CYGNUS®

AMNIOTIC ALLOGRAFTS

IMMUNE PRIVILEGED soft tissue barriers and wound coverings that provide PROTECTION for traumatized tissue while RETAINING an array of preserved endogenous growth factors, cytokines, and extracellular matrix proteins.

VIVEX® BIOLOGICS

CYGNUS®

CYGNUS® is a family of amniotic tissue allografts processed to retain the inherent mechanical properties of amniotic tissue and rich supply of extracellular matrix, growth factors, and cytokines.[1,2]

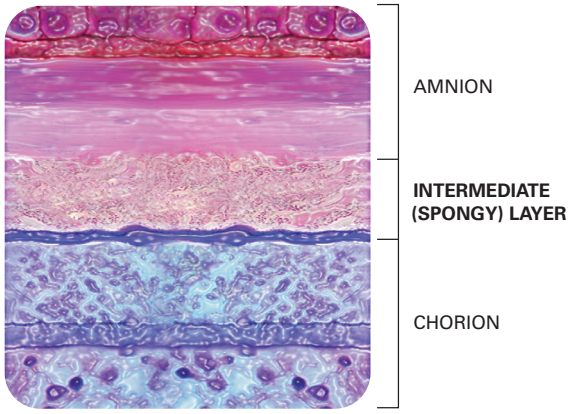
CYGNUS AMNIOTIC ALLOGRAFT FEATURES AND BENEFITS

Amniotic-derived tissues may be used as a soft tissue barrier and wound covering that retains endogenous extracellular matrix (ECM), growth factors, and cytokines[2-5] essential for signaling. The properties of amniotic tissue help provide protection to damaged tissue while maintaining nutrient-rich growth factors.[6,7]

WHY CYGNUS AMNIOTIC ALLOGRAFTS

CYGNUS Matrix: Multi-layer membrane allograft maintaining the amnion layer, the intermediate/spongy layer, and the chorion layer of the amniotic sac.

- Amniotic layers are never delaminated
- ~400µm (0.4mm) thick
- 4X thicker than the single amnion layer
- Available in rectangular and circular shapes in a variety of sizes to meet clinical needs

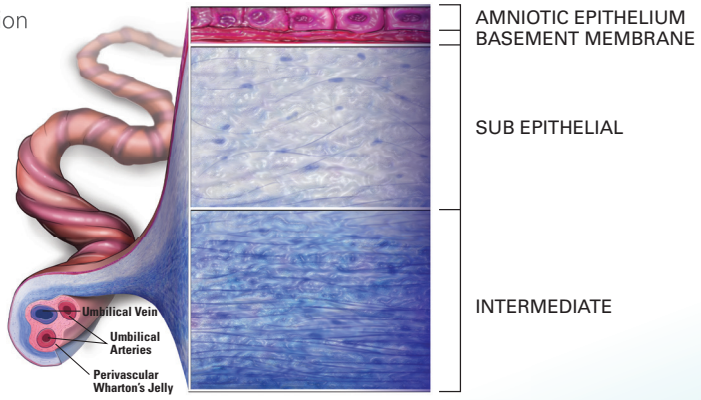


CYGNUS Dual: Dual-layer membrane allograft featuring the amnion layer of the amniotic sac

- ~200µm (0.2mm) thick
- 2X thicker than single amnion layer
- Double-sided membrane features 2 layers of amniotic tissue, oriented with the epithelial layer facing outward, allowing for omnidirectional application of the allograft

CYGNUS Solo: Single-layer membrane allograft featuring the amnion layer of the amniotic sac

- Thin amniotic membrane allograft, ~100µm (0.1mm) thick



WHY CYGNUS MAX AMNIOTIC MEMBRANE ALLOGRAFTS DERIVED FROM THE UMBILICAL CORD

CYGNUS Max: Amniotic membrane allograft derived from the umbilical cord that is up to 4X thicker than the single amnion layer

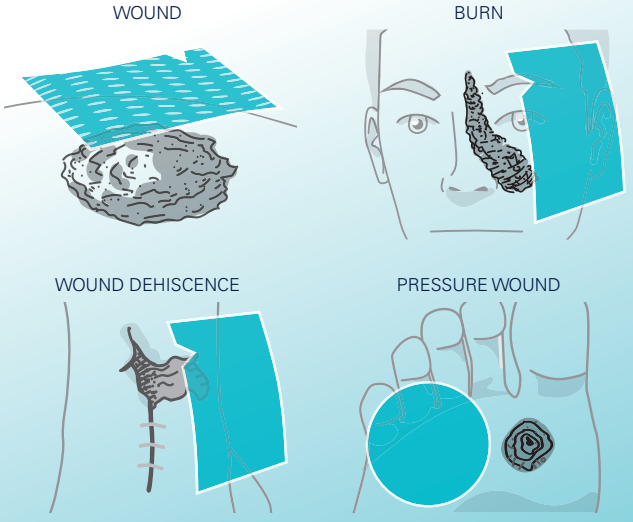
CYGNUS Max XL: Amniotic membrane allograft derived from the umbilical cord, fenestrated to allow for wound drainage and increases the size of the available allograft

- Thickest dehydrated amniotic membrane allograft, ~400µm (0.4mm)
- Robust enough to be sutured in place

POTENTIAL CLINICAL APPLICATIONS

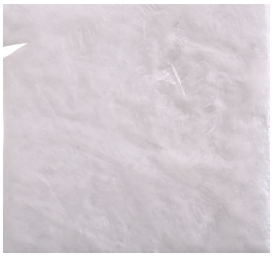
In general wound care, such as diabetic foot ulcers, venous leg ulcers, pressure wounds, hard-to-heal wounds, and surgical wound dehiscence, CYGNUS has been used as a protective barrier to provide essential protection for wounds. Other potential clinical applications include general orthopedics, arthroplasty, hand and wrist, and foot and ankle procedures.

- Wounds
- Burns
- Diabetic Foot Ulcers
- Venous Leg Ulcers
- Pressure Wounds
- Hard-to-Heal Wounds
- Surgical Wound Dehiscence



CYGNUS® MATRIX

CYGNUS® DUAL



CYGNUS® SOLO

CYGNUS® MAX

CYGNUS® MAX XL

VIVEX'S PROPRIETARY INTEGRITY PROCESSING™ PRESERVES UP TO 600+ SIGNALING PROTEINS IN CYGNUS MATRIX, DUAL, SOLO, AND MAX[8]

VIVEX's Integrity Processing™ is a gentle process that removes blood remnants, while preserving the allograft composition without compromising structural integrity.

KNOWN GROWTH FACTORS AND EXTRACELLULAR MATRIX (ECM) PROTEINS IN AMNIOTIC ALLOGRAFTS AND THEIR CORRESPONDING ROLE[9,10]

GROWTH FACTORS	ROLE
MCP-1[11], IL1-RA[12], TGF-β1&2[13], IL6[12]	Immune Modulation / Anti-Inflammatory
TNF-α[14], GRO-α[15], HGF[7], IGF1&2[16,17], VEGF[18], βFGF[19], PDGFα&β[20], Ang[21]	Angiogenesis
EGF[22], FGF[19], TGFβ[13], TIMP(1-4)[23], HGF[24]	Cell Growth
PDGFα&β[20], EGF[22], TIMP-2&-3[23], HGF[24], Ang[21], KGF[25]	Cell Migration
PDGFα&β[20], EGF[22], FGF[1], TGF-β1&2[13], IGF1&2[16,17], Ang[21], KGF[25]	Cell Proliferation
PDGFα&β[20], EGF[22], TIMP-2& -3[23], TGF-β1&2[13]	Cell Differentiation

ECM PROTEINS	ROLE
Collagen, type I-VII	Main structural protein component in the body
Fibronectin	Binding protein agent, supports initial cell attachment
Hyaluronic Acid	Lubricating hydrophilic protein that coats cells and aids in hydrodynamic movements
Laminin	High molecular weight protein to which cells easily bind and migrate across
Proteoglycans	Connective proteins that fill the spaces between cells in tissue and affect the stability of the proteins and growth factors

SAFE AND TRUSTED PARTNER

50+ years of innovation

Our portfolio of allografts and other signature VIVEX solutions include viable bone matrices; demineralized bone matrices, such as cortical and cancellous bone in strips, sponges, fibers, and putties; amnion; dermis; and intervertebral disc tissue allografts. During the more than 50 years of safe and effective operations, VIVEX has delivered over 2 million allografts with no disease transmission throughout the US and eighteen countries worldwide.

- Amniotic tissue is recovered from healthy mothers at live births.
- Amniotic tissue is handled and processed in accordance with both FDA regulations and AATB standards.
- VIVEX maintains the trend of safely delivering over 2 million allografts with no disease transmission.

CYGNUS® MATRIX

Amniotic Allograft
Product HCPCS Code: Q4199 (CYGNUS Matrix) per sq cm

ITEM NUMBER	SIZE	SQ. CM
CAP020200S	2x2cm	4
CAP020300S	2x3cm	6
CAP030300S	3x3cm	9
CAP040400S	4x4cm	16
CAP040600S	4x6cm	24
CAP101100S	10x11cm	110

CYGNUS® MATRIX DISK

Amniotic Allograft
Product HCPCS Code: Q4199 (CYGNUS Matrix) per sq cm

ITEM NUMBER	SIZE	SQ. CM
CAP015000S	15mm Disk	2
CAP025000S	25mm Disk	5
CAP035000S	35mm Disk	10

CYGNUS® DUAL

Amniotic Allograft
Product HCPCS Code: Q4282, CYGNUS Dual per sq cm

ITEM NUMBER	SIZE	SQ. CM
CAD020300S	2x3cm	6
CAD040400S	4x4cm	16
CAD040600S	4x6cm	24
CAD071500S	7x15cm	105

CYGNUS® MAX

Amniotic Membrane Derived from Umbilical Cord
Product HCPCS Code: Q4170 (CYGNUS) per sq cm

ITEM NUMBER	SIZE	SQ. CM
CAM020300S	2x3cm	6
CAM020400S	2x4cm	8
CAM030300S	3x3cm	9

CYGNUS® MAX XL

Fenestrated Amniotic Membrane Derived from Umbilical Cord
Product HCPCS Code: Q4170 (CYGNUS) per sq cm

ITEM NUMBER	SIZE	SQ. CM
CAX020300S	2x3cm	6
CAX040400S	4x4cm	16

CYGNUS® SOLO

Amniotic Allograft
Product HCPCS Code: Q4170 (CYGNUS) per sq cm

ITEM NUMBER	SIZE	SQ. CM
CAS020300S	2x3cm	6
CAS030300S	3x3cm	9
CAS040400S	4x4cm	16
CAS040600S	4x6cm	24
CAS040800S	4x8cm	32

Ready-to-use, **ambient temperature storage** (2°C to 30°C)

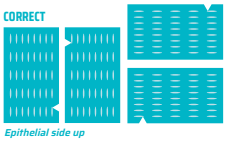
No prep required, hydrates in site

E-Beam sterilized for sterility assurance level (SAL) of 10^{-6}

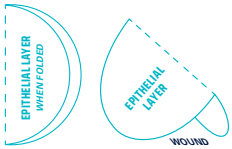
5-year shelf life

CYGNUS Matrix/Solo/Max Orientation

CYGNUS Max XL Orientation



CYGNUS Matrix Circular-Shaped Graft Orientation



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