

# DuraMatrix® Suturable

## Collagen Dura Membrane

DuraMatrix® Suturable is a resorbable collagen dura repair membrane designed with high mechanical strength. DuraMatrix® Suturable is derived from highly purified intact bovine dermis. It is indicated for use as a suturable dura membrane for the repair of the dura mater and requires only a short rehydration with sterile saline prior to implantation. It can be cut in either the dry or hydrated state, and can be placed with either side toward the brain. DuraMatrix® Suturable has a thickness similar to that of native dura and a high suture retention strength that enables it to be sutured to surrounding tissue with minimal risk of membrane tear or detachment.

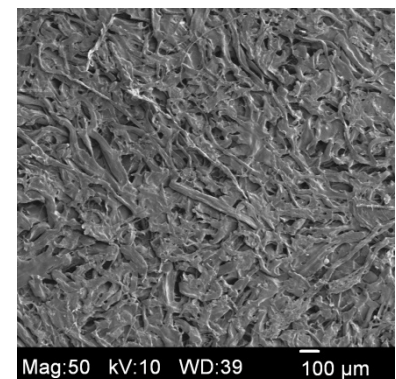


- Highly purified collagen
- Strong, yet flexible
- High suture retention strength
- Watertight material for protection against cerebrospinal fluid leakage<sup>1</sup>
- Controlled resorption for effective dural repair
- Excellent handling characteristics
- Quick hydration time

Suture Pull Out Strength		
DuraMatrix® Suturable	Durepair®	DuraMatrix®
20.40 ± 1.54 N	11.67 ± 4.12 N	4.12 ± 0.29 N

DuraMatrix® Suturable shows significantly higher suture pullout strength that permits it to be firmly anchored to surrounding tissue with minimal risk of membrane tear or detachment.

Catalog No.	Dimensions	
	Inches	cm
DMS11	1 x 1	2.5 x 2.5
DMS13	1 x 3	2.5 x 7.5
DMS22	2 x 2	5 x 5
DMS33	3 x 3	7.5 x 7.5
DMS45	4 x 5	10 x 12.5



Scanning Electron Micrograph 50x,  
Membrane Surface

<sup>1</sup> Data on file.

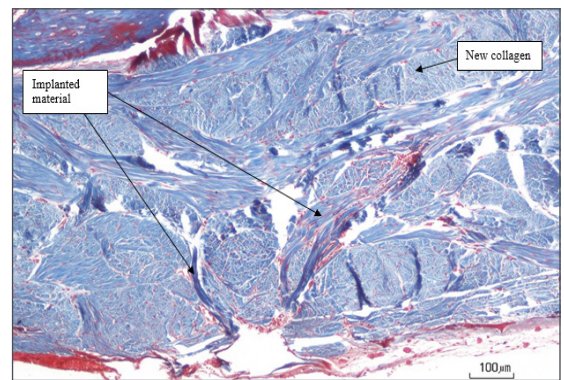
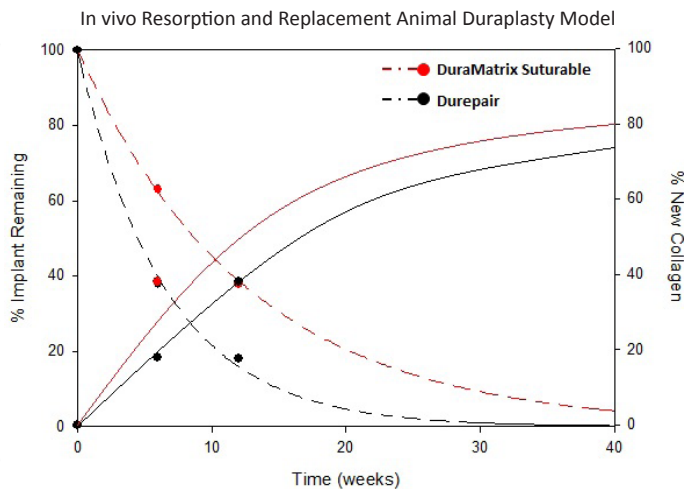
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### *In vivo Evaluation of DuraMatrix® Suturable Collagen Dura Membrane as a Dura Membrane in a Rabbit Duraplasty Model*

DuraMatrix Suturable Collagen Dura Membrane and Durepair (Medtronic) were implanted in twenty-six New Zealand White strain rabbits. A single 10 x 10 mm defect was created over the midline in the skull of each rabbit. The bone flap covering the defect was elevated and placed in saline. A critical sized defect, approximately 8 x 8 mm, was created in the dura. The dural defect was then covered by either the DuraMatrix Suturable Dura Membrane or Durepair. Both dura membranes were sutured in place. The bone flap was then placed, and the surgical site was sutured closed with non-resorbable suture.

This study demonstrated the safety and efficacy of DuraMatrix Suturable Dura Membrane as a collagen dura substitute membrane in a rabbit duraplasty model compared to Durepair. Efficacy was demonstrated macroscopically, histologically, and microscopically after 6 and 12 weeks. All of the rabbits survived the procedure and gained weight over the succeeding 12 weeks after local implantation of the implants onto a dura incision. The application of the DuraMatrix Suturable Dura Membrane and the application of the Durepair appeared to prevent CSF leakage. Microscopically, both the DuraMatrix Suturable Dura Membrane and Durepair were present at 6 and 12 weeks. Cellular responses to the implants were assessed histologically at these time points and it was determined all of the groups had similar inflammatory response, indicative of normal tissue repair response. There were no safety issues with regard to inflammatory response or negative cellular changes at the implant site. Both DuraMatrix Suturable Dura Membrane and Durepair were resorbed over time and aided in new collagen formation. As a first order approximation, the total resorption time is approximately 8.5 months for the DuraMatrix Suturable Dura Membrane. Overall, it can be concluded that DuraMatrix Suturable is a safe and effective collagen dura membrane in this duraplasty model.



12 week DuraMatrix Suturable Dura Membrane implant site at 100x magnification – Trichrome stain.

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**Collagen Matrix, Inc.**

*Science, Technology, Innovation*

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