

Selection of iPSC line donors based on cognitive ageing

sFig1: Selection of iPSC candidates based on cognitive ageing profiles in the Lothian Birth Cohort 1936. Dashed lines are added to show ±1SD from the mean for the age 11 Moray House Test (MHT) score and ±1 and 2SDs from the mean for later-life MHT score.

sFig.2: Characterization for iPSC line EDi022-A





B. Immunocytochemistry



C. PluriTest



E. hPSC Scorecard

iPSCs	Embryoid bodies				
Self- renew Ecto Meso Endo 0.29 -0.10 0.62 -0.53	Self- renew Ecto Meso Endo O O -3.06 1.41 0.76 -0.32				

D. G-Band karyotype

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sFig.3: Characterization for iPSC line EDi023-A

A. AP



B. Immunocytochemistry



C. PluriTest



E. hPSC Scorecard

iPSCs	Embryoid bodies
Self- renew Ecto Meso Endo 0.28 -0.30 0.34 -0.67	Self- renew Ecto Meso Endo C C C C -3.49 2.38 3.38 1.12

D. G-Band karyotype





sFig.4: Characterization for iPSC line EDi025-A

A. AP



B. Immunocytochemistry



C. PluriTest



E. hPSC Scorecard

iPSCs	Embryoid Bodies
Self- renew Ecto Meso Endo • • • • • • -0.01 -0.33 -0.39 -1.15	Self- renew Ecto Meso Endo • • • • • -7.29 1.49 2.19 0.57

D. G-Band karyotype

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sFig.5: Characterization for iPSC line EDi026-A

A. AP



B. Immunocytochemistry



C. Pluritest



E. hPSC Scorecard

iPSCs	Emt	oryoi	d Bod	lies	
Self- renew Ecto Meso • • • • -0.41 0.50 0.42	Endo 0 -0.83	Self- renew O -6.72	Ecto 0 1.74	Meso 0 1.19	Endo 0.69

D. G-Band karyotype





sFig.6: Characterization for iPSC line EDi027-A

A. AP



B. Immunocytochemistry



C. Pluritest



E. hPSC Scorecard

iPSCs	Embryoid Bodies
Self- renew Ecto Meso Endo Image: Organization of the second	Self- renew Ecto Meso Endo C C C -6.07 -1.72 -3.29 -1.78

D. G-Band karyotype

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sFig.7: Characterization for iPSC line EDi028-A

A. AP



B. Immunocytochemistry



C. Pluritest



E. hPSC Scorecard

iPSCs	Embryoid Bodies
Self-	Self-
renew Ecto Meso Endo	renew Ecto Meso Endo
• • • • • • •	O O O
-0.17 -0.17 0.69 -1.00	-6.84 2.14 2.10 0.69

D. G -Band karyotype

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sFig.8: Characterization for iPSC line EDi029-A

A. AP



B. Immunocytochemistry



C. Pluritest



E. hPSC Scorecard

	iPS	Cs		Emi	oryoi	d Bod	lies
Self- renew O.75	Ecto © 0.33	Meso © 0.37	Endo © -0.81	Self- renew O -5.16	Ecto 2.13	Meso O 3.91	Endo 0 1.96

D. G-Band karyotype

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sFig.9: Characterization for iPSC line EDi030-A

A. AP



B. Immunocytochemistry



C. Pluritest



E. hPSC Scorecard

iPSCs	Embryoid Bodies
Self-	Self-
renew Ecto Meso Endo • • • • • -0.30 0.07 0.54 -1.48	renew Ecto Meso Endo • • • • • -5.34 1.72 5.14 1.95

D. G-Band karyotype





sFig.10: Characterization for iPSC line EDi031-A

A. AP



B. Immunocytochemistry



C. Pluritest



E. hPSC Scorecard

iPSCs	Embryoid Bodies			
Self- renew Ecto Meso Endo • • • • • • -0.19 -0.46 -0.24 -1.30	Self- renew Ecto Meso Endo Image: Constraint of the second s			

D. G-Band karyotype

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sFig.11: Characterization for iPSC line EDi032-A

A. AP



B. Immunocytochemistry



C. Pluritest



E. hPSC Scorecard

iPSCs	Embryoid Bodies
Self-	Self-
renew Ecto Meso Endo	renew Ecto Meso Endo
O O O O	O O O
0.24 -0.06 0.08 -1.36	-6.85 1.85 2.34 0.78

D. G -Band karyotype





sFig.12: Characterization for iPSC line EDi033-A

A. AP



B. Immunocytochemistry



C. Pluritest



E. hPSC Scorecard

iPSCs	Embryoid Bodies
Self-	Self-
renew Ecto Meso Endo	renew Ecto Meso Endo
O O O O	O O O
0.23 -0.02 -0.18 -1.03	-3.58 1.77 3.93 1.85

D. G -Band karyotype





sFig.13: Characterization for iPSC line EDi034-A

A. AP



B. Immunocytochemistry



C. Pluritest



E. hPSC Scorecard

iPSCs	Embryoid Bodies
Self- renew Ecto Meso Endo 0.77 -0.25 -0.22 -1.57	Self- renew Ecto Meso Endo • • • • • • • -4.24 2.56 3.43 1.67

D. G -Band karyotype

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19 19	20 ZO	21 21	6	22		Y



sFig.14: Characterization for iPSC line EDi035-A

A. AP



B. Immunocytochemistry



C. Pluritest



E. hPSC Scorecard

iPSCs	Embryoid Bodies
Self- Ecto Meso Endo Image: Organization of the second secon	Self- Ecto Meso Endo Image: Constraint of the second

D. G -Band karyotype

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sFig.15: Characterization for iPSC line EDi036-A

A. AP



B. Immunocytochemistry



C. Pluritest



E. hPSC Scorecard

iF	iPSCs Em			Embryoid Boo			
Self- renew Ect 0.50 0.37	0 Meso	Endo © -1.03	Self- renew O -6.35	Ecto 0 1.90	Meso 0 1.61	Endo 0.66	

D. G -Band karyotype





sFig.16: Characterization for iPSC line EDi037-A

A. AP



B. Immunocytochemistry



C. Pluritest



E. hPSC Scorecard

	iPS	Cs		Emi	oryoid	d Bod	lies
Self- renew O.05	Ecto © 0.20	Meso © 0.05	Endo 0 -0.75	Self- renew O -7.38	Ecto • 1.65	Meso 0 1.80	Endo 0.87

D. G -Band karyotype

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sFig.17: Characterization for iPSC line EDi038-A

A. AP



B. Immunocytochemistry



C. Pluritest



E. hPSC Scorecard

	iPSCs			Emb	oryoi	d Boc	lies
Self- renew	Ecto	Meso O	Endo O	Self- renew	Ecto	Meso	Endo O
0.61	-0.09	0.48	-1.10	-6.22	1.41	6.00	1.73

D. G-Band karyotype





sFig.18: Characterization for iPSC line EDi039-A

A. AP



B. Immunocytochemistry



C. PluriTest



E. hPSC Scorecard

	iPSCs			Emt	oryoid	d Bod	lies
Self- renew O -0.19	Ecto © 0.14	Meso © -0.15	Endo © -1.05	Self- renew O -6.74	Ecto 2.08	Meso O 1.07	Endo 0 0.64

D. G-Band karyotype

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F. Morphology 11 days post-thaw



sFig.19: Characterization for iPSC line EDi040-A

A. AP



B. Immunocytochemistry



C. Pluritest



E. hPSC Scorecard

	iPSCs Embryoid Bodies					lies	
Self- renew	Ecto	Meso	Endo	Self- renew	Ecto	Meso O	Endo O
0.01	-0.45	0.24	-0.94	-3.18	1.57	0.98	-0.56

D. G-Band karyotype





sFig.20: Characterization for iPSC line EDi041-A

A. AP



B. Immunocytochemistry



C. Pluritest



E. hPSC Scorecard

iPSCs	Embryoid Bodies
Self- renew Ecto Meso Endo O O O 0.18 0.05 -0.32 -1.24	Self- renew Ecto Meso Endo Image: Organization of the second

D. G-Band karyotype

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sFig.21: Characterization for iPSC line EDi042-A

A. AP



B. Immunocytochemistry



C. Pluritest



E. hPSC Scorecard

iPSCs	Embryoid Bodies
Self-	Self-
renew Ecto Meso Endo	renew Ecto Meso Endo
C O O O	• • • • • • •
0.05 -0.13 0.05 -1.04	-5.15 2.62 1.07 0.22

D. G-Band karyotype

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sFig.22: Characterization for iPSC line EDi043-A

A. AP



B. Immunocytochemistry



C. Pluritest



E. hPSC Scorecard

iPSCs	Embryoid Bodies
Self-	Self-
renew Ecto Meso Endo	renew Ecto Meso Endo
O O O	O O O
-0.03 0.38 0.07 -1.23	-6.46 1.59 2.57 1.19

D. G -Band karyotype





sFig.23: Characterization for iPSC line EDi044-A

A. AP



B. Immunocytochemistry



C. Pluritest



E. hPSC Scorecard

	iPSCs			Emb	oryoid	d Bod	ies
Self- renew O -0.75	Ecto © -0.19	Meso O 0.58	Endo © -0.80	Self- renew O -6.29	Ecto • 1.65	Meso 0 3.42	Endo 0.94

D. G-Band karyotype

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sFig.24: Characterization for iPSC line EDi045-A

A. AP



B. Immunocytochemistry



C. Pluritest



E. hPSC Scorecard

iP	SCs		Embryoid Bodie			ies
Self- renew Ecto O O -0.11 0.15	Meso © 0.22	Endo © -0.81	Self- renew C	Ecto 0 2.29	Meso O 1.53	Endo • 0.62

D. G-Band karyotype





sFig.25: EBNA assay for LBC lines



sFig25: 2% Agarose Gel images showing lack of EBNA persistence in all LBC iPSC lines. 77iSMA-n5 p21 = positive control iPSC for EBNA persistence. H9 p56 = Human ESC line H9, negative control for EBNA

sFig.26: T-cell Clonality

TCRG

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sFig26: Data showing T-cell clonal lineage for LBC iPSCs. For each line, three targets (Vß +Jß1/2, Vß +Jß2 and Dß +Jß1/2) were tested for T-Cell Receptor Beta Chain (TCRB), and two targets (Vg1-8, Vg10+Jg1.3/2.3; Vg9 and Vg11+ Jg1.3/2.3) for T-Cell Receptor Gamma Chain (TCRG). A-B-C) Representative 6% TBE Gel image for TCRB. D-E) Representative 6% TBE Gel image for TCRG. F) Representative 6% TBE Gel image for Control Genes. G) Table listing each of the LBC iPSC lines, indicating positivity (+) or negativity (-) for each of the T-cell receptors. Lines were considered positive if any band was present in any of the samples.

sFig.27: Mycoplasma Testing



В

Sample	Passage	Luminescence Ratio	Mycoplasma
+ve		48.78	
control		(±25.06)	-
-ve		0.07	
control		(±0.04)	-
EDi021-A	p24	0.3	-
EDi022-A	p13	0.52	-
EDi023-A	p17	0.5	-
EDi025-A	p23	0.5	-
EDi026-A	p11	0.36	-
EDi027-A	p13	0.45	-
EDi028-A	p24	0.57	
EDi029-A	p14	0.38	-
EDi030-A	p14	0.4	-
EDi031-A	p29	0.45	-
EDi032-A	p11	0.45	-
EDi033-A			
EDi034-A	p17	0.46	-
EDi035-A	p17	0.47	-
EDi036-A	p13	0.54	-
EDi037-A	p20	0.39	-
EDi038-A			
EDi039-A			
EDi040-A	p17	0.47	-
EDi041-A	p38	0.19	-
EDi042-A	p17	0.43	-
EDi043-A			
EDi044-A	p13	0.41	-

sFig.27: Data showing the results of mycoplasma testing from iPSCs stored at two sites. A) PCR conducted by IDEXX BioAnalytics for samples provided by Cedars-Sinai Medical Center, All 24 LBC lines shown in green, positive control in red. B) Table showing results of MycoAlert Lonza LT07-318 assay conducted by Dementias Platform UK for available lines. Ratio values stated are the ratio of the luminescence signal of the kit substrate to that of the kit reagent. A ratio of 0-0.999 is negative for mycoplasma, 1-1.3 is borderline (requiring retest), and >1.3 is positive for mycoplasma. All samples tested at both sites were negative for mycoplasma.