Sugarcane biopolymer membrane: experimental evaluation in the middle ear
Débora Lopes Bunzen Mayer • Juliana Gusmão de Araújo • Mariana de Carvalho Leal • Silvio da Silva Caldas Neto • Rafael Figueiredo Ataide • Roberto José Vieira de Mello

Figure 1. Experimental group at 8 weeks - Microphotography of the tympanic membrane, thickened at the point of contact; sugar cane biopolymer. Surrounded moderate subacute exudate; the biomaterial. BP = sugar cane biopolymer; LB = bulla lumen; CAE = external ear canal; thick arrow = inflammatory reaction; thin arrow = malleus. HE (40x magnification).

Figure 2. Signs of biomaterial absorption - Microphotography of the membrane’s structural disorganization; sugar cane biopolymer; and its partial absorption, seen in the tympanic bulla at 8 weeks; BP = sugar cane biopolymer; thick arrow = inflammatory exudate. HE (40x magnification).

Figure 3. Experimental group chronic reaction - Microphotography of a sugar cane biopolymer membrane having been engulfed by giant cells; foreign body type; BP = sugar cane biopolymer. LB = bulla lumen. Thin arrow = giant cell. HE (1000x magnification).

Figure 4. Experimental group with 12 weeks - Microphotography of the sugar cane biopolymer membrane; on the tympanic bulla without signs of inflammatory reaction. OT = temporal bone; broad arrow = sugar cane biopolymer. HE (40x magnification).
Figure 5. Experimental group with 4 weeks - Microphotography of the subacute exudate of moderate degree around the sugar cane biopolymer membrane; BP = sugar cane biopolymer. N = cell necrosis. HE (100x magnification).

Figure 6. Control Group. Microphotography of the fascia adhered to the tympanic bulla mucosa. LB = bulla lumen; OT = Temporal bone; thin arrow = fascia. HE (100x magnification).