# Amoxicillin/clavulanate

**Antibiotic Class:**
Beta-lactam/beta-lactamase inhibitor

**Antimicrobial Spectrum:**
*Staphylococcus aureus* (methicillin susceptible), Coagulase negative Staphylococci, *Streptococcus pneumoniae* (penicillin susceptible), *Streptococcus spp.*, *Haemophilus influenzae, Moraxella catarrhalis, Neisseria meningitides, Neisseria gonorrhoeae, Enterobacteriaceae, E. coli*

**Mechanism of Action:**
The beta-lactamase inhibitors are recognized as substrates for the beta-lactamases produced by bacteria. This allows the actual beta-lactams to attack the bacterial cell wall by binding to penicillin binding proteins

**Pharmacodynamics:**
Time dependent killer (Time > MIC)

**Pharmacokinetics:**
(of the clavulanic acid)
Dose 200mg: Cmax: 8.5-14.3 mcg/L; Protein binding: 20%; Volume of distribution: 0.16-0.25L/kg; Table 5

**Adverse Effects:**
No new adverse effects are seen as a result of adding beta-lactamase inhibitors to beta-lactam antibiotics. The adverse reactions would remain the same for the parent compound

**Dosage:**
PO: Complete listing on Table 6

Dosing in adults:
Mild/Moderate: 250mg q8h to 500mg q8h
Severe: 875mg-2000mg q12h

Dosing in pediatrics:
Mild/Moderate: 20-25mg/kg/day divided q8h
Severe: 40-45mg/kg/day divided q8h
Table 8

Disease state based dosing:
Renal failure: CrCl > 30mL/min: 500mg q8-12h or 875mg q12h
CrCl 10-30mL: 250-500mg q12h
CrCl < 10mL/min: 250-500mg q24h
Hepatic failure: No dosing changes recommended at this time.

**Contraindications/Warnings/Precautions:**
Precautions: hypersensitivity to penicillins, history of gastrointestinal disease, particularly colitis, renal impairment

**Drug Interactions:**
Acenocoumarin – increased risk of bleeding; Allopurinol – higher probablility of amoxicillin rash; Contraceptives - decreased contraceptive effectiveness; Live Typhoid Vaccine - decreased immunological response to the typhoid vaccine; Methotrexate – methotrexate toxicity; Probenecid - increased amoxicillin levels; Warfarin – increased risk of bleeding

**Pregnancy:**
Category B: No evidence of risk in humans but studies inadequate.

**Monitoring Requirements:**
Therapeutic: Culture and sensitivities, serum levels, signs and symptoms of infection, white blood cell count
Toxic: Urinalysis, BUN, SCr, AST and ALT, skin rash, Neutropenia and leukopenia,

**Brand names/Manufacturer:** Augmentin/GlaxoSmithKline