

Signs of early cellular dysfunction in multiple system atrophy

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SUPPLEMENTARY DATA

Case	Diagnostic certainty	Age at skin biopsy	Sex	Age at symptom onset	UMSARS	Hoehn & Yahr Parkinson's Stage	Diagnosis
MSA1	Probable MSA	54	F	46	59	4	MSA-P
MSA2	Probable MSA	54	M	52	31	3	MSA-P
Control	-	53	F	-	-	-	-

Supplementary table 1. Demographic data

Human gene name	TaqMan gene expression assay
CDH1	Hs01023895_m1
GAPDH	Hs02786624_g1
KLF4	Hs00358836_m1
LIN28A	Hs00702808_s1
MYC	Hs00153408_m1
NANOG	Hs02387400_g1
POU5F1 (OCT4)	Hs04260367_gH
SEV	Mr04269880_mr
SEV-CMYC	Mr04269876_mr
SEV-KOS	Mr04421257_mr
SEV-KLF4	Mr04421256_mr
SOX2	Hs01053049_s1
SNCA	Hs00240906_m1

Supplementary table 2: TaqMan Gene Expression Assays used in the study.

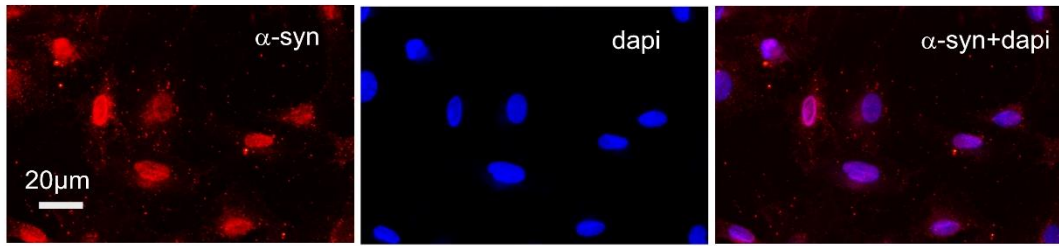
Name	Produced in	Company	Cat No	Dilution
Oct3/4	mouse	Santa Cruz	Sc-5279	1:100
Nanog	rabbit	Abcam	Ab109250	1:200
Sox 2	rabbit	Abcam	Ab97959	1:200
Pax6	mouse	Santa Cruz	Sc-32766	1:100
Gata4	mouse	Santa Cruz	Sc-25310	1:100
SM22 α	rabbit	Abcam	Ab14106	1:200
hVE Cadherin	goat	R&D	AF938	1:200
Anti SeV	rabbit	MBL International Corporation	PD029	1:100
CD56 (NCAM-1)	mouse	Invitrogen	MA106801	1:100
Olig-2	rabbit	Millipore	AB9610	1:500
β -III-tubulin	rabbit	Abcam	Ab18207	1:1000
GFAP	rat	Thermo Fisher	13-0300	1:500
Cleaved Caspase 3	rabbit	Cell Signaling	9661	1:100
Tom20	rabbit	Abcam	Ab186735	1:250
Alpha-synuclein	mouse	Genetex	GTX21904	1:200
Phospho S129 alpha-synuclein	rabbit	Abcam	Ab51253	1:1000
Alexa 488 anti- mouse IgG	goat	Thermo Fisher Scientific	A11029	1:800
Alexa 488 anti- goat IgG	donkey	Thermo Fisher Scientific	A11055	1:800
Alexa 488 anti- rabbit IgG	goat	Thermo Fisher Scientific	A11034	1:800

Alexa 594 anti-mouse IgG	goat	Thermo Fisher Scientific	A11005	1:800
Alexa 594 anti-rabbit IgG	goat	Thermo Fisher Scientific	A11037	1:800

Supplementary table 3: Antibodies used in ICC

Name	Company	Cat No	Dilution
Anti-PSA NCAM-APC	Miltenyi	130-093-273	1:11
REA Control (S)-APC	Miltenyi	130-113-434	1:11

Supplementary table 4: Antibodies used for FACS.



Supplementary Figure 1. Nuclear translocation of α -synuclein after exposure of NCAM-positive NPCs derived from a healthy control to oxidative stress (luperox) supporting previous observations by Pinho et al 2019 [44].