

# Supporting Information

Makris et al. 10.1073/pnas.1414271111

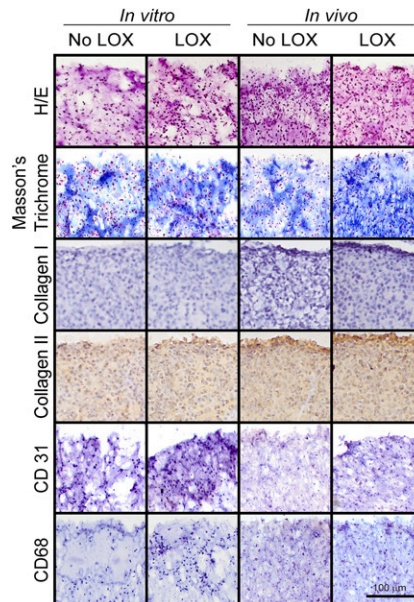


Fig. S1. Histological and immunohistochemical evaluation of the explanted engineered cartilage. H/E, hematoxylin/eosin.

Table S1. Biochemical content and biomechanical properties of neocartilage in vitro and in vivo following exogenous LOX pretreatment

Study	Group	$E_{\gamma}$ , MPa	UTS, MPa	$H_A$ , MPa	Col/WW, %	GAG/WW, %	PYR/WW, nmol/g	Fibril density, area	Fibril diameter, nm
Exogenous LOX pretreatment in vitro and in vivo	In vitro control	$0.8 \pm 0.3^C$	$0.2 \pm 0.1^C$	$0.12 \pm 0.02^B$	$1.6 \pm 0.2^{AB}$	$2.6 \pm 0.3$	$3.5 \pm 2.1^C$	$61.3 \pm 3.0^C$	$46.2 \pm 2.5^B$
	In vitro LOX	$1.2 \pm 0.2^B$	$0.2 \pm 0.1^C$	$0.14 \pm 0.04^{AB}$	$1.5 \pm 0.2^B$	$2.3 \pm 0.6$	$32.4 \pm 9.6^{AB}$	$78.2 \pm 4.2^{AB}$	$47.1 \pm 1.9^B$
	In vivo control	$1.0 \pm 0.5^B$	$0.4 \pm 0.1^B$	$0.17 \pm 0.03^A$	$1.9 \pm 0.3^A$	$2.8 \pm 0.3$	$22.8 \pm 14.5^B$	$75.1 \pm 7.1^B$	$47.7 \pm 3.2^A$
	In vivo LOX	$2.0 \pm 1.2^A$	$1.3 \pm 0.6^A$	$0.19 \pm 0.05^A$	$1.9 \pm 0.2^A$	$2.5 \pm 0.7$	$48.6 \pm 17.0^A$	$82.5 \pm 6.6^A$	$51.3 \pm 3.3^B$

Values are mean  $\pm$  SD. Groups not connected by the same letter (A, B, or C) are significantly different ( $P < 0.05$ ).  $E_{\gamma}$ , Young's modulus;  $H_A$ , aggregate modulus.