

Tranexamic acid attenuates the progression of post-traumatic osteoarthritis in mice

Appendix

Table A1. Description of histological scoring approaches

Scoring system	OARSI	Synovitis	Bone erosion	Osteophyte		
Reference	(Glasson et al., 2010)	(Lewis et al., 2011)	(Jackson et al., 2014)	(Little et al., 2009)		
Composition	-	Enlargement of synovial lining cell layer	Density of cells in synovial stroma	-	Size	Maturity
0	Normal	1-2 cell layers	Normal	None	None	None
0.5	Loss of Safranin-O without structural changes					
1	Small fibrillations without loss of cartilage	3-4 cell layers	Slightly increased	Partial thickness loss of cortical bone.	< 1 × the thickness as the adjacent cartilage	Predominantly cartilaginous
2	Vertical clefts down to the layer immediately below the superficial layer and some loss of surface lamina	5-9 cell layers	Moderately increased	Focal complete loss of cortical bone - communication with marrow cavity at one small "vascular" communication site.	1-3 × the thickness as the adjacent cartilage	Mixed cartilage and bone with active vascular invasion and endochondral ossification
3	Vertical clefts/erosion to the calcified cartilage extending to < 25% of the articular surface	≥ 10 cell layers	Greatly increased	Widespread complete loss of cortical bone - communication with marrow cavity at multiple sites or broad area loss of cortical bone.	> 3 × the thickness as the adjacent cartilage	Predominantly bone
4	Vertical clefts/erosion to the calcified cartilage extending to 25-50% of the articular surface					
5	Vertical clefts/erosion to the calcified cartilage extending to 50-75% of the articular surface					
6	Vertical clefts/erosion to the calcified cartilage extending > 75% of the articular surface					

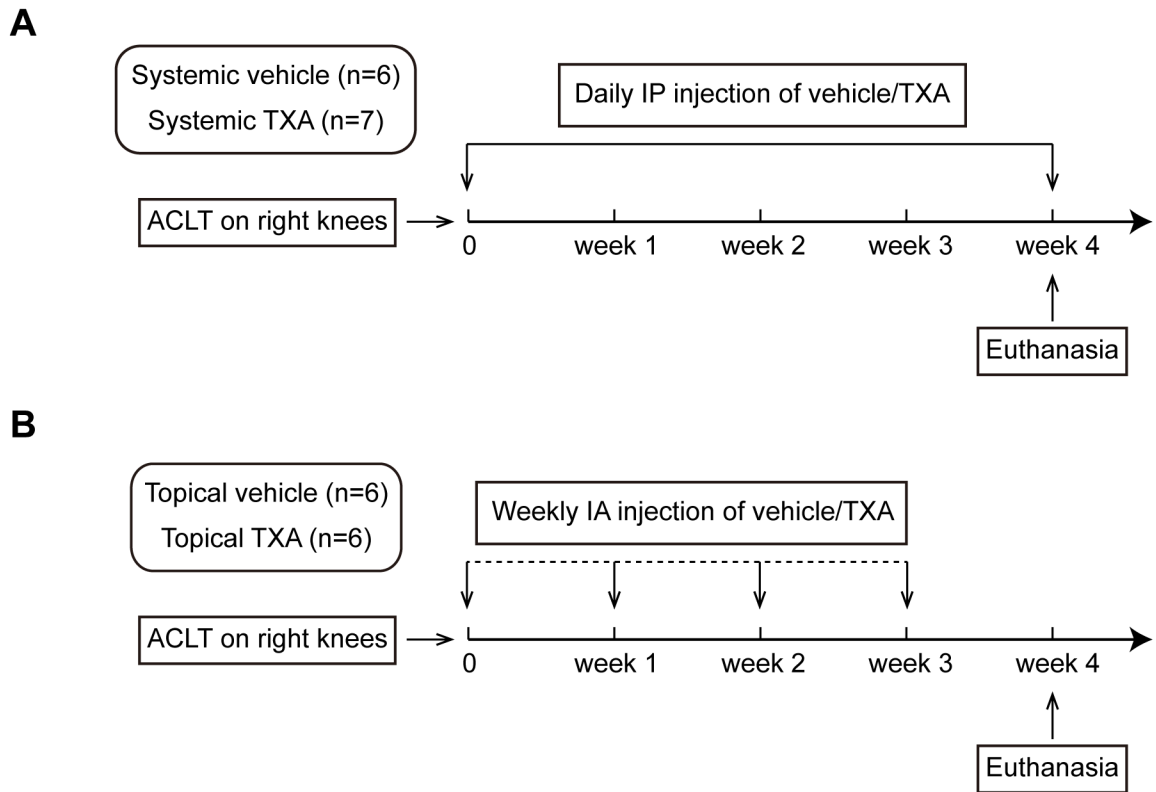


Figure A1. Schematic of the experimental protocol. (A) The experimental procedure of systemic treatment groups. **(B)** The experimental procedure of topical treatment groups. ACLT, anterior cruciate ligament transection; TXA, tranexamic acid; IP, intraperitoneal; IA, intra-articular.

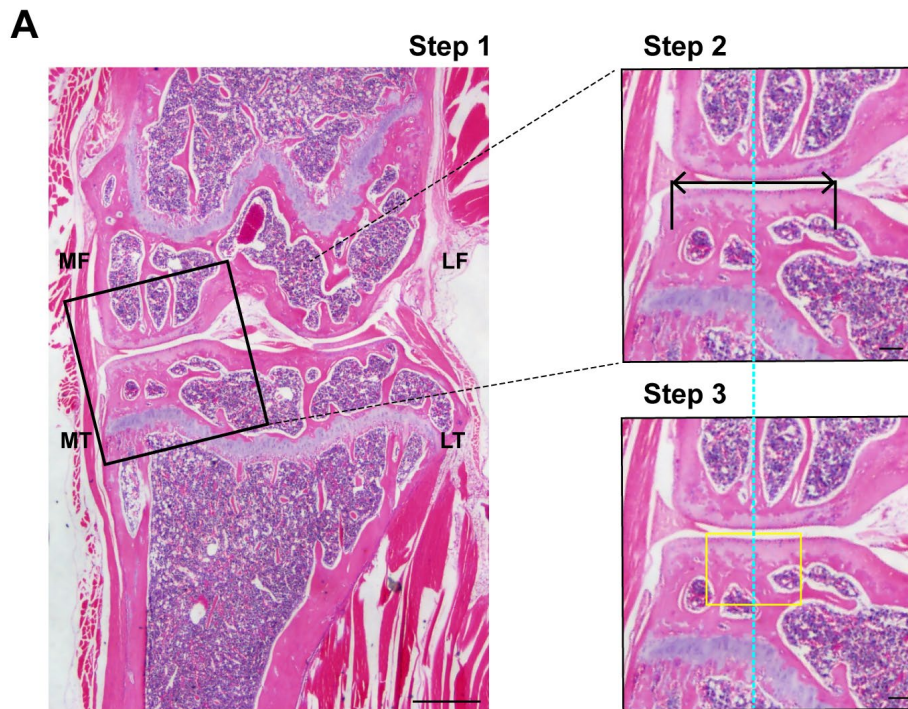


Figure A2. Diagram illustrating the measurements of cartilage thickness. A) Step1: Locating the medial joint compartment at low magnification (scale bar = 500 μ m). MT, medial tibia; MF, medial femur; LTP, lateral tibia; LFC, lateral femur; Step 2: Identifying the flat region of medial tibial plateau at higher magnification, then positioning the midline perpendicular to the tibial plateau (scale bar = 100 μ m). The double-headed black arrows indicate the flat region, and the blue dotted line represents the midline; Step 3: Defining the target area. The yellow box (400 μ m \times 300 μ m) indicates the region of interest, which is centered on the midline.

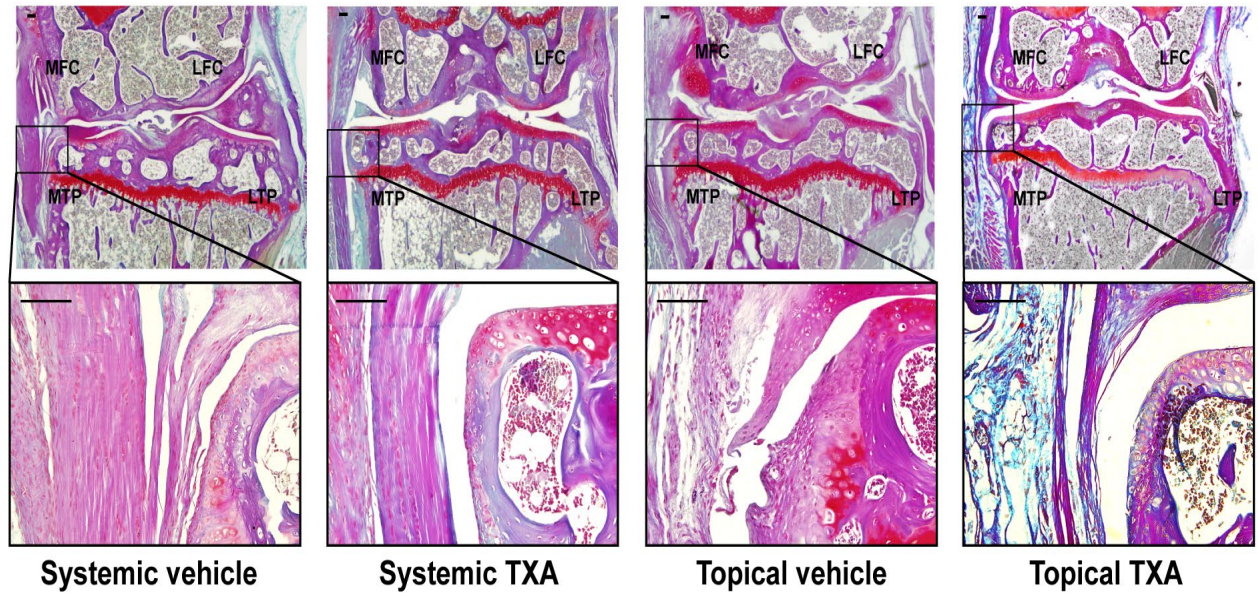


Figure A3. BIC staining showing the medial tibial synovium of the operated OA knee at 4 weeks after ACLT (scale bar = 100 μ m). MFC, medial femoral condyle; MTP, medial tibial plateau. LFC, lateral femoral condyle; LTP, lateral tibial plateau.

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