



Acellular amniotic membrane for ocular surgery

• Description

Amniotic membrane (AM) is the innermost layer of the placenta and consists of a thick **basement membrane** and an **avascular stromal matrix**(1). The basement membrane component of amniotic membrane is **similar in composition** to the **conjunctiva**(2). Amniotic membrane transplantation(AMT) has been used in different surgical subspecialties to facilitate **ocular surface reconstruction** and to **promote healing**(1).

• Mechanism of Actions

- ▶ Prolong life span and maintain clonogenicity of epithelial progenitor cells
- ▶ Promote non-goblet cell epithelial differentiation
- ▶ Promote goblet cell differentiation when combined with conjunctival fibroblasts
- ▶ Exclude inflammatory cells with anti-protease activities (3, 4)
- ▶ Suppress TGF-β signaling system and myofibroblast differentiation of normal fibroblasts to reduce scar and vascular formation(5)

▶▶ This action assists healing for conjunctiva reconstruction, epithelial defects, and stromal ulceration. ◀◀

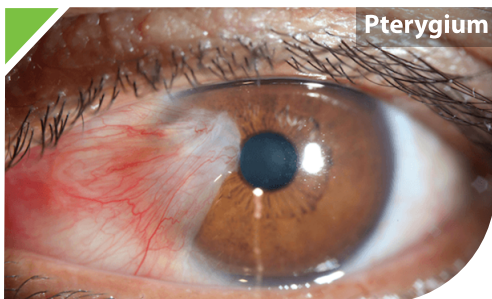
• Observed Clinical Effects

- ▶ Facilitate epithelialization
- ▶ Maintain normal epithelial phenotype
- ▶ Reduce inflammation
- ▶ Reduce vascularization
- ▶ Reduce scarring (5, 6)

Amniosin™ Indications

▶▶ Amniosin™ can be used in **all ocular diseases that cause an ulcer** ◀◀

• As a Graft for Conjunctival Diseases



Pterygium



Pinguecula



Symblepharon lysis

- ▶ Bulbar conjunctival reconstruction after removal of large lesions or scars(9)
- ▶ Conjunctivochalasis(12)
- ▶ Fornix reconstruction(8)
- ▶ Tumors and Ocular Surface Squamous Neoplasia(5,13)
- ▶ Pterygium(7)
- ▶ Pinguecula(8)
- ▶ Symblepharon lysis(10, 11)

• With or without preserved sclera or pericardium for:

- ▶ Bleb leakage or revision
- ▶ Lid reconstruction
- ▶ Orbit reconstruction(9)
- ▶ Scleral melt(14)

- For ulcers with **significant tissue loss, amniotic membrane** may be applied **in layers** to build thickness to the defect (15). Such an intervention is intended to retard protease activity and to provide bulk for the defect in the hopes of promoting faster healing and avoiding cornea transplantation. It can provide a temporizing measure before cornea transplantation or possibly suffice as a permanent treatment(16).

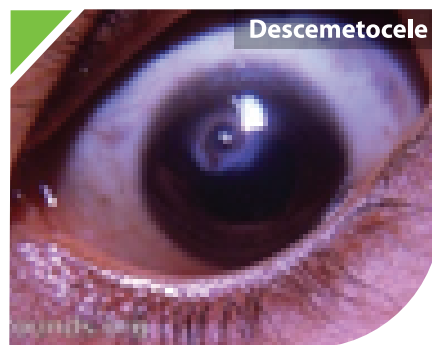
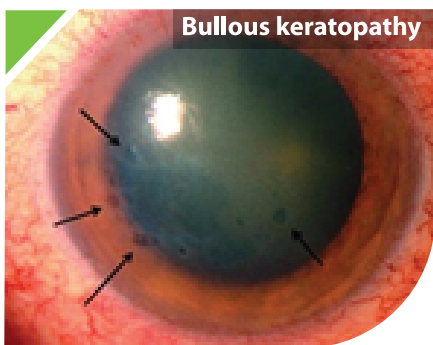


Amniosin™ processed in Sinacell Company
with certifications as below:
Iranian Medical Device (IMED) office
Biologic department of IFDA
GMP
ISO 13485
ISO 9001
Under AATB Guidance



As a Graft for Corneal Diseases

- ▶ Persistent corneal epithelial defect with or without ulceration
- ▶ Painful bullous keratopathy with erosion(9)
- ▶ Stevens–Johnson syndrome & Toxic Epidermal Necrolysis(17)
- ▶ Partial limbal stem cell deficiency (18)
- ▶ Chemical burns (19, 20)
- ▶ Sterile corneal stromal thinning, descemetocele & perforation
- ▶ Band keratopathy, scar or tumor(8)



● In conjunction with other surgeries

- ▶ Limbal conjunctival autograft for unilateral total limbal stem cell deficiency
- ▶ Keratolimbal allograft for bilateral total limbal stem cell deficiency
- ▶ Tenonplasty for scleral melt
- ▶ Glaucoma(high-risk trabeculectomy, leaking blebs, tube exposure)
- ▶ Strabismus(8)

Procedure

- Amniosin™ can be surgically attached to the ocular surface by **absorbable** or **non-absorbable** sutures. **Biological tissue adhesive** has also been used to attach Amniosin™ to the ocular surface(21).

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