References:
The amniotic membrane is the innermost layer of the placenta and consists of layers of cuboidal epithelium, collagen, cell-adhesion bio-active factors (fibronectin, laminins, proteoglycans and glycosaminoglycans) and growth factors[1].

Amniotic membrane tissue shows little to no HLA-A, B, C antigens or β2 microglobulins and is therefore immunologically inert.[2]

Amniotic membrane is obtained from donated placentas arranged through the Netcare Transplant Unit. Placentas are recovered with full informed consent from the donor.

All donors are screened for transmissible diseases such as HIV, Hepatitis B & C, HTLV, CMV and Syphilis. All amniotic membrane samples are tested during processing for bacterial and fungal contamination, to ensure sterility of the product.

Characteristics[2–6]:
- Intact collagen matrix provides structure for cellular migration and proliferation
- Contains collagen types IV, V and VII which promote cellular differentiation and adhesion
- Provision of a natural biological barrier
- Non-vascular
- Non-immunogenic and low antigenicity
- Anti-inflammatory
- Anti-microbial
- Anti-scarring and anti-adhesive
- Help in pain reduction at affected site

Source of Amniotic Membranes
Amniotic membrane is obtained from donated placentas arranged through the Netcare Transplant Unit. Placentas are recovered with full informed consent from the donor.

Processing and Storage
AmnioMatrix[d)(d)™ is a processed, cryopreserved amniotic membrane tissue graft. It is dehydrated and denuded of the cuboidal epithelial layer, so no living cells are exposed to the patient.

AmnioMatrix[d)(d)™ is a thin, opaque, lightweight, gamma-sterilized, amniotic membrane tissue graft. It is dehydrated and denuded of the cuboidal epithelial layer, so no living cells are exposed to the patient.

The processing and preservation methods used by Netcells Biosciences, retains the vital cytokines and growth factors of the amniotic membrane.

Surgical Applications
AmnioMatrix[d)(d)™ and AmnioMatrix[c)(c)™ are used in a surgical setting and can be attached to the surgical site with sutures or tissue glue[8].

Ophthalmic indications - used as a substrate to replace the damaged ocular or subcutaneous tissue or as a biological dressing in[7][13][13]:

Contra-Indications
Amniotic Membrane should NOT be implanted into:
- Areas with active or latent infection;
- Patients with a history of drug reactions to Ciprofloxacin or Amphotericin B.

Amnion is intended for single patient use.

Ophthalmic indications - used as a substrate to replace the damaged ocular or subcutaneous tissue or as a biological dressing in[7][13][13]:

Indications for Corneal Surface Reconstruction
- Persistent Epithelial Defects
- Non-healing Stromal Ulcers
- Partial Limbal Stem Cell Deficiency
- Total Limbal Stem Cell Deficiency
- Bulbar Keratopathy
- Band Keratopathy
- Mooren's Ulcer

Indications for Conjunctival Surface Reconstruction
- Pterygium surgery
- Chemical Burns
- Cicatrizising Conjunctivitis
- Ocular Surface Squamous Neoplasia (OSSN)
- Leaking Blebs
- Filtering surgery
- Symbiopharon release
- Fornix Reconstruction
- Socket Reconstruction
- Entropion correction
- Scleral Melt

Processing and Packaging
AmnioMatrix[d)(d)™ is processed in a clean room environment where the amniotic membrane is mechanically separated from the chorion and placental tissue. The membrane is thoroughly washed to remove all blood and debris and enzymatically treated to remove the cuboidal epithelium.

The amniotic membrane is then spread on a polyester net with the epithelial side orientated onto the net. The membrane is dehydrated, cut to size and packaged aseptically in an inner polyethylene pouch and sealed with an outer peel pouch.

Distribution is done by transport of samples on dry ice (-80°C). Samples can be stored for up to 3 months in a standard home freezer (-20°C).

Once thawed this tissue product must be used immediately.

Note: AmnioMatrix[c)(c)™ and AmnioMatrix[d)(d)™ are used interchangeably in this context.