

Biotivity™ A/C Plus Membrane

Growth-factor charged barrier

Biotivity A/C Plus Membrane is a growth-factor rich bioactive barrier derived from human placental tissue. Consisting of the amnion, intermediate, and chorion layers, Biotivity A/C Plus is minimally manipulated using proprietary processing that preserves natural mechanical properties, elasticity, growth factors, and cytokines.^{1,2}



Enhancing regeneration, naturally.

Growth-factor charged performance

- Contains growth factors and cytokines which may contribute to healing¹⁻³
- Acts as a scaffold for the migration and adhesion of cells⁴
- Shown to be antibacterial and non-immunologic⁵⁻⁷

Best-in-class processing

- Sterile product never delaminated and minimally manipulated to retain the natural tissue architecture and layers²
- No antibiotics utilized during processing²
- Terminally sterilized, SAL 10^{-6,8}

The PLUS of the intermediate layer

- Natural triple-layer structure contributes to thickness and conformability⁹⁻¹¹
- Enhances handling and stretchability¹¹
- Provides additional collagen and biological enhancers like hyaluronic acid, shown to facilitate wound healing¹⁰⁻¹²

Being a selective barrier, Biotivity A/C Plus Membrane provides a growth factor-enriched matrix that serves for the exchange of nutrients. The membrane conforms nicely for site coverage or protection from the oral environment and may be suitable in a variety of regenerative procedures:

- GTR and GBR procedures¹³⁻¹⁶
- Socket and ridge preservation^{17,18}
- Perforations of the Schneiderian membrane^{19,20}
- Ridge augmentation^{15,21,22}
- Peri-implant infections^{23,24}



Notch in upper left = amnion facing up



Amnion layer

- Provides tensile strengthⁱⁱ

Intermediate layer

- Rich in hyaluronic acidⁱⁱ
- Allows the amnion layer to glide along chorionⁱⁱ
- Provides additional growth factorsⁱⁱ

Chorion layer

- Contributes to elasticity and stabilityⁱⁱ

Ordering Information

SKU	Description
BAC0808	Biotivity A/C Plus Membrane 8 x 8 mm
BAC1212	Biotivity A/C Plus Membrane 12 x 12 mm
BAC1020	Biotivity A/C Plus Membrane 10 x 20 mm
BAC1520	Biotivity A/C Plus Membrane 15 x 20 mm
BAC1525	Biotivity A/C Plus Membrane 15 x 25 mm
BAC2030	Biotivity A/C Plus Membrane 20 x 30 mm

Growth Factors and Cytokines Present ^{2*}	Description	Plus up to 250+ more not listed
Bone Healing and Tissue Repair		
BMP-4	Bone morphogenetic protein (BMP)-4 has diverse pivotal roles during bone and cartilage formation, tissue repair, or organ and neuronal development	
BMP-7	Bone morphogenetic protein (BMP)-7 plays a key role in the transformation of mesenchymal cells into bone and cartilage	
Wound Healing and Cell Repair		
bFGF	Basic fibroblast growth factor (bFGF) is involved in a variety of biological processes, including embryonic development, cell growth, morphogenesis	
FGF-7	Fibroblast growth factor-7 (FGF-7) plays a role in kidney and lung development, as well as in angiogenesis and wound healing	
GDF-15	Growth/differentiation factor 15 (GDF-15) has a role in regulating inflammatory pathways and is involved in regulating apoptosis, angiogenesis, cell repair, and cell growth	
Angiogenesis and Cellular Growth		
OPG	Osteoprotegerin (OPG) plays an important role in bone metabolism as a decoy receptor for RANKL inhibiting osteoclastogenesis and bone resorption	
PDGF-AA	Platelet-derived growth factor-AA (PDGF-AA) stimulates cell signaling pathways that elicit responses such as cellular growth and differentiation	
PIGF	Placental growth factor (PIGF) a key molecule in angiogenesis and vasculogenesis	
Cell Proliferation and Blood Vessel Development		
TGFa	Transforming growth factor alpha (TGFa) activates a signaling pathway for cell proliferation, differentiation, and development	
TGFb3	Transforming growth factor beta-3 (TGFb3) is involved in cell differentiation, embryogenesis, and development	
VEGF	Vascular endothelial growth factor (VEGF) normal function is to create new blood vessels during embryonic development, and new blood vessels after injury	

* Not a complete list

References:

1. Koizumi N et al. Curr Eye Res (2000) 20:173-177. 2. Data on file with manufacturer. 3. Lee SB et al. Curr Eye Res (2000) 20:325-34. 4. Niknejad H et al. Eur Cell Mater (2008) 15:88-99. 5. Palanker ND et al. Sci Rep (2019) 9:15600. 6. Ashraf H et al. Int J Dent (2019) 2019:Article ID 1269534. 7. Kubo M et al. Invest Ophthalmol Vis Sci (2001) 42:1539-1546. 8. Biotivity A/C Plus Membrane IFU Rev. 03. 9. Hieber AD et al. Placenta (1997) 18:301-312. 10. Malak TM et al. Placenta (1993) 14:385-406. 11. Roy A et al. J Tissue Eng Regen Med (2020) 14:1126-1135. 12. Bryant-Greenwood GD. Placenta (1998) 19:1-11. 13. Kothiwale SV et al. Cell Tissue Bank (2009) 10:317-26. 14. George AK et al. Periodontics and Prosthodontics (2018) 04. 15. Miller RJ et al. Int J Periodontics Restorative Dent (2021) 41:657-662. 16. Esteves J et al. J Periodontol (2015) 86:941-4. 17. Holtzclaw D. Compend Contin Educ Dent (2014) 35:107-12. 18. Cullum D et al. Compend Contin Educ Dent (2019) 40:178-183. 19. Chang YY et al. J Periodontal Implant Sci (2019) 49:330-343. 20. Holtzclaw D. J Periodontol (2015) 86:936-40. 21. Bhide VM et al. Int J Periodontics Restorative Dent (2021) 41:375-381. 22. Yu S-H et al. Clin Adv Periodontics (2022) 12:101-105. 23. Bhide VM et al. Int J Periodontics Restorative Dent (2022) 42:e59-e66. 24. Maksoud MA. Int J Oral Dent Health (2020) 6:105.

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