

Fact Sheet

ARK™ Linezolid Assay

The ARK™ Linezolid Assay is a homogeneous enzyme immunoassay for the quantitative determination of linezolid in human serum on automated clinical chemistry analyzers. The measurements obtained are used in the monitoring of linezolid levels to help ensure appropriate therapy.

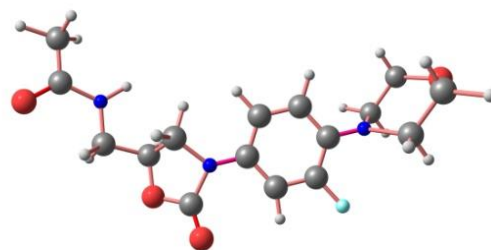
Assay Characteristics

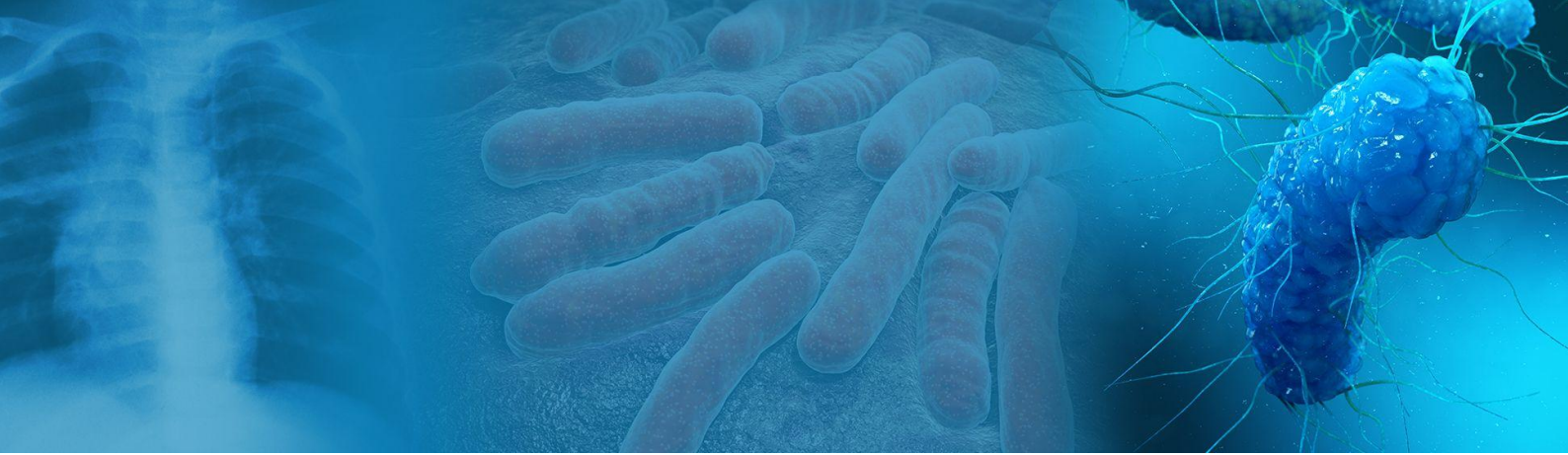
- Excellent precision, even in trough concentrations
- Fast and efficient routine monitoring for linezolid
- Liquid, ready-to-use reagents, calibrators and controls
- Storage at 2-8°C
- On-board stability for at least 60 days
- Does not contain any harmful preservatives, only $\leq 0.09\%$ sodium azide

Background

Linezolid [(S)-N-[[3-[3-Fluoro-4-(4-morpholinyl)phenyl]-2-oxo-5-oxazolidinyl] methyl]-acetamide] is an oxazolidinone derivative with a predominantly bacteriostatic effect and the first of the oxazolidinone antibiotics to gain worldwide acceptance for treating severe infections caused by methicillin- or vancomycin-resistant gram-positive bacteria, as well as drug resistant tuberculosis.

Treatment efficacy has been linked to two pharmacokinetic parameters – the ratio of the daily area under the plasma concentration curve to the minimum inhibitory concentration (AUC_{24}/MIC), and the proportion of time that the plasma concentration is above the minimum inhibitory concentration ($\%T > MIC$) for the organism. Because AUC and trough concentrations are highly correlated, measurements of trough linezolid concentrations (C_{min}) have been used to ensure effective therapy.





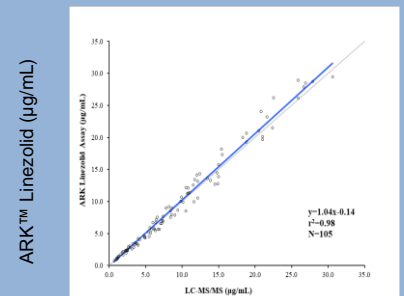
Properties of Linezolid

Dose	Adults, Children & Adolescents (12-17) 600mg IV or oral every 12 h for 10-14 days Infants, Children (1-11) 10 mg/kg IV or oral every 8 h for 10-14 days
Bioavailability	~ 100% after dosing
Peak level	0.5 to 4 hours after dosing
Protein binding	Low (31%)
Excretion	Non-kidney, kidney, and fecal; 30% eliminated unchanged in urine; may accumulate in renal failure
Metabolism	Liver (50-70%), CYP not involved
Elimination half-time	4.2 - 5.4 hours (shorter for children)

Assay Precision

Probe	N	M (µg/ml)	Repeatability		Reproducibility			
			Within-Run SD	Between Day CV (%)	SD	CV (%)	Total SD	CV (%)
ARK™ Linezolid Control								
LOW	160	2.0	0.08	3.9	0.03	1.7	0.08	4.2
MID	160	10.4	0.41	4.0	0.19	1.9	0.45	4.3
HIGH	160	20.2	0.84	4.2	0.41	2.0	0.93	4.6
Human Serum								
LOW	160	1.9	0.08	4.1	0.04	2.2	0.09	4.6
MID	160	10.6	0.39	3.7	0.15	1.4	0.43	4.0
HIGH	160	20.7	1.03	5.0	0.5	2.4	1.14	5.5

Method Comparison



Order Information

Product Description	Size	Order No.
ARK™ Linezolid Assay	28 mL R1 & 14 mL R2	5034-0001-00
ARK™ Linezolid Calibrator	1 x 4 mL & 5 x 2 mL	5034-0002-00
ARK™ Linezolid Control	6 x 4 mL	5034-0003-00