

Materials List for:

Generation of Aggregates of Mouse Embryonic Stem Cells that Show Symmetry Breaking, Polarization and Emergent Collective Behaviour *In Vitro*

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Materials

Name	Company	Catalog Number	Comments
2-Mercaptoethanol	Gibco/Invitrogen	31350-010	
25 cm ² Cell Culture Flask	Grenier Bio-one	690 175	
Benchtop Centrifuge	MSE	MSB020.CX1.5	
BES Buffered Saline (BBS)	Sigma-Aldrich	B2891	BBS+CaCl ₂ made by dissolving 50 mM BES Sodium Salt, 280 mM NaCl, 1.5 mM Na ₂ HPO ₄ in distilled water with 1 mM CaCl ₂ adjusted to pH 6.96 with 1 M HCl
Centrifuge tubes (15 or 50 ml)	Greiner Bio-One	118271 or 227261	
CHIR 99021 (Chi)	CSCR		Bought through the Wellcome Trust-Medical Research Council Cambridge Stem Cell Institute. Stock concentration: 10 mM in DMSO
Dissection Well (30 mm Internal Diameter)	Fisher Scientific	12678586	
ESLIF			500 ml GMEM, 5 ml Sodium Pyruvate, 5 ml Non-Essential Amino Acids, 5 ml Glutamax, 1 ml beta-mercaptoethanol, 50 ml FBS and 550 µl LIF (1,000 units).
Foetal Bovine Serum (FBS)	Biosera	FB-1090/500	
Gelatin	Sigma-Aldrich	G1890-100G	Dissolved in distilled water to a 1 % (w/v) solution, autoclaved and diluted to 0.1% in PBS (see below) for individual use.
Glasgow's Minimal Essential Medium (GMEM)	Gibco	11710-035	
GlutaMAX	Gibco	35050-038	
Glycerol	Sigma-Aldrich	G5516	
Improved Neubauer Haemocytometer	Hawksley	AS1000	
Leukaemia Inhibitory Factor (LIF), Recombinant	CSCR		Produced in house by the Wellcome Trust-Medical Research Council Cambridge Stem Cell Institute.
n-Propyl-gallate	Sigma-Aldrich	02370	
N2B27/NDiff 227	Stemcells, Inc.	SCS-SF-NB-02	http://www.stemcellsinc.com/literature_40366/Technical_Specifications_Ndiff
Non-Essential Amino Acids	Gibco/Invitrogen	11140-035	

Paraformaldehyde powder	Sigma-Aldrich	P6148	Dissolved in water to form a 8% Formaldehyde stock solution. Diluted with BBS ⁺ CaCl ₂ to give a 4% working solution
Phosphate Buffered Saline (PBS)	Sigma-Aldrich	D8662	With Calcium and Magnesium
Sodium Pyruvate	Invitrogen	11360-039	
Sterile Reservoir	STARLAB	E2310-1010	
Sterile, Non-Tissue Culture Treated, U-Bottomed 96-well Plate	Grenier Bio-one	650185	
Triton X-100	Sigma-Aldrich	X100	
Trypsin-EDTA	Gibco	25300-054	