

Materials List for:

A Reliable and Reproducible Critical-Sized Segmental Femoral Defect Model in Rats Stabilized with a Custom External Fixator

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Materials

Name	Company	Catalog Number	Comments
0.9% Sterile Saline	Baxter	2F7124	Used for irrigating wound and rehydration
10% Iodine/Povidone	Carefusion	1215016	Used to prep skin
10% Neutral Buffered Formalin	VWR	89370094	Used as fixative
1mm non-threaded kirschner wire	DePuy Synthes	VW1003.15	Sterilized, used for the most proximal pin
1mm threaded kirschner wire	DePuy Synthes	VW1005.15	Sterilized, used for the 3 most distal pin slots
2x2 gauze	Covidien	4006130	Sterilized, used to prep skin and absorb blood
4-0 Vicryl Suture	Ethicon	4015304	Used to close muscle and skin layers
4-40 x 0.25", 18-8 stainless steel button head cap screws	Generic		External fixator assembly
4200 Cordless Driver	Stryker	OR-S-4200	Used to drill kirschner wires
4x4 gauze	Covidien	1219158	Sterilized, used to absorb blood
70 % Ethanol			Used to prep skin
Baytril	Bayer Healthcare LLC, Animal health division	312.10010.3	Added to water as an antibiotic
Cefazolin	Hikma Pharmaceuticals	8917156	Pre-op antibiotic
CleanCap Gaussia Luciferase mRNA (5moU)	TriLink Biotechnologies	L-7205	Modified mRNA encoding for Gaussia Luciferase, keep on ice during use
Coelenterazine native	NanoLight Technology	303	Substrate for Gaussia Luciferase, used to assess luciferase activity in vivo
Double antibiotic ointment	Johnson & Johnson consumer Inc	8975432	Applied to pin sites post-op as wound care
Dual Cut Microblade	Stryker	5400-003-410	Used to create 5mm defect in femur
Ethylenediamine Tetraacetic Acid (EDTA)	Fisher	BP120-500	Used to decalcify bone to prep for histology
Extended Release Buprenorphine	ZooPharm		Used as 3 day pain relief
Fenestrated drapes	3M	1204025	Used to establish sterile field
Handpiece cord for TPS	Stryker	OR-S-5100-4N	Used to create 5mm defect in femur
Heating pad	K&H Pet Products	121239	Rat body temperature maintenance

Hexagonal head screwdriver	Wiha	263/1/16 " X 50	External fixator tightening
Induction chamber	Generic		Anesthesia for rats
Infuse collagen sponge with recombinant human Bone Morphogenic Protein-2	Medtronic	7510200	Clinically relevant treatment used as positive control
Isoflurane	Clipper	10250	Anesthesia for rats
IVIS	Perkin Elmer	124262	Bioluminescence imaging modality
Jig	Custom		Used to place bicortical pins
Lipofectamine MessengerMAX	Fisher Scientific	LMRNA003	mRNA complexing agent that enables mRNA delivery
Sensorcaine-MPF (Bupivacane (0.25%) and Epinephrine (1:200,000))	APP Pharmaceuticals, LLC	NDC 63323-468-37	Applied to surgical site for pain relief and vasoconstriction
Sterile water	Hospira	8904653	Used as solvent for cefazolin powder
Titanium external fixator plates	Custom		Prepared in house with scrap titanium and milling machine
Total Performance System (TPS) Console	Stryker	OR-S-5100-1	Used to create 5mm defect in femur
TPS MicroSagittal Saw	Stryker	OR-S-5100-34	Used to create 5mm defect in femur
Ultrafocus Faxitron with DXA	Faxitron		High resolution radiographic imaging modality
Uniprim rat diet	Envigo	TD.06596	Medicated rat diet
Universal Handswitch for TPS	Stryker	OR-S-5100-9	Used to create 5mm defect in femur
Vetbond Tissue Adhesive	3M	1469	Skin closure