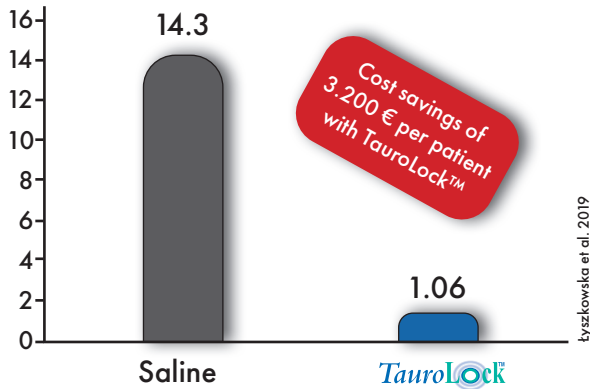
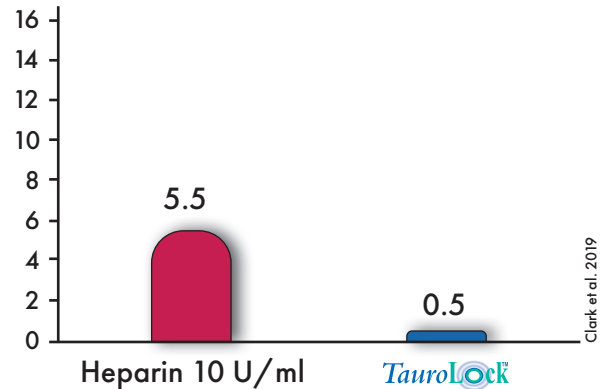


TauroLock™ in Parenteral Nutrition prevents infections - with excellent tolerability and cost savings

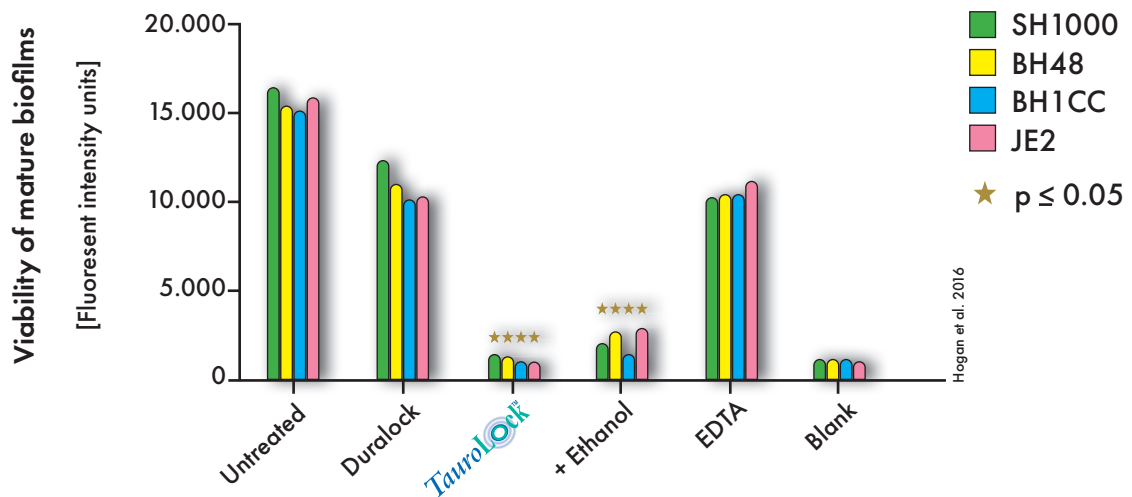
PN in small children
CRI per 1000 catheter days, $p < 0.05$



PN and Chemotherapy in Children in Australia
CRI per 1000 catheter days, $p = 0.0001$



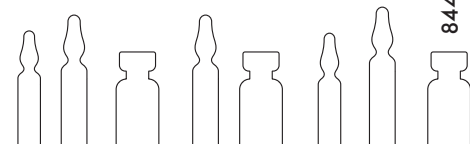
„TauroLock™...inactivated Staph. aureus biofilms at all time points investigated“



+ For side-effects of Ethanol like „plasma protein precipitation, and increased risk of thrombosis, catheter damage and systemic toxicity...“ see ref. 5,6 and others.

TauroLock™ lock solutions in clinical studies:

- Prevent catheter-related bloodstream infections. ^{2,3,4}
- Are safe for the patient. ^{2,3}
- Save costs. ^{2,4}
- After millions of applications no catheter damage was observed since 2004.



Guidelines:

- **ESPEN guideline on home parenteral nutrition 2020**
 "...taurolidine locking should be used because of its favorable safety and cost profile. (BI)"
- **ESPGHAN/ESPEN/ESPR/CSPEN guidelines on pediatric parenteral nutrition: Venous access 2018**
 "Taurolidine is effective in preventing CRBSI and should be used during long term catheter use. (BI)"
- **Prévention des infections liées aux cathéters veineux centraux, French society for clinical nutrition and metabolism (SFNCM) 2019**
 "...use of a lock solution based on taurolidine is recommended for secondary prevention... Moreover, several health organisations agree on the use of these lock solutions if the possibilities of central venous access are limited and the patient is at high risk of CRBSI. For patients with previous CRBSI, use of these lock solutions may be considered in a new catheter..."
- **Evidence-based recommendations for the use of permanent CVADs in pediatric oncology, German society for pediatric oncology and hematology (GPOH) 2018**
 "Lock solutions containing Taurolidine are recommended for the prevention of CVAD-associated infections (IB). Taurolidine containing lock solutions are also recommended for pediatric-oncologic patients on cyclized (home-) parenteral nutrition... (IB for patients on home-parenteral nutrition).
 Taurolidine (eg 1.35% Taurolidine, 4% Citrate) can be used as adjuvant measure during systemic treatment with antibiotics (II).
- **GAVeCeLT consensus 2016**
 "...the most appropriate lock solution for infection prevention (for central venous catheters - excluding dialysis catheters) should include citrate and/or taurolidine, which have both anti-bacterial and anti-biofilm activity, with negligible undesired effects if compared to antibiotics..."
- **S3-Guideline of the German society for nutritional medicine (DGEM) in cooperation with the GESKES, the AKE and the DGVS
 Clinical nutrition in the gastroenterology (part 3) – chronic intestinal failure 2014**
 "Taurolidine-Citrate should be used as a secondary prevention after previous catheter-infection [B (BM)]; it may also be used as primary prevention [C (BM)]." Chapter 2.6.4., Recommendation 31

References:

1. Hogan S. et al. In Vitro Approach for Identification of the Most Effective Agents for Antimicrobial Lock Therapy in the Treatment of Intravascular Catheter-Related Infections Caused by Staphylococcus aureus. Antimicrob Agents Chemother 2016;60(5):2923-2931.
2. Łyszkowska M. et al. Effects of Prophylactic Use of Taurolidine-Citrate Lock on the Number of Catheter-Related Infections in Children Under 2 Years of Age Undergoing Surgery. J Hosp Infect. 2019 Oct;103(2):223-226.
3. Clark J.E. et al. Taurolidine-Citrate Line Locks Prevent Recurrent Central Line-Associated Bloodstream Infection in Pediatric Patients. Pediatr Infect Dis J. 2019;38: e16–e18.
4. Tribler S. et al. Taurolidine-citrate-heparin lock reduces catheter-related bloodstream infections in intestinal failure patients dependent on home parenteral support: a randomized, placebo-controlled trial. Am J Clin Nutr 2017;106(3):839-848.
5. Daoud D.C. et al., Antimicrobial Locks in Patients Receiving Home Parenteral Nutrition. Nutrients 2020, 12, 439; doi:10.3390/nu12020439.
6. Mermel L.A. and Alang N. Adverse effects associated with ethanol catheter lock solutions: a systematic review. J Antimicrob Chemother 2014; 69: 2611–2619.

