SydPath
ST VINCENT'S PATHOLOGY
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FLUCLOXACILLIN DRUG MEASUREMENT INFORMATION SHEET

Flucloxacillin	Narrow spectrum 2nd generation penicillin. Time-dependent killing. **Active against**: Gram-positive organisms (including beta-lactamase producing *S. aureus*, some *S. epidermidis*, S. *lugdenensis, S. pyogenes*, *S. pneumoniae*). **Inactive against**: MRSA, *Enterococcus* spp, *Bacillus* spp and Gram-negative organisms (including Enterobacteriaceae).
When to consider TDM	TDM is useful in sepsis and should be undertaken for **critically ill patients.** Strongly recommended for patients with **bacteraemia, endocarditis, deep-seated infection**. TDM should be considered for **pathogens with a high MIC**.
Pharmacokinetics (may be altered in critical illness and organ dysfunction)	Absorption: Oral: 50-70% Protein binding: ****High: 92-95%**** Clearance: Unchanged in urine: Primary route. As metabolites: very low Elimination t½: 45 mins – 1.5 hour
Sample Collection Time	• For **intermittent dosing:** take a trough sample (pre-dose). Sample after steady state is achieved (approximately **24 hours** after initiation or following a dose change) • For **continuous infusions:** take the sample at any point. Sample after steady state has been achieved (approximately **12 hours** after the infusion was started).
Requesting and Collection	Collect 4 mL in a purple top (EDTA) tube (no gel separator). **Important information required on request form**: 1. Time of blood sample collection 2. Dosing regimen (dose and frequency) 3. Date and time of commencement 4. Date and time of last dose
Handling and Transport	Sample must be delivered to laboratory within 1 hour of collection. If not delivered to the lab within this time, centrifuge, separate plasma and freeze within 3 hours of collection.
Test Availability	Test performed Mondays to Fridays. Results available after 4 pm. For tests outside these hours, see handling & transport instructions above. Add-on tests are generally not available as sample integrity cannot be guaranteed.
Reference Intervals	**Call the Infectious Diseases or Clinical Pharmacology Registrar through switch to assist with interpretation of drug concentrations and subsequent dosing – high protein binding makes interpretation a challenge.** ***NB1****: SydPath measures total drug concentration (free + protein bound drug). Changes in serum protein concentrations will affect interpretation.* ***NB2****: Oxacillin may be used as a surrogate in susceptibility testing and is generally interchangeable.* **TARGET FOR EMPIRICAL THERAPY:** *Not well defined*. Trough >20 mg/L is a reasonable target to avoid under dosing, based on an MIC of 0.25 mg/L, 95% protein binding and normal albumin. **TARGET FOR DIRECTED THERAPY:** *Contact the Infectious Diseases or Clinical Pharmacology Registrar through switch for advice.* Contact the Microbiology Reg for assistance with MICs: (02) 8382 9194. **TOXIC RANGE:** *Not well defined.* Trough concentrations >125 mg/L have associated with significant risk of neurotoxicity.[1]
Contact	Clinical Pharmacology Laboratory: (02) 8382 9184. Patient Results: (02) 8382 9100 Further information: www.sydpath.com.au - Test Database
Instructions for Referring Labs	Centrifuge, separate plasma within 3 hours of collection, store and transport plasma frozen.
Document Approval	TDM Matters committee, July 15th 2022. Signed Ric Day, director CPT Dept
References	1. Imani et. al, 2017 DOI: 10.1093/jac/dkx209