



# Supplementary Information: Adaptation of a Nature-Identical Material to the Needs of Advanced Chronic Wound Care

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**Table S1.** Clinical trials assessing different BC-based wound dressings in chronic wound care.

Author	Indication	Study design	Patients	Treatment	Control	Conclusion
Alvarez et al. [1]	Venous leg ulcers	Prospective RCT	24 adults	Wet BC-dressing (XCell®) + compression	Nonadherent silicone dressing + compression	More effective autolytic debridement; reduced time to granulation; greater wound area reduction; less wound pain
Portal et al. [2]	Nonhealing lower extremity ulcers	Retrospective observational study	11 adults	Dry BC-dressing (Dermafill™)	Various standard of care products	Shortened time to wound closure over standard care
Solway et al. [3]	Diabetic foot ulcers	Prospective RCT	30 adults	Dry BC-dressing (Dermafill™)	Petrolatum gauze	Faster wound closure rate
Dini et al. [4]	Venous leg ulcers	Prospective RCT	46 adults	Wet BC-dressing (Suprasorb® X) + foam + compression	Foam + compression	Improved leg ulcer healing and restoration of skin barrier function
Cavalcanti et al. [5]	Venous leg ulcers	Prospective RCT	25 adults	Wet non-commercial BC-dressing + gauze	Medium chain triglycerides oil + gauze	Decreased pain; earlier discontinuation of analgesic use
Colenci et al. [6]	Venous leg ulcers	Prospective RCT	46 adults	Dry BC-dressing (Nanoskin®) + compressive elastic band	Collagenase dressing + compressive elastic band	Similar results in both groups regarding pain, quality of life, safety; increased vascularization and promoted early wound healing for BC
Maia et al. [7]	Lower limb revascularization of ischaemic wounds	Prospective RCT	24 adults	BC-dressing + gel	Essential fatty acids + gauze	Faster wound area reduction, higher complete healing rate after 90 days

**Table S2.** Clinical trials assessing different BC-based wound dressings in burn wound care.

Author	Indication	Study design	Patients	Treatment	Control	Conclusion
Piatkowski et al. [8]	Second-degree burns	Prospective RCT	60 adults	Wet polyhexanide-loaded BC-dressing (Suprasorb® X)	Silver sulphadiazine cream	Better and faster pain reduction, cost-effective and safe application of BC-dressing
Aboelnaga et al. [9]	Second-degree burns	Prospective RCT	40 adults	Wet BC-dressing (EpiProtect®) + plastic film + elastic bandage	Silver sulphadiazine cream + gauze + elastic bandage	Shorter hospitalization length, lower pain score during and after wound care, fewer dressing changes
delli Santi et al. [10]	Second/third-degree burn	Pilot study	5 children	Wet BC-dressing (EpiProtect®) after enzymatic debridement with Nexobrid™	-	BC-dressing effective to heal pediatric burn wounds after enzymatic debridement
Karlsson et al. [11]	First-degree and excised burns	Retrospective comparative case review	38 children & adults	Wet BC-dressing (EpiProtect®)	Porcine xenograft	Similar outcome for both groups, better pain relief for BC-dressing
Cattalaens et al. [12]	Second/third-degree burns	Retrospective evaluation	56 children	Wet BC-dressing (Epicite <sup>hydro</sup> ) + petrolatum gauze + dry compress	-	Easy applicability, rapid re-epithelialization, excellent wound hydration, no wound-associated infections, no hypertrophic scars, good wound healing
Shanks et al. [13]	First- to third-degree burns	Prospective case series	30 children	Wet BC-dressing (EpiProtect®) + silicone gauze	-	Effective analgesia for dressing changes, safe, reliable and well-tolerated for pediatric patients
Maurer et al. [14]	First- to third-degree burns	Retrospective comparative trial	190 children	Wet BC-dressing (Epicite <sup>hydro</sup> ) + non-adhesive gauze + dry compress	Polyurethane foam dressing	Similar for wound healing, rate of complications and skin grafting, shorter hospitalization length and less interventions with anesthesia for BC
Resch et al. [15]	Second-degree burns	Prospective case series	16 children	Wet BC-dressing (Epicite <sup>hydro</sup> ) + non-adhesive gauze + dry compress	-	Undisturbed recovery of burn, frequency of dressing changes up to seven days
Schiefer et al. [16]	Second-degree burns	Prospective open comparative trial	20 adults	Wet BC-dressing (Epicite <sup>hydro</sup> ) + non-adhesive gauze + external dressing	SUPRATHEL® skin substitute	Similar outcome for both groups with regard to pain reduction, bleeding, infection, exudation, and scarring, better cost-effectivity for BC-dressing

**Table S3.** Overview of wound diagnoses in BC\_A Post-Market Clinical Follow-up Study.

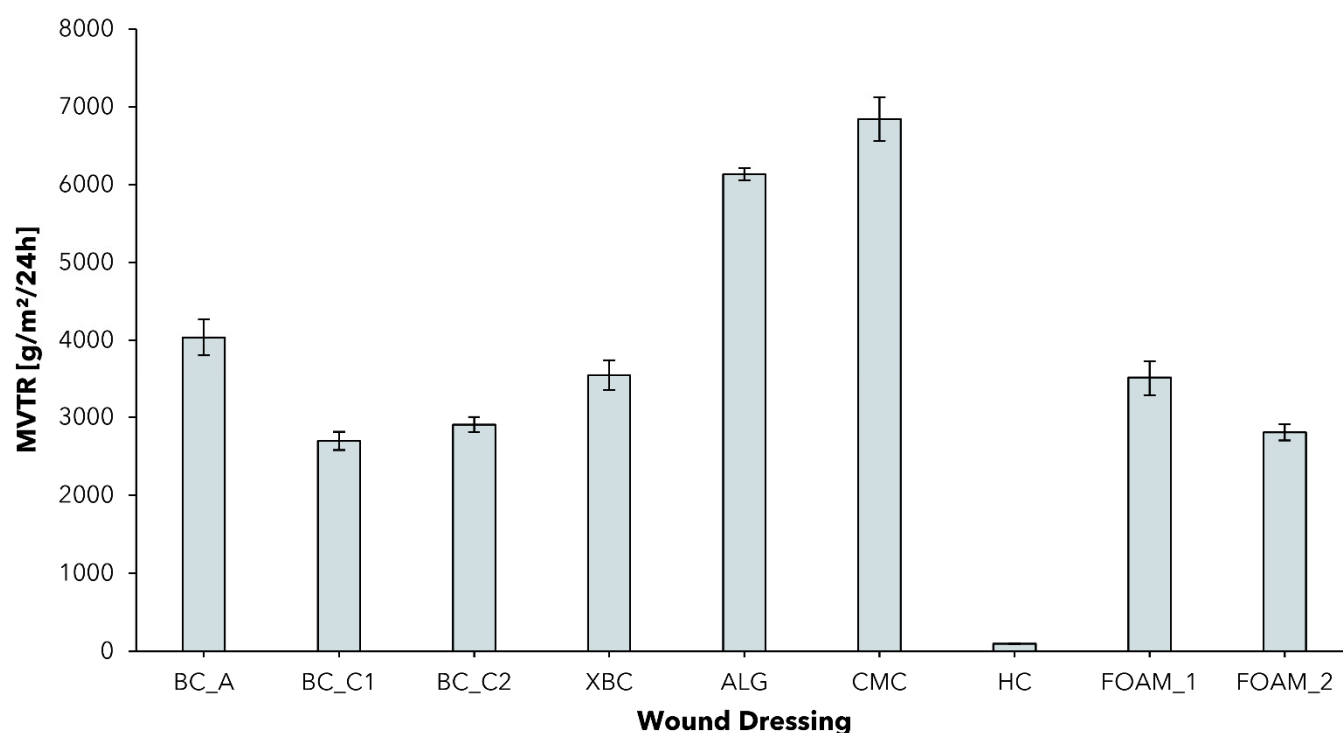
Wound Diagnosis	Patient Count
Venous Leg Ulcer (VLU)	18
Mixed Leg Ulcer (MLU)	8
Diabetic Foot Syndrome (DFS)	4
MLU + DFS	1
Wound Dehiscence	1
Decubitus Ulcer, unspecified	2
Decubitus Ulcer Stage II	2
Decubitus Ulcer, not assessable	1
Charcot Foot, non-diabetic	1
Leg Ulcer, concomitant vasculitis	1
Acne inversa	1

**Table S4.** Overview of local wound treatment prior BC\_A Post-Market Clinical Follow-up Study.

Previous Local Wound Treatment	Patient Count
Sodium Carboxymethylcellulose (Hydrofiber) Dressing	6
Sterile Gauze	2
Foam Dressing	3
Alginate Dressing	2
Hydrocolloid Dressing	1
Polyester Contact Mesh with Medical Honey (Vivamel® Contact)	2
Silver-coated antimicrobial Dressing (Acticoat® Flex 3)	1
Antimicrobial hydrogel-impregnated Acetate Dressing (Cutimed® Sorbact® Gel)	1
Silver-coated Alginate Dressing	3
Iodine Solution	1
Silver Sulphadiazine Cream (FLAMMAZINE®)	1
Silver-coated Sodium Carboxymethylcellulose Dressing (AQUACEL® AG)	4
Silver-coated Absorbent Activated Charcoal Dressing	4
Absorbent Activated Charcoal Dressing	1
ActiMaris® Wound Gel	1
Medical Honey impregnated Gauze	2
Hydrogel	2
Hydrophobic Wound Dressing	2
Various	1
Unspecified	4

**Table S5.** Overview of causal therapy in BC\_A Post-Market Clinical Follow-up Study.

Causal Therapy	Patient Count
Compression Therapy	10
Revascularization/ Percutaneous Transluminal Angioplasty	2
Abdominal Binder	1
Regular Assessment of Ankle-Brachial Index	1
Pressure Relief	6
Supportive Orthosis	1
Pharmacotherapy: Prednisolone	1
Pharmacotherapy: Metformin	1
Vacopaso® Free Therapy Shoe	1

**Figure S1.** Moisture vapor transmission rate (MVTR) of different wound dressings determined with standard Paddington cup in contact with vapor method (mean ± SD; n = 5).

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