

Over 10 years

Citra-Lock™

Improve catheter patency

Anti Microbial

Catheter Lock Solution

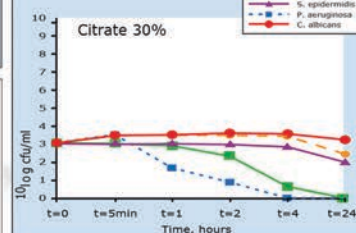
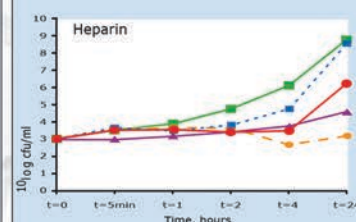
Citra-Lock™ 30%
Citra-Lock™ 46,7%

Randomised, Clinical Trial Comparison of Trisodium Citrate 30% and Heparin as Catheter-Locking Solution in Haemodialysis Patients 2

	Citrate (30%)	Heparin
Overall catheter removal	28%	43%
Catheter related bacteraemia (per 1000 days)	1.1	4.1
Exit site infections (per 1000 days)	1.3	3.9
Death from catheter related bacteraemia	0	5
Admissions for catheter related infections	6	21
Admissions for catheter related infections (per 1000 days)	0.7	2.7
Bleeding at exit sites (number of patients)	6	19
Thrombocytopenia (number of patients)	2	4
Parathesia or Dysgeusia	9	4

Study Design: Multicentre (10 centres), double blind, randomised controlled, 291 catheters (143 heparin and 148 citrate 30%), 98 tunneled catheters, 193 non-tunneled catheters from catheter days 16.547.

Citrate is significantly more Bactericidal than heparin as demonstrated by Weijmer from in vitro studies



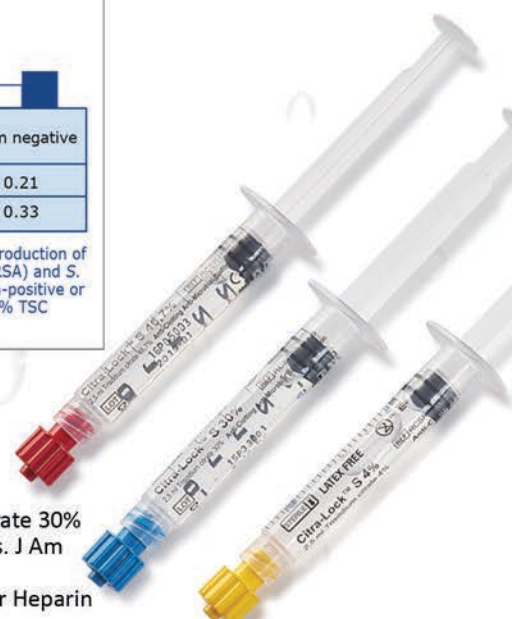
Catheter-related bacteraemia/1000 patient-days

	Total CRB	MSSA	MRSA	S epidermidis	Other Gram positive	Gram negative
2006	2.13	0.45	0.24	1.04	0.19	0.21
2007	0.81	0	0	0.22	0.27	0.33

Significant declines in catheter-related bacteraemias/1000 patient-days were seen after the introduction of 46,7% TSC amongst methicillin-sensitive *S. aureus* (MSSA), methicillin-resistant *S. aureus* (MRSA) and *S. epidermidis* (*P < 0.001). No significant difference was observed in the incidence of other Gram-positive or Gram-negative bloodstream infection. Open bars, 2006 heparin period; closed bars, 2007 46,7% TSC period.

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Citra-Lock™

Anti Coagulant

Citra-Lock™ reduces the use of thrombolytic agents like Urokinase and tPA, resulting in increased bloodflow and dialysis efficacy.

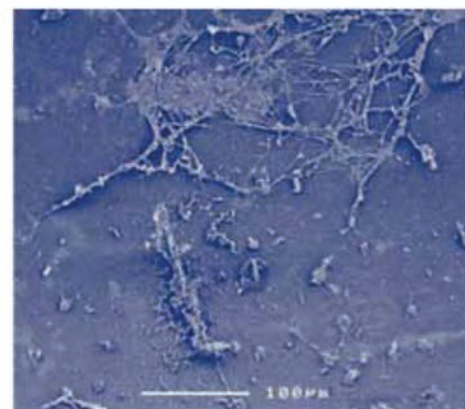
Catheter Lock Solution

Citra-Lock™ 30%
Citra-Lock™ 46,7%



Biofilm Reduction

Citra-Lock™ reduces biofilm formation in central venous catheters



Bosma W. et al. Nephrol Dial Transplant (2009) doi 10.2093/ndt/gfl651

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The new Citra-Lock™ vial features a drip free Luer-Slip/Luer-Lock connector:

- preventing microbial contamination
- protecting against needle stick injuries
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