# Facilitate Site-Appropriate Tissue Remodeling



# **Cytal<sup>®</sup>/MicroMatrix<sup>®</sup>** For the Management of Acute, Chronic, & Traumatic Wounds



# One Core Technology

# MatriStem **UBM**<sup>™</sup>

ACell's proprietary MatriStem UBM<sup>™</sup> (Urinary Bladder Matrix) technology is non-synthetic, minimally processed, and may help mitigate the inflammatory response during wound management. UBM has a collection of collagens and proteins arranged in a three-dimensional structure with features including<sup>1,2</sup>.

- Collagen Types I, III, IV, & VII
- Glycosaminoglycans
- Proteoglycans
- Laminin

## Naturally Derived Bimodal Structure

#### Lamina Propria

Open and porous surface that allows for cellular infiltration and capillary ingrowth

#### **Epithelial Basement Membrane**

Thin dense collagen structure that may contribute to cell attachment

# **Two Wound Management Devices**

# **MicroMatrix**<sup>®</sup>

#### PARTICULATE

MicroMatrix is a particulate that offers a wound management solution for irregular, tunneled, or undermined wounds.

- Resorbs quickly, facilitating the host's remodeling response
- Provides thorough contact with the wound bed
- May be applied as a powder or paste

# Cytal<sup>®</sup> Wound Matrix

#### SHEET

Cytal is a highly conformable, pre-fenestrated sheet that is available in multiple sizes and thicknesses which offers a range of options for wound management.

- Non-crosslinked wound management scaffold
- Sheets are conformable, and fully resorbable
- Fenestrations help manage wound exudate

Can be used individually or together\*

## WELL ESTABLISHED AND VERSATILE

## **Track Record**

- 10+ Years on the Market
- 200+ Clinical and Pre-clinical Studies\*\*
- <0.02% Adverse Event Rate<sup>3</sup>

## **Multiple Applications**

- Traumatic Wounds
- Chronic Wounds
- Tunneled and Undermined Wounds
- Surgical Wounds
- Pressure Injuries

\* When using concomitantly, apply MicroMatrix before you apply the Cytal Wound Matrix sheet. \*\* Studies referenced pertain to MatriStern UBM Technology.

# **UBM Wound Management**

Cytal and MicroMatrix are both derived from ACell's proprietary MatriStem UBM<sup>™</sup> technology. These products help facilitate the body's ability to remodel site-appropriate tissue during the wound management cycle.

#### Host Wound Healing Lifecycle with UBM<sup>4</sup> (days)



## What are Macrophages and Why do they Matter?

Macrophages are recognized as primary regulators of wound healing and have two main phenotypes, M1 and M2.

A higher M2:M1 ratio has been associated with site-appropriate tissue remodeling, whereas a higher M1 response is associated with an encapsulation or integration response<sup>6</sup>.



- Scarring
- **Pro-Inflammatory**

**Pro-Remodeling** > Anti-Inflammatory

# Lower Rung Options

Skin graft and flap procedures are useful solutions for managing complex cases, but may pose challenges that can advance the patient up the reconstructive ladder. ACell's products may mitigate the need for more complex reconstruction, providing lower rung options to the surgeon.

	Vascularized Composite Allograft
	Vascularized Free Flap
	Distant Pedicle Flap
	Local Pedicle Flap
	Rotation Flap
	Local Skin Flap
	Split-thickness Skin Graft
	Spontaneous Closure
	Delayed Primary Closure
	Primary Closure
+	Secondary Intention

## Cytal and MicroMatrix Can Help

- Facilitate ingrowth of vascular tissue over avascular structures<sup>8,9</sup>
- ✓ Manage wounds to a uniform wound bed<sup>10,11,12</sup>
- Salvage failed skin graft or flap procedures<sup>12,13</sup>
- Address areas of skin graft or flap non-take<sup>12,14</sup>
- Manage donor sites
- Manage wounds resulting from contracture release or excision<sup>12,15</sup>

In certain cases, MicroMatrix and Cytal may offer physicians an alternative for wound management that is a lower rung on the reconstructive ladder. This may be particularly beneficial for complex patients who are not good candidates for skin grafts or flaps.

## Standard of Care vs MicroMatrix and Cytal\*

A recent pre-clinical study of an excisional porcine wound model found that Cytal and MicroMatrix facilitated wound closure, increased percentage of epithelialization, and reduced wound contracture. Wound management with Cytal and MicroMatrix resulted in dermis structure similar to healthy skin in this porcine pre-clinical wound model<sup>16</sup>.



\* Results may vary. Pre-clinical publications may not reflect clinical results.

## From Head to Toe

## Scalp Degloving

#### One application of MicroMatrix and Cytal 6-Layer | Discharged at 23 hours

#### Before:

Full-thickness wound of the forehead and scalp measuring 8 cm x 9 cm following a motor vehicle accident.

#### After:

Full wound closure by day 48. This image is post-application day 61 and shows continuous remodeling.





Before

After

### Forearm Trauma<sup>®</sup>

#### One application of MicroMatrix and Cytal | No skin grafting needed



#### Before:

Traumatic forearm wound including the presence of devitalized tendon and exposed muscle.

#### After:

Wound remained closed six months following reconstruction procedures, without the use of skin grafting.



Before



After

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## Hand Degloving

One application of MicroMatrix and Cytal 6-Layer | Full wound closure with digit movement observed at 2.5 months



#### Before:

Rollover degloving injury of the dorsum of the right hand and fracture of the radius. Excisional debridement was performed.

#### After:

Follow-up at seven months. Patient achieved full wound closure, with digit movement observed, at 2.5 months



Before



After

# **ACell Has You Covered**

## Fournier's Gangrene

Initial application of MicroMatrix and two Cytal 2-Layer sheets | Discharged following day



#### Before:

Fournier's gangrene of the right groin and right hemiscrotum on a morbidly obese patient with a history of diabetes mellitus. Following debridement and the initial application of MicoMatrix and Cytal, Cytal 1-layer was applied once weekly for two weeks during follow-ups.

#### After:

One year post-op follow-up, demonstrating complete wound closure with minimal signs of scarring of affected region. The wound completely closed at six weeks without skin graft or primary closure procedures.





Before

After

## Sacral Pressure Injury<sup>17</sup>

#### Three weekly treatments of MicroMatrix and Cytal 1-Layer



#### Before:

Persistent stage IV sacral pressure injury, post failed topical wound care treatments and seven weeks of Negative Pressure Wound Therapy.

After:

Sacral wound closed at six weeks following weekly treatments of Cytal and MicroMatrix.



Before



After

Images reprinted with permission from OA Surgery London.

## Surgical Excision

#### Single application of MicroMatrix and Cytal 6-Layer



#### Before:

Wound presentation following the excision of a large hematoma.

#### After:

Wound closure at week 11, demonstrating coverage of exposed bone with vascularized tissue and re-epithelization.



Before



After

Individual results may vary.

ACell does not provide medical advice. It is the responsibility of the treating health care provider to determine the patient's best course of treatment based upon his/her medical judgment.

Product	Item Number	Size	Quantity
MicroMatrix Particles	MM0020	20 mg	1/box
MicroMatrix Particles	MM0030	30 mg	1/box
MicroMatrix Particles	MM0060	60 mg	1/box
MicroMatrix Particles	MM0100	100 mg	1/box
MicroMatrix Particles, Fine	MM0100F	100 mg	1/box
MicroMatrix Particles	MM0200	200 mg	1/box
MicroMatrix Particles	MM0500	500 mg	1/box
MicroMatrix Particles	MM1000	1000 mg	1/box
Cytal Wound Matrix 1-Layer	WS0303	3 x 3.5 cm	1/box
Cytal Wound Matrix 1-Layer	WS0307	3 x 7 cm	1/box
Cytal Wound Matrix 1-Layer	WS0710	7 x 10 cm	1/box
Cytal Wound Matrix 1-Layer	WS1015	10 x 15 cm	1/box
Cytal Wound Matrix 2-Layer	WSM0505	5 x 5 cm	1/box
Cytal Wound Matrix 2-Layer	WSM0710	7 x 10 cm	1/box
Cytal Wound Matrix 2-Layer	WSM1015	10 x 15 cm	1/box
Cytal Wound Matrix 3-Layer	WSR0505	5 x 5 cm	1/box
Cytal Wound Matrix 3-Layer	WSR0710	7 x 10 cm	1/box
Cytal Wound Matrix 3-Layer	WSR1015	10 x 15 cm	1/box
Cytal Wound Matrix 3-Layer	WSR1625	16 x 25 cm	1/box
Cytal Wound Matrix 3-Layer	WSR1635	16 x 35 cm	1/box
Cytal Wound Matrix 6-Layer	WSX0505	5 x 5 cm	1/box
Cytal Wound Matrix 6-Layer	WSX0710	7 x 10 cm	1/box
Cytal Wound Matrix 6-Layer	WSX1015	10 x 15 cm	1/box

## Learn More: 🏶 www.acell.com

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- Disclaimer: Per the Federal Food, Drug, and Cosmetic Act (FD&C Act) and 21 CFR Section 814.3, the FDA defines pediatric patients as persons aged 21 years or younger at the time of their diagnosis or treatment. The utilization of this article in promotional materials is not meant to infer or imply that ACell medical devices are cleared or approved for use in individuals younger than 22 years of age. This article contains scientific information relevant to the adult population (>22 years) where urinary bladder matrix (UBM) may assist in restoring a host tissue immune response seen in diabetic patients to one similar to that of non-diabetic patients.
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# ACell Employee | ¶ Consultant



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