

Materials List for

High-Resolution Mapping of Protein-DNA Interactions in Mouse Stem Cell-Derived Neurons using Chromatin Immunoprecipitation-Exonuclease (ChIP-Exo)

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Materials

Name	Company	Catalog Number	Comments
Agarose, UltraPure	Invitrogen	16500	Checking Sonication (Section 4.3.6) and Gel Purification of LM-PCR Amplified DNA (Section 19.1)
Albumin, Bovine Serum (BSA), Protease Free, Heat Shock Isolation, Min. 98%	BioShop	ALB003	Blocking Solution
Antibody against Isl1	DSHB	39.3F7	Antibody incubation with beads (Section 5.6)
Bioruptor Pico	Diagenode	B01060010	Sonicated Chromatin (Section 3.3)
Bovine serum albumin (BSA), Molecular Biology Grade	New England BioLabs	B9000S	Fill-in Reaction on Beads (Section 10.2) and Denaturing, Primer Annealing and Primer Extension (Section 14.2)
Centrifuge 5424 R	Eppendorf	5404000138	Sonicated Chromatin (Section 3.5), Checking Sonication (Section 4.3.1, 4.3.3 and 4.3.4)
Centrifuge 5804 R	Eppendorf	22623508	Harvest, cross-linking and freezing cells (Section 1.3), Cell lysis (Section 2.2 and 2.3), Sonicated Chromatin (Section 3.1)
cOmplete, Mini, EDTA-free Protease Inhibitor Cocktail	Roche	4693159001	Added to all buffers, except Proteinase K buffer and ChIP Elution buffer
dATP Solution	New England BioLabs	N0440S	dA-Tailing Reaction (Section 15.1)
Deoxycholic Acid Sodium Salt	fisher scientific	BP349	Lysis Buffer 3, High Salt Wash Buffer and LiCl Wash Buffer
dNTP Mix, Molecular Biology Grade	Thermo Scientific	R0192	Fill-in Reaction on Beads (Section 10.2) and Denaturing, Primer Annealing and Primer Extension (Section 14.2)
DreamTaq Green PCR Master Mix, 2x	Thermo Scientific	K1081	Ligation-Mediated PCR (Section 18.1)

EDTA, 0.5 M, Sterile Solution, pH 8.0	BioShop	EDT111	Lysis Buffer 1-3, Checking Sonication (Section 4.1), High Salt Wash Buffer, LiCl Wash Buffer and ChIP Elution Buffer
Ethyl Alcohol Anhydrous, 100%	Commercial alcohols	P006EAAAN	Checking Sonication (Section 4.3.3)
Formaldehyde, 36.5-38%, contains 10-15% methanol	Sigma	F8775	Harvest, cross-linking and freezing cells (Section 1.1)
Glycerol, Reagent Grade, min 99.5%	BioShop	GLY002	Lysis Buffer 1
Glycine, Biotechnology Grade, min. 99%	BioShop	GLN001	Harvest, cross-linking and freezing cells (Section 1.2)
Glycogen, RNA Grade	Thermo Scientific	R0551	Checking Sonication (Section 4.3.3)
HEPES, 1 M Sterile-filtered Solution, pH 7.3	BioShop	HEP003	Lysis Buffer 1, High Salt Wash Buffer
Klenow Fragment (3->5 exo-)	New England BioLabs	M0212S	dA-Tailing Reaction (Section 15.1)
Lambda exonuclease	New England BioLabs	M0262S	Lambda Exonuclease Digestion on Beads (Section 11.2)
Ligase Enhancer	New England BioLabs	E7645S	NEBNext Ultra II DNA Library Kit. Index Adapter Ligation on Beads (Section 9.1) and Universal Adapter Ligation (Section 16.1)
Ligase Master Mix	New England BioLabs	E7645S	NEBNext Ultra II DNA Library Kit. Index Adapter Ligation on Beads (Section 9.1) and Universal Adapter Ligation (Section 16.1)
Lithium Chloride (LiCl), Reagent grade	Bioshop	LIT704	LiCl Wash Buffer
Magnetic beads for ChIP (Dynabeads Protein G)	Dynabeads Protein G (magnetic beads for ChIP)	Dynabeads Protein G (magnetic beads for ChIP)	Antibody incubation with beads (Section 5)
Magnetic beads for DNA purification (AMPure XP Beads)	Beckman Coulter	A63880	DNA Extraction (Section 13.3) and DNA Clean-up (Section 17.1)
Magnetic rack (DynaMag-2 Magnet)	Invitrogen	12321D	Used in many steps in Sections: 5 - 11, 13
MinElute Gel Extraction Kit	Qiagen	28604	Gel Purification of PCR Amplified DNA (Section 19.2)
N-Lauroylsarcosine sodium salt solution, 30% aqueous solution, ≥97.0% (HPLC)	Sigma	61747	Lysis Buffer 3
Octylphenol Ethoxylate (IGEPAL CA630)	BioShop	NON999	Lysis Buffer 1 and LiCl Wash Buffer
Phenol:Chloroform:Isoamyl Alcohol, Biotechnology Grade (25:24:1)	BioShop	PHE512	Checking Sonication (Section 4.3.1)
phi29 DNA Polymerase	New England BioLabs	M0269L	Fill-in Reaction on Beads (Section 10.2) and Denaturing, Primer Annealing and Primer Extension (Section 14.3 and 14.4)
Phosphate-Buffered Saline (PBS), 1x	Corning	21040CV	Harvest, cross-linking and freezing cells (Section 1.3) and Sonicating Chromatin (Section 3.1), Antibody incubation with beads (Section 5.1)
PowerPac Basic Power Supply	BioRad	1645050	Checking Sonication (Section 4.3.6) and Gel Purification of LM-PCR Amplified DNA (Section 19.1)
ProFlex PCR System	Applied Biosystems	ProFlex PCR System	Used in Sections: 14.2, 14.4, 15.2, 16.2 and 18.2
Protein LoBind Tube, 2.0 mL	Eppendorf	22431102	Antibody Incubation with Beads (Section 5.2) and Chromatin Immunoprecipitation (Section 6.3)

Proteinase K Solution, RNA Grade	Invitrogen	25530049	Checking Sonication (Section 4.2) and Elution and Reverse Crosslinking (Section 12.3)
Qubit 4.0 Fluorometer	Invitrogen	Q33226	Gel Purification of PCR Amplified DNA (Section 19.3)
Qubit dsDNA BR assay kit	Invitrogen	Q32853	Gel Purification of PCR Amplified DNA (Section 19.3)
Rnase A, Dnase and Protease-free	Thermo Scientific	EN0531	Checking Sonication (Section 4.3.2) and DNA Extraction (Section 13.2)
Sodium chloride (NaCl), BioReagent	Sigma	S5886	Lysis Buffer 1-3, High Salt Wash Buffer
Sodium Dodecyl Sulfate (SDS), Electrophoresis Grade	BioShop	SDS001	Checking Sonication (Section 4.1), High Salt Wash Buffer and ChIP Elution Buffer
Sonication beads and 15 mL Bioruptor Tubes	Diagenode	C01020031	Sonicating Chromatin (Section 3.1 and 3.2)
ThermoMixer F1.5	Eppendorf	5384000020	Section 4.2, 4.3.2, 4.3.5, 8.2, 9.2, 10.3, 11.2, 12.2, 12.3, 13.2 and 16.2
Trizma hydrochloride solution (Tris-HCl), BioPerformance Certified, 1 M, pH 7.4	Sigma	T2194	10 mM Tris-HCl Buffer
Trizma hydrochloride solution (Tris-HCl), BioPerformance Certified, 1 M, pH 8.0	Sigma	T2694	Lysis Buffer 2, Lysis Buffer 3, Checking Sonication (Section 4.1), LiCl Wash Buffer and ChIP Elution Buffer
Ultra II End Repair/dA-Tailing Module (24 rxn -> 120 rxn)	New England BioLabs	E7546S	End Prep Reaction mix and End Prep Enzyme mix. End-repair and dA-Tailing Reaction on Beads (Section 8.2)
VWR Mini Tube Rocker, Variable Speed	VWR	10159-752	Used in many steps in sections: 1, 2, 5, 6 and 7
2-[4-(2,4,4-trimethylpentan-2-yl)phenoxy]ethanol, Triton X-100, Reagent Grade	BioShop	TRX506	Lysis Buffer 1, Sonicating Chromatin (Section 3.4) and High Salt Wash Buffer