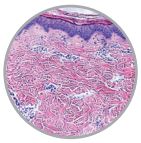
PUBLISHED STUDY RESULTS

Study evaluating the antimicrobial effectiveness within **PuraPly® AM** and **PuraPly® XT** versus a variety of other wound products[1]

STUDY BACKGROUND

- Biofilm forms when bacteria proliferate and attach to the wound surface, triggering prolonged inflammation and stalling the wound healing process[2]
- It is crucial to control bioburden in the early stages to avoid biofilm formation[1]
- The ideal product should contain an extracellular matrix scaffold with a broad-spectrum antimicrobial that provides a sustained effect against bacteria within the product without harming healing cells[1,3,4]

ASSAYS

1		***In vitro* zone of inhibition**	Assessed antimicrobial effectiveness by measuring zones of bacterial growth inhibition against MRSA, a bacteria associated with biofilm formation
2		***In vitro* cytotoxicity**	Measured cell proliferation and cell viability using human dermal fibroblasts in media conditioned with test materials
3		***In vivo* microbiology***	Compared MRSA colonies in each wound, using a porcine deep reticular dermal wound model
4		***In vivo* histology***	Evaluated biopsies for several parameters, including percent of wound re-epithelialized, using a porcine deep reticular dermal wound model

*Wounds were inoculated with MRSA and were allowed to form biofilm for 72 hours; the wounds were then debrided before the application of testing agent.

Test materials† included:

PuraPly AM (2-layer native ECM scaffold plus PHMB)

PuraPly XT (5-layer native ECM scaffold plus PHMB)

BlastX‡ (benzalkonium chloride, polyethylene glycols [400 and 3350], sodium citrate, and citric acid)

Aquacel Ag (sodium carboxymethylcellulose and silver)

PriMatrix Ag (fetal bovine collagen Type III and silver)

Promogran Prisma (collagen, oxidized regenerated cellulose, and silver)

- Each testing material was prepared and used in accordance with its respective manufacturer's instructions for treatment application
- Groups were blinded to prevent any unintentional biased data analysis prior to, during, and after the study

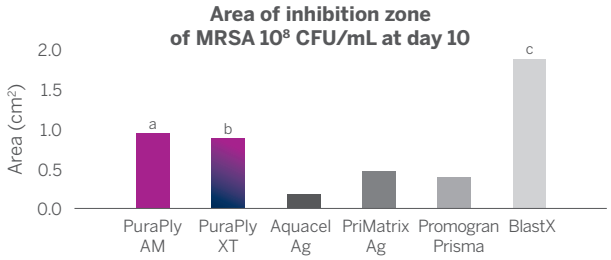
†Products are registered trademarks of their respective companies. ‡Topical treatment.
ECM=extracellular matrix; MRSA=methicillin-resistant *Staphylococcus aureus*; PHMB=polyhexamethylene biguanide.

PUBLISHED STUDY RESULTS *(continued)*

PuraPly® AM and **PuraPly® XT** demonstrated substantial reduction in MRSA bacterial load and persistent antimicrobial effectiveness within the product without compromising wound healing cells.[1]

RESULTS

1

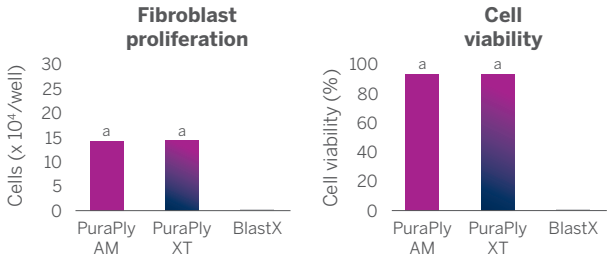


PuraPly AM and PuraPly XT demonstrated:

- Largest diffused areas (from day 0 to day 10) compared to Aquacel Ag, PriMatrix Ag, and Promogran Prisma
- A persistent antimicrobial activity against MRSA for 10 days

[a]*P*<0.05 vs Aquacel Ag, PriMatrix Ag, Promogran Prisma; [b]*P*<0.05 vs Aquacel Ag and Promogran Prisma; [c]*P*<0.05 vs all treatments

2

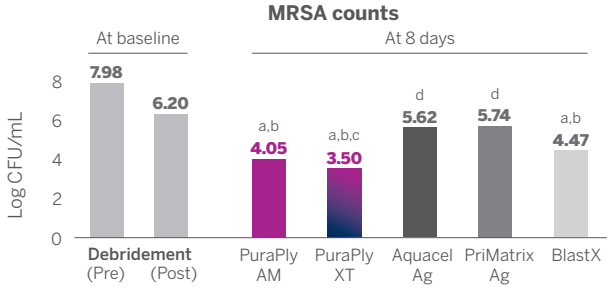


At 24 hours, PuraPly AM and PuraPly XT demonstrated:

- No detrimental effect on cell proliferation, in contrast to BlastX
- No detrimental effect on cell viability, in contrast to BlastX

[a]*P*<0.001 vs Blast X

3

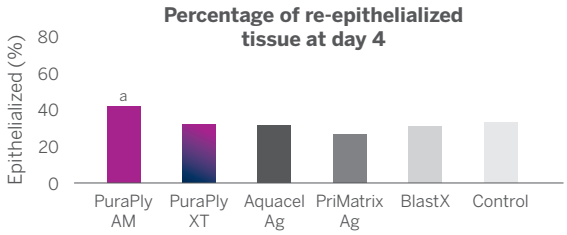


PuraPly AM and PuraPly XT displayed:

- The highest antimicrobial activity against MRSA compared to Aquacel Ag and PriMatrix Ag

[a]*P*<0.05 vs pre- and post-debridement baseline; [b]*P*<0.05 vs Aquacel Ag and PriMatrix Ag; [c]*P*<0.05 vs BlastX; [d]*P*<0.05 vs pre-debridement baseline

4



PuraPly AM demonstrated:

- Faster re-epithelialization (at day 4) compared to PriMatrix Ag

[a]*P*<0.05 vs PriMatrix Ag

KEY STUDY FINDINGS

In this study consisting of multiple *in vitro* and *in vivo* analyses:[1]

- PuraPly AM and PuraPly XT exhibited a persistent and significantly greater antimicrobial effectiveness within the products compared with other wound matrix products
- PuraPly AM and PuraPly XT did not prohibit cell proliferation and were non-cytotoxic to wound healing cells, unlike topical treatments
- PuraPly AM expedited early re-epithelialization of the wound bed

References: 1. Davis SC, et al. *Int Wound J.* 2022;19(1):86-99. **2.** Wolcott RD, Rhoads DD. *J Wound Care.* 2008;17(4):145-155. **3.** Ruszczak Z. *Adv Drug Delivery Rev.* 2003;55(12):1595-1611. **4.** Schultz G, et al. *Wound Repair Regen.* 2017;25(5):744-757.