

**Characterisation of neurons derived from a cortical human neural stem cell  
line CTX0E16**

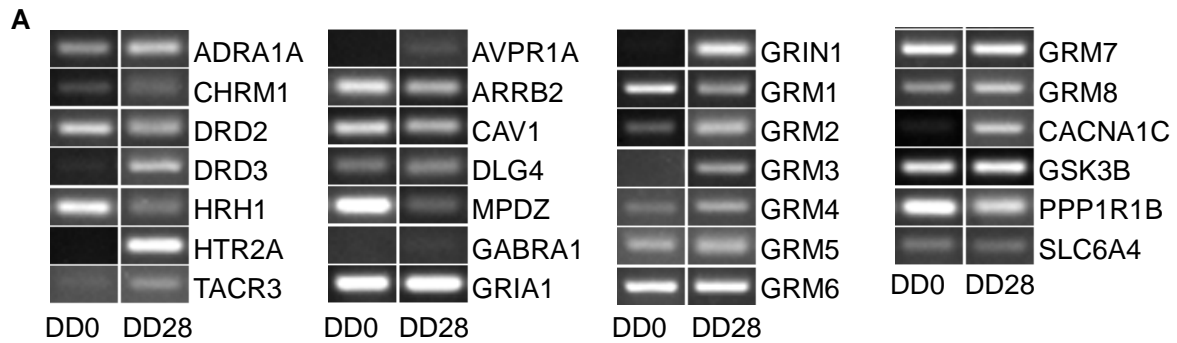
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**Supplemental Figure 1. Expression profile of undifferentiated and differentiated (DD28) CTX0E16 cells.** Undifferentiated CTX0E16 cells express a range of neurotransmitter receptors, signalling and disease associated proteins, which are upregulated during differentiation, as determined by RT-PCR. N = 3 independent experiments carried out in triplicate.



Anderson, Deans et al. Supplemental Figure 1

**Supplemental Table 1. List of Antibodies used in study.**

<b>Antibody</b>	<b>Company</b>	<b>Catalogue No.</b>	<b>Dilution</b>
chicken $\alpha$ GFP	Abcam	ab13970	1:10000
chicken $\alpha$ MAP2	Abcam	AB104896	1:1000
mouse $\alpha$ Bassoon	Assay Design	SAP7F407	1:300
mouse $\alpha$ CaMKII	Abcam	ab52476	1:500
mouse $\alpha$ GluA2	NeuroMab/Antibody Inc	L21/32	1:500
mouse $\alpha$ GluN1	NeuroMab/Antibody Inc	N308/48	1:500
mouse $\alpha$ GM130	BD Biosciences	610823	1:250
mouse $\alpha$ Nestin	Millipore	MAB5326	1:500
mouse $\alpha$ O4	Sigma	O7139	1:1000
mouse $\alpha$ PSD-95	NeuroMab/Antibody Inc	K28/43	1:1000
mouse $\alpha$ SAP97	NeuroMab/Antibody Inc	K64/15	1:250
mouse $\alpha$ SNAP-25	Synaptic-Systems	111 011	1:1000
mouse $\alpha$ VAMP2	Synaptic-Systems	104 211	1:2000
mouse $\alpha$ VGlut1	Millipore	MAB5502	1:250
mouse $\alpha$ $\beta$ III Tubulin	Millipore	MAB1637	1:1000
rabbit $\alpha$ Calbindin D-28k	SWant	CB-38a	1:20000
rabbit $\alpha$ Calretinin	SWant	7699/4	1:10000
rabbit $\alpha$ Cux1	Santa Cruz	sc-13024	1:500
rabbit $\alpha$ Doublecortin	Abcam	ab18723	1:500
rabbit $\alpha$ GABA	Sigma	A2052	1:1000
rabbit $\alpha$ GAD65/67	Millipore	AB1511	1:250
rabbit $\alpha$ Gephyrin	Millipore	AB5725	1:500
rabbit $\alpha$ GluA1	Millipore	AB1504	1:500
rabbit $\alpha$ Glutamate	Sigma	G6642	1:500
rabbit $\alpha$ KI-67	Abcam	ab15580	1:500
rabbit $\alpha$ PSD-95	Cell Signalling	25075	1:1000
rabbit $\alpha$ S100 $\beta$	Dako	M7221	1:500
rabbit $\alpha$ SOX2	Millipore	AB5603	1:100
rabbit $\alpha$ Synapsin-1	Cell Signalling	5297	1:200
rabbit $\alpha$ Tau	Dako	A0024	1:500
rabbit $\alpha$ Tbr1	Abcam	ab31940	1:200
rabbit $\alpha$ VGAT	Millipore	AB5062P	1:300
rabbit $\alpha$ VGlut2	Abcam	ab101756	1:500
rat $\alpha$ CTIP2	Abcam	ab28448	1:500

**Supplemental Table 2. List and description of Primers used in RT- and q-PCR experiments.**

<b>Gene</b>	<b>Protein</b>	<b>Sequence (5' – 3')</b>
<i>ADRA1A</i>	Adrenergic $\alpha_{1A}$ receptor (GPCR): high-affinity target for first and second generation antipsychotic drugs and may contribute to efficacy and side effect liability	GAGAAGAAAGCGG CCAAAAC AGGGCTTGAAATCA GGGAAG
<i>ARRB2</i>	$\beta$ -Arrestin 2 (scaffold and signalling protein): multifunctional scaffolding protein involved in GPCR desensitisation and G-protein independent signalling	TGTGGCTCAACTCG AACAAAG CTGAGCAGTGGGG TTATGGT
<i>AVPR1A</i>	Arginine vasopressin receptor $V_{1A}$ (GPCR): Current interest as a target for the treatment of autism and schizophrenia. Receptor target of novel compounds to treat autism	TTTGTGATCGTGAC GGCTTA TGGTGATGGTAGG GTTTTCC
<i>CACNA1C</i>	L-type, voltage-dependent calcium channel $\alpha_{1C}$ subunit: One of the major voltage-dependent $Ca^{2+}$ channel found in the CNS. Recently associated with risk of developing schizophrenia and bipolar disorder	CCTGAGAATGAGGA CGAAGG GTTTTTCGGTGTGTA CGGACT
<i>CAMK2A</i>	Calcium/Calmodulin-Dependent Protein Kinase II $\alpha$ is a serine/threonine protein kinase crucial for several aspects of plasticity at glutamatergic synapses	GAGCCATTCTCACC ACGATGCT TGGTGTTGGTGCTC TCTGAGGA
<i>CAV1</i>	Caveolin-1 (scaffold protein): Accessory protein involved in GPCR plasma membrane expression and internalisation	GCGACCCTAAACAC CTCAAC CAAATGCCGTCAAA ACTGTG
<i>CHRM1</i>	Cholinergic muscarinic $M_1$ receptor (GPCR): mixed-affinity target for range of antipsychotics. Selective compounds under investigated to treat cognitive symptoms and as possible monotherapy	GGACCCTACAGACC CCTCTT GTGTTTCATGGTGGC TAGGTG
<i>DLG4</i>	Postsynaptic density protein 95 (PSD-95): Scaffold protein important for GPCR localisation and function	TCTCCCACACACAT TCCAGA ACCCTGCCTTAGGA GAGAGC
<i>DRD2</i>	Dopamine $D_2$ receptor (GPCR): high-affinity target for first and second generation antipsychotic drugs and associated with clinical efficacy	ATCTCCTGCCCACT CCTCTT TGACAATGAAGGGC ACGTAG
<i>DRD3</i>	Dopamine $D_3$ receptor (GPCR): high-affinity target for first and second generation antipsychotic drugs, difficult to functionally distinguish from dopamine $D_2$ receptors	TGCCTATGCCTACT CCATCC GAGTGCTGCTTTTC CAGCTT
<i>EMX1</i>	Homeobox protein EMX1 is a transcription factor expressed in the telencephalon. Emx1 plays a role in specification of positional identity, the proliferation of neural stem cells and differentiation of layer-specific neuronal phenotypes, especially those found in layers V and VI	GCCTTCGAGAAGAA CCACTACG CGGTTCTGGAACCA CACCTTCA
<i>GABRA1</i>	GABA receptor subunit $\alpha_1$ (ionotropic): Ubiquitous	CCATGAGGCTGACA GTGAGA

	subunit for all GABA-A receptors – contains binding site for benzodiazepine anxiolytics	ATTTTAGTGGGCAA GCATGG
<i>GRIA2</i>	Glutamate receptor 2 (AMPA receptor subunit, ionotropic): allosteric modulators of this receptor currently under investigation as possible adjunct treatment for cognitive deficits and monotherapy	TTCAGATGAGACCC GACCTC GCACAGCTTGCAGT GTTGAT
<i>GRIN1</i>	Glutamate receptor, N-methyl D-aspartate (NMDA) 1 (NR1, ionotropic): allosteric modulators currently in phase II clinical trial for the treatment of cognitive and negative symptoms	AGATGGCTCTGTCC GTGTG GTGGGAGTGAAGT GGTCGTT
<i>GRM1</i>	Metabotropic glutamate receptors 1 (mGluR1) Metabotropic glutamate receptors 1-8 (mGluR <sub>1-8</sub> , GPCRs): several of these are targeted by compounds currently in clinical and preclinical development for the treatment of schizophrenia – particularly mGluR <sub>2</sub> , mGluR <sub>3</sub> and mGluR <sub>5</sub>	CTAGCTGGCATCTT CCTTGG  TGAGGCAATGATCA CCTGAG
<i>GRM2</i>	Metabotropic glutamate receptors 2 (mGluR2)	CCGCAGAAGAACGT GGTTAG GCAAACAGTGGGG ACAAACT
<i>GRM3</i>	Metabotropic glutamate receptors 3 (mGluR3)	GGTCTGATCCTGGT GCAAAT TTTGAAGGCGTACA CAGTGC
<i>GRM4</i>	Metabotropic glutamate receptors 4 (mGluR4)	TCTGTCTCCAGCCC TGTCTT ACAGGAAAGAAAAC GGCAGA
<i>GRM5</i>	Metabotropic glutamate receptors 5 (mGluR5)	ATCAGCGAGCTCAA CTCCAT CTGGATCTCTTTGG GGATCA
<i>GRM6</i>	Metabotropic glutamate receptors 6 (mGluR6)	ATTGGGCAGTGTGG AAGAAC CCCAGTTCCTCAGC TCACTC
<i>GRM7</i>	Metabotropic glutamate receptors 7 (mGluR7)	CGGCGCTATGACTT CTTCTC CTGCCTCTTTGGAA ATCTGC
<i>GRM8</i>	Metabotropic glutamate receptors 8 (mGluR8)	GAGGATATTGGAAG CAGCAA TCAATTGATGCTCG TTTGG
<i>GSK3B</i>	Glycogen synthase kinase 3 $\beta$ (GSK-3 $\beta$ ): Important signalling node for neuronal activity and several neuropsychiatric drugs. Aberrant function has been linked to the schizophrenia	GAGACCGTGGACA GACCAAT ACTGGTGGTTTTTC CTGTGC
<i>HRH1</i>	Histamine H <sub>1</sub> receptor (GPCR): high-affinity target for first and second generation antipsychotic drugs and associated with weight gain and metabolic side effects	CACACTGAACCCCC TCATCT ATTTTGTTGCATCC CCTCAG

<i>HTR2A</i>	5-HT <sub>2A</sub> receptor (GPCR): high-affinity target for second and some first generation antipsychotic drugs, and has been associated with atypicality	CAGAATCCCATCCA CCACA TCCTGTAGCCCAA GACTGG
<i>MPDZ</i>	Multiple PDZ domain protein (MUPP1): Scaffold protein important for GPCR localisation and function	CCATAGTTTCCCGT TCTCCA CAATCGTTTCCATG TGTTGC
<i>PPP1R1B</i>	Protein phosphatase 1 regulatory subunit 1B (PPP1R1B), aka. dopamine- and cAMP-regulated neuronal phosphoprotein (DARPP-32)	CCCTAAGATCTGGG GAAAGG CTGGTAGAAGCCG GTGAGAG
<i>SLC6A4</i>	5-HT transporter (SERT): Primary target of selective serotonin reuptake inhibitor (SSRI) antidepressants	TGCCACCTTCCTGT CTCTCT GCCAAGCCATGGT GACTAAT
<i>TACR3</i>	Tachykinin 3 receptor (NK <sub>3</sub> , GPCR): target of compounds currently in phase II clinical trial for the treatment of schizophrenia	AGGCCGTA CTCTCT GCTTTG TGATGAGCAATGGG AAACAG
<i>TBR1</i>	T-box, brain, 1 is a transcription factor important in vertebrate embryo development. This gene is also known by several other names: T-Brain 1, TBR-1, TES-56, and MGC141978. TBR1 interacts with various genes and proteins in order to regulate cortical development, specifically within layer VI of the developing six-layered human cortex.	TAACAATGGGCAGA TGGTGG AGGGAAAGTGAAC GTCTGCA
<i>GAPDH</i>	Used as housekeeping gene in q-PCR	CCTGACCTGCCGTC TAGAAA ACCTGGTGCTCAGT GTAGCC
<i>HPRT1</i>	Used as housekeeping gene in q-PCR	TGACACTGGCAAAA CAATGCA GGTCCTTTTCACCA GCAAGCT
<i>RPL13A</i>	Used as housekeeping gene in q-PCR	CCTGGAGGAGAAG AGGAAAGAGA TTGAGGACCTCTGT GTATTTGTCAA

List of forward (F) and reverse (R) primer sequences used in gene expression studies; forward primer is described first. A brief description of the encoding protein and potential relevance for disease biology is also given.