 people):

- yeast infection
- decrease in platelets and decrease of red blood cells or blood pigment / haemoglobin, abnormal lab test (positive direct Coombs), prolonged blood clotting time (activated partial thromboplastin time prolonged)
- decrease in blood protein
- headache, sleeplessness
- abdominal pain, vomiting, nausea, constipation, upset stomach
- increase in blood liver enzymes
- abnormal kidney blood tests
- fever, injection site reaction

Uncommon side effects (may affect up to 1 in 100 people):

- decrease in white blood cells (leukopenia), prolonged blood clotting time (prothrombin time prolonged)
- decreased blood potassium, decreased blood sugar
- low blood pressure, inflammation of the veins (felt as tenderness or redness in the affected area) reddening of skin
- increase of a blood pigment breakdown product (bilirubin)
- skin reactions with redness, formation of skin lesions, nettle rash
- joint and muscle pain
- chills.

Rare side effects (may affect up to 1 in 1,000 people):

- inflammation of the mucous lining of the mouth.

Not known side effects (cannot be estimated from the available data):

- severe decrease of red blood cells, white blood cells and platelets (pancytopenia), decrease in white blood cells (neutropenia), decrease of red blood cells due to premature breakdown or degradation, bleeding time prolonged, increase of platelets, increase of a specific type of white blood cells (eosinophilia)
- allergic reaction and severe allergic reaction
- inflammation of the liver
- poor kidney functions and kidney problems
- a form of lung disease where eosinophils (a form of white blood cell) appear in the lung in increased numbers.

Piperacillin therapy has been associated with an increased incidence of fever and rash in cystic fibrosis patients.

Reporting of side effects

If you get any side effects, talk to your doctor or pharmacist or nurse. This includes any possible side effects not listed in this leaflet. You can also report side effects directly via HPRA Pharmacovigilance, Earlsfort Terrace, IRL - Dublin 2; Tel: +353 1 6764971; Fax: +353 1 6762517. Website: www.hpra.ie; E-mail: medsafety@hpra.ie. By reporting side effects you can help provide more information on the safety of this medicine.

5 How to store Piperin

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 label after EXP. The expiry date refers to the last day of that month.

Unopened vials/bottles:
This medicinal product does not require any special storage conditions.

For storage conditions of the reconstituted and diluted medicinal product, see at the end of the package leaflet ‘The following information is intended for medical or healthcare professionals only’.

For single use only. Discard any unused solution.

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 Piperin contains

- The active substances are piperacillin and tazobactam.
Each vial contains 2 g piperacillin (as piperacillin sodium) and 0.25 g tazobactam (as tazobactam sodium).
Each vial or bottle contains 4 g piperacillin (as piperacillin sodium) and 0.5 g tazobactam (as tazobactam sodium).
- Other ingredients:
The medicinal product contains no other ingredients than the active substances.

What Piperin looks like and contents of the pack

Piperin 2 g / 0.25 g is a white to off-white powder for solution for infusion packaged in glass vials. The vials are packed in carton boxes.
Pack sizes of 1, 5, 10, 12 and 50 vials.

Piperin 4 g / 0.5 g is a white to off-white powder for solution for infusion packaged in glass vials or bottles. The vials or bottles are packed in carton boxes.

Pack sizes of 1, 5, 10, 12 and 50 vials/bottles.

Not all pack sizes may be marketed.

Marketing Authorisation Holder and Manufacturer
Marketing Authorisation Holder
Rowex Ltd., Bantry, Co. Cork, Ireland.

Manufacturer
Sandoz GmbH., Biochemiestrasse 10, 6250 Kundl, Austria.

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

Belgium:	Piperaz 2 g/ 0,25 g, poeder voor oplossing voor injectie/infusie
Czech Republic:	TAZOPET 2 g/ 250 mg
Denmark:	Piperacillin/Tazobactam Sandoz
Finland:	Piperacillin/Tazobactam Sandoz
France:	PIPERACILLINE/TAZOBACTAM SANDOZ 2 g/250 mg, POUDRE POUR SOLUTION POUR PERFUSION
Germany:	PiperacillinTazo-Sandoz 2 g/0,25 g Pulver zur Herstellung einer Injektionslösung/ Infusionslösung
Hungary:	Piperacillin/Tazobactam Sandoz 2,25 g por injekcióhoz
Ireland:	Piperin 2 g/0.25 g Powder for Solution for Infusion
Italy:	PIPERACILLINA E TAZOBACTAM SANDOZ 2g + 0.25 g polvere per soluzione iniettabile o per infusione

The Netherlands:	Piperacilline/Tazobactam Sandoz 2 g/250 mg, poeder voor oplossing voor injectie/infusie 2000/250 mg
Norway:	Piperacillin/Tazobactam Sandoz
Poland:	Piperacillin/Tazobactam SANDOZ 2g/0,25 g
Portugal:	PIPERACILINA + TAZOBACTAM Sandoz
Slovak Republic:	Piperacilin comp. Sandoz 2g/0,25g prášok na jekčný/infúzny roztok
Spain:	Piperacilina/Tazobactam Sandoz 2/0.25 g polvo para solución inyectable/para perfusión EFG
Sweden:	Piperacillin/Tazobactam Sandoz
United Kingdom:	Piperacilline/Tazobactum 2.25g Powder for Solution for Injection or Infusion

Austria:	Piperacillin/Tazobactam Sandoz 4,0 g /0,5 g - Pulver zur Herstellung einer Injektions-und Infusionslösung
Belgium:	Piperaz 4 g/0,5 g, poeder voor oplossing voor injectie/infusie
Czech Republic:	TAZOPET 4 g/ 500 mg
Denmark:	Piperacillin/Tazobactam Sandoz
Estonia:	Piperacillin/Tazobactam Sandoz 4000/500mg
Finland:	Piperacillin/Tazobactam Sandoz
France:	PIPERACILLINE/TAZOBACTAM SANDOZ 2 g/250 mg, POUDRE POUR SOLUTION POUR PERFUSION
Germany:	PiperacillinTazo-Sandoz 4 g/0,5 g Pulver zur Herstellung einer Injektionslösung/Infusionslösung
Hungary:	Piperacillin/Tazobactam Sandoz 4,5 g por injekcióhoz
Ireland:	Piperin 4 g/0.5 g Powder for Solution for Infusion
Italy:	PIPERACILLINA E TAZOBACTAM SANDOZ 4g + 0.5 g polvere per soluzione iniettabile o per infusione
Latvia:	Piperacillin/Tazobactam Sandoz 4000/500mg pulveris injekciju un infūziju šķīduma pagatavošanai
Lithuania:	Piperacillin/Tazobactam Sandoz 4000/500 mg milteliai injekciniam arba infuziniam tirpalui
The Netherlands:	Piperacilline/Tazobactam Sandoz 4 g/500 mg, poeder voor oplossing voor injectie/infusie 4000/500 mg
Norway:	Piperacillin/Tazobactam Sandoz
Poland:	Piperacillin/Tazobactam SANDOZ 4g/0,5 g
Portugal:	PIPERACILINA + TAZOBACTAM Sandoz
Slovak Republic:	Piperacilin comp. Sandoz 4g/0,5g prášok na injekčný/infúzny roztok
Spain:	Piperacilina/Tazobactam Sandoz 4/0.5 g polvo para solución inyectable/para perfusión EFG
Sweden:	Piperacillin/Tazobactam Sandoz
United Kingdom:	Piperacilline/Tazobactum 4.5g Powder for Solution for Injection or Infusion

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The following information is intended for medical or healthcare professionals only:

After reconstitution (and dilution):

Chemical and physical in-use stability has been demonstrated for 24 hours at 20-25°C and for 48 hours at 2-8°C.

From a microbiological point of view, once opened, 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 2-8°C, unless reconstitution/dilution has taken place in controlled and validated aseptic conditions.

Instructions for use

Piperin will be given by intravenous infusion (a drip for 30 minutes).

Intravenous use

Reconstitute each vial/bottle with the volume of solvent shown in the table below, using one of the compatible solvents for reconstitution. Swirl until dissolved. When swirled constantly, reconstitution generally occurs within 3 minutes (for details on handling, please see below).

Content of vial/bottle	Volume of solvent* to be added to vial/bottle
2 g/0.25 g (2 g piperacillin and 0.25 g tazobactam)	10 ml
4 g/0.5 g (4 g piperacillin and 0.5 g tazobactam)	20 ml

* Compatible solvents for reconstitution:

- water for injection;
- sodium chloride 9 mg/ml (0.9%) solution in water for injection;
- glucose 50 mg/ml (5%) solution in water for injection;
- glucose 50 mg/ml (5%) solution in sodium chloride 9 mg/ml (0.9%) solution.

The reconstituted solutions should be withdrawn from the vial by syringe. When reconstituted as directed, the vial contents withdrawn by syringe will provide the labelled amount of piperacillin and tazobactam.

The reconstituted solutions may be further diluted to the desired volume (e.g. 50 ml to 150 ml) with one of the following compatible solvents:

- sodium chloride 9 mg/ml (0.9%) solution in water for injection;
- glucose 50 mg/ml (5%) solution in water for injection;
- dextran (grade 40) 60 mg/ml (6%) solution in sodium chloride 9 mg/ml (0.9%) solution.

Incompatibilities

This product must not be mixed or co-administrated with any aminoglycoside. The mixing of beta-lactam antibiotics with an aminoglycoside *in vitro* can result in substantial inactivation of the aminoglycoside.

Piperacillin / tazobactam should not be mixed with other substances in a syringe or infusion bottle since compatibility has not been established.

Piperacillin / tazobactam should be administered through an infusion set separately from any other medicines unless compatibility is proven.

Due to chemical instability, piperacillin / tazobactam should not be used with solutions containing only sodium bicarbonate.

Lactated Ringer’s (Hartmann’s) solution is not compatible with piperacillin / tazobactam.

Piperacillin / tazobactam should not be added to blood products or albumin hydrolysates.

Artwork Checklist	Job Description Piperin 2G/0.25g & 4g PIL (08-18) Art 6.1 (3)	Version Number 02	Size 280 x 330 mm	Inks									ACCF 21143
				Colour	Black								
	Market IM	Proof Date 22/08/2018	Cutter Ref. N/A	Prints On		Front	✓						
				Back	✓								