SUMMARY OF PRODUCT CHARACTERISTICS

1 NAME OF THE MEDICINAL PRODUCT

Cefalexin 500 mg Capsules

2 QUALITATIVE AND QUANTITATIVE COMPOSITION

Each hard gelatin capsule contains Cefalexin (Monohydrate) equivalent to 500 mg of Cefalexin.

Excipient with known effect: Lactose anhydrous 40.13 mg /Capsule

For a full list of excipients, see section 6.1

3 PHARMACEUTICAL FORM

Capsule Hard.

White to off white powder filled in light green cap and light green body of size ‘0’ hard gelatin capsule printed “CEP” on cap and “500” on body with black ink.

4 CLINICAL PARTICULARS

4.1 Therapeutic indications

Cefalexin is a semisynthetic cephalosporin antibiotic for oral administration.
Cefalexin is indicated in the treatment of the following infections due to susceptible micro-organisms.
Respiratory tract infections.
Otitis media.
Skin and soft tissue infections
Bone and joint infections.
Genito-urinary tract infections, including acute prostatitis.
Dental infections.

Consideration should be given to official guidance on the appropriate use of antibacterial agents

4.2 Posology and method of administration

Posology

Adults
The adult dosage ranges from 1-4g daily in divided doses; most infections will respond to a dosage of 500 mg every 8 hours. For skin and soft tissue infections, streptococcal pharyngitis and mild, uncomplicated urinary tract infections, the usual dosage is 250 mg every 6 hours, or 500 mg every 12 hours.

For more severe infections or those caused by less susceptible organisms, larger doses may be needed. If daily doses of cefalexin greater than 4g are required, parenteral cephalosporins, in appropriate doses, should be considered.

The elderly and patients with impaired renal function
As for adults. Reduce dosage if renal function is markedly impaired (see section 4.4).

Paediatric population
The usual recommended daily dosage for children is 25-50 mg/kg (10-20 mg/lb) in divided doses. For skin and soft tissue infections, streptococcal pharyngitis and mild, uncomplicated urinary tract infections, the total daily dose may be divided and administered every 12 hours. For most infections the following schedule is suggested:

Children under 5 years *:* 125 mg every 8 hours.
Children 5 years and over *:* 250 mg every 8 hours.

In severe infections, the dosage may be doubled. In the therapy of otitis media, clinical studies have shown that a dosage of 75 to 100 mg/kg/day in 4 divided doses is required.

In the treatment of beta-haemolytic streptococcal infections, a therapeutic dose should be administered for at least 10 days.

Method of administration

For oral use.

4.3 Contraindications

Hypersensitivity to the active substance or to any of the excipients listed in section 6.1.
Cefalexin is contraindicated in patients with known allergy to the cephalosporin group of antibiotics.

4.4 Special warnings and precautions for use

Warnings
Before instituting therapy with cefalexin, every effort should be made to determine whether the patient has had previous hypersensitivity reactions to cefalexin, cephalosporins, penicillins or other drugs. cefalexin should be given cautiously to penicillin-sensitive patients, because cross- hypersensitivity, including anaphylaxis, among beta-lactam antibiotics has been clearly documented.

If an allergic reaction to cefalexin occurs, the drug should be discontinued and the patient treated with the appropriate agents.

Pseudomembranous colitis has been reported with virtually all broad-spectrum antibiotics, including macrolides, semi-synthetic penicillins, and cephalosporins. It is important, therefore, to consider its diagnosis in patients who develop diarrhoea in

association with the use of antibiotics. Such colitis may range in severity from mild to life-threatening. Mild cases usually respond to drug discontinuance alone. In moderate to severe cases, appropriate measures should be taken.

Precautions
Reports of neurotoxicity have been identified in association with cephalosporin treatment. Symptoms may include encephalopathy, myoclonus and seizures. Elderly patients, patients with severe renal impairment or central nervous system disorders are particularly at risk. cefalexin should be administered with caution in the presence of markedly impaired renal function. Since the half-life of cefalexin in anuric patients is 2.3 to 2.8 hours (compared to 0.6-0.9 hours in normal subjects), dosage adjustments for patients with moderate or severe renal impairment are not usually required.
Clinical experience with cefalexin under such conditions is limited; therefore, careful clinical observation and laboratory studies should be made. If cefalexin associated neurotoxicity is suspected, discontinuation of cefalexin should be considered.

Broad-spectrum antibiotics should be prescribed with caution in individuals with a history of gastro-intestinal disease, particularly colitis.

Prolonged use of cefalexin may result in the overgrowth of non-susceptible organisms. If superinfection occurs during therapy, appropriate measures should be taken.

Positive direct Coombs' tests have been reported during treatment with the cephalosporin antibiotics. In haematological studies, or in transfusion cross-matching procedures when anti-globulin tests are performed on the minor side, or in Coombs' testing of newborns whose mothers have received cephalosporin antibiotics before parturition, it should be recognised that a positive Coombs' test may be due to the drug.

A false positive reaction for glucose in the urine may occur with Benedict's or Fehling's solutions, or with copper sulphate test tablets.

4.5 Interaction with other medicinal products and other forms of interaction

As with other beta-lactam drugs, renal excretion of cefalexin is inhibited by probenecid.

In a single study of 12 healthy subjects given single 500mg doses of cefalexin and metformin, plasma metformin C_{max} and AUC increased by an average of 34% and 24%, respectively, and metformin renal clearance decreased by an average of 14%. No side-effects were reported in the 12 healthy subjects in this study. No information is available about the interaction of cefalexin and metformin following multiple dose administration. The clinical significance of this study is unclear, particularly as no cases of “lactic acidosis” have been reported in association with concomitant metformin and cefalexin treatment.

Hypokalaemia has been described in patient taking cytotoxic drugs for leukaemia when they were given gentamicin and Cefalexin.

4.6 Fertility, pregnancy and lactation

Pregnancy:

Although laboratory and clinical studies have shown no evidence of teratogenicity caution should be exercised when prescribing for the pregnant patient.

Breast-feeding
The excretion of cefalexin in human milk increased up to 4 hours following a 500mg dose. The drug reached a maximum level of 4 micrograms/ml, decreased gradually and had disappeared 8 hours after administration. Caution should be exercised when cefalexin is administered to a nursing woman, since the neonate is presented with the risk of candidiasis and CNS toxicity due to immaturity of the blood-brain barrier. There is a theoretical possibility of later sensitisation.

4.7 Effects on ability to drive and use machines

Not relevant.

4.8 Undesirable effects

Gastro-intestinal:	The most frequent side-effect has been diarrhoea. It is rarely severe enough to warrant cessation of therapy. Colitis, including rare instances of pseudomembranous colitis, has been reported. Nausea and vomiting have also occurred.
Hypersensitivity:	Allergic reactions such as morbilliform eruptions, pruritus and urticaria have been observed. These reactions usually subside upon discontinuation of therapy. Serum sickness-like reactions (erythema multiforme minor, rashes or other skin manifestations accompanied by arthritis/arthralgia, with or without fever) have been reported. Lymphadenopathy and proteinuria are infrequent, there are no circulating immune complexes and no evidence of sequelae. Occasionally, solitary symptoms may occur, but do not represent a serum sickness-like reaction. Serum sickness-like reactions are apparently due to hypersensitivity and have usually occurred during or following a second (or subsequent) course of therapy with cefalexin. Such reactions have been reported more frequently in children than in adults. Signs and symptoms usually occur a few days after initiation of therapy and usually subside within a few days of cessation of therapy. Antihistamines and corticosteroids appear to enhance resolution of the syndrome. No serious sequelae have been reported. There are rare reports of erythema multiforme major (Stevens-Johnson syndrome), toxic epidermal necrolysis, and anaphylaxis. Anaphylaxis may be more common in patients with a history of penicillin allergy. Anaphylactoid events may present as solitary symptoms, including angioedema, asthenia, oedema (including face and limbs), dyspnoea, paraesthesias, syncope, or vasodilatation. Rarely, hypersensitivity symptoms may persist for several months.
Haematological:	Eosinophilia, positive Coombs' tests and, rarely, thrombocytopenia. Transient lymphocytosis, leucopenia and, rarely, haemolytic anaemia, aplastic anaemia, agranulocytosis and reversible neutropenia of possible clinical significance. See 'Interactions with other Medicaments and other forms of Interaction'.

Hepatic:	Transient hepatitis and cholestatic jaundice have been reported rarely, slight elevations in AST, ALT or alkaline phosphatase values.
Renal:	Reversible interstitial nephritis has occurred rarely, also slight elevations in blood urea or serum creatinine or abnormal urinalysis.
Central Nervous System:	Reversible hyperactivity, agitation, nervousness, insomnia, confusion, hypertonia, dizziness, hallucinations and somnolence have been reported rarely. There have been reports of neurological sequelae including tremor, myoclonia, convulsions, encephalopathy with drugs belonging to the class of cephalosporins. Most cases occurred in patients with renal impairment who received doses that exceeded the recommended dose and resolved following discontinuation of treatment.
Miscellaneous:	Genital pruritus, vaginitis and vaginal moniliasis.

Reporting of suspected adverse reactions
Reporting suspected adverse reactions after authorisation of the medicinal product is important. It allows continues monitoring of the benefit/risk balance of the medicinal product. Healthcare professionals are asked to report any suspected adverse reactions via Yellow Card Scheme, Website: www.mhra.gov.uk/yellowcard or search for MHRA Yellow Card in the Google Play or Apple App Store

4.9 Overdose

Symptoms of oral overdose may include nausea, vomiting, epigastric distress, diarrhoea, and haematuria.

In the event of severe overdosage, general supportive care is recommended, including close clinical and laboratory monitoring of haematological, renal, and hepatic functions, and coagulation status until the patient is stable. Forced diuresis, peritoneal dialysis, haemodialysis, or charcoal haemoperfusion have not been established as beneficial for an overdose of cefalexin. It would be extremely unlikely that one of these procedures would be indicated.

Unless 5 to 10 times the normal total daily dose has been ingested, gastro-intestinal decontamination should not be necessary.

There have been reports of haematuria, without impairment of renal function, in children accidentally ingesting more than 3.5g of cefalexin in a day. Treatment has been supportive (fluids) and no sequelae have been reported.

5 PHARMACOLOGICAL PROPERTIES

5.1 Pharmacodynamic properties

Pharmacotherapeutic group: Antibacterials for systemic use,

First generation cephalosporins

ATC code: J01DB01

In vitro tests demonstrate that cephalosporins are bactericidal because of their inhibition of cell-wall synthesis.
Cefalexin is active against the following organisms in vitro:
Beta-haemolytic streptococci
Staphylococci, including coagulase-positive, coagulase-negative and penicillinaseproducing
strains.
Streptococcus pneumoniae
Escherichia coli
Proteus mirabilis
Klebsiella species
Haemophilus influenzae
Branhamella catarrhalis

Most strains of enterococci (*Streptococcus faecalis*) and a few strains of *staphylococci* are resistant to cefalexin. It is not active against most strains of *Enterobacter species, Morganella morganii* and *Pr. vulgaris*. It has no activity against *Pseudomonas* or *Herellea species* or *Acinetobacter calcoaeticus*. Penicillin-resistant *Streptococcus pneumoniae* is usually cross-resistant to beta-lactam antibiotics. When tested by in-vitro methods, staphylococci exhibit cross-resistance between cefalexin and methicillin-type antibiotics.

5.2 Pharmacokinetic properties

Absorption:
Human pharmacology - cefalexin is acid stable and may be given without regard to meals.
It is rapidly absorbed after oral administration. Following doses of 250 mg, 500 mg and 1g, average peak serum levels of approximately 9, 18 and 32 mg/L respectively were obtained at 1 hour. Measurable levels were present 6 hours after administration.

Cefalexin is almost completely absorbed from the gastro-intestinal tract, and 75-100% is rapidly excreted in active form in the urine.
Absorption is slightly reduced if the drug is administered with food.

The half-life is approximately 60 minutes in patients with normal renal function. Haemodialysis and peritoneal dialysis will remove cefalexin from the blood.

Distribution:
Peak blood levels are achieved one hour after administration, and therapeutic levels are maintained for 6-8 hours. Approximately 80% of the active drug is excreted in the urine within 6 hours. No accumulation is seen with dosages above the therapeutic maximum of 4g/day.
The half-life may be increased in neonates due to their renal immaturity, but there is no accumulation when given at up to 50mg/kg/day.

Elimination:
Cefalexin is excreted in the urine by glomerular filtration and tubular secretion. Studies showed that over 90% of the drug was excreted unchanged in the urine within 8 hours.

During this period peak urine concentrations following the 250 mg, 500 mg and 1 g doses were approximately 1000, 2200 and 5000 mg/L respectively.

5.3 Preclinical safety data

The daily oral administration of cefalexin to rats in doses of 250 or 500mg/kg prior to and during pregnancy, or to rats and mice during the period of organogenesis only, had no adverse effect on fertility, foetal viability, foetal weight, or litter size.

Cefalexin showed no enhanced toxicity in weanling and newborn rats as compared with adult animals.

The oral LD50 of cefalexin in rats is 5,000mg/kg.

6 PHARMACEUTICAL PARTICULARS

6.1 List of excipients

Capsule Content	**Capsule Shell**
Lactose Anhydrous (SuperTab 21AN)	Gelatin
Colloidal Silicon Dioxide	Sodium lauryl sulphate
Magnesium Stearate	Water
Imprinting Ink	Brilliant Blue (E 133)
Shellac	Quinoline Yellow (E 104)
Dehydrated alcohol	Titanium Dioxide (E 171)
Isopropyl alcohol	
Butyl alcohol	
Propylene Glycol	
Strong ammonia solution	
Black Iron oxide (E 172)	
Potassium Hydroxide	
Purified water	

6.2 Incompatibilities

Not Applicable

6.3 Shelf life

36 months

6.4 Special precautions for storage

Store below 30^0C.

6.5 Nature and contents of container

The capsules are packed in blister strips of 7 or 10 consisting of PVDC coated PVC with aluminum backing. Each carton contains 21, 28, 30, 50, 56, 60 and 100 capsules.

6.6 Special precautions for disposal

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

7. MARKETING AUTHORISATION HOLDER

Ascend Laboratories (UK) Ltd.
4th floor, Elsley Court 20-22
Great Titchfield Street
London, W1W 8BE
United Kingdom
Tel: 0800 047 0073

8 MARKETING AUTHORISATION NUMBER(S)

PL 43805/0039

9 DATE OF FIRST AUTHORISATION/RENEWAL OF THE AUTHORISATION

Date of first authorization : 02/2013

Date of latest renewal : ---

10 DATE OF REVISION OF THE TEXT

15/08/2025