

Corrigendum: an overview of MicroRNAs as biomarkers of ALS

Article (Published Version)

Joilin, Greig, Leigh, P Nigel, Newbury, Sarah F and Hafezparast, Majid (2019) Corrigendum: an overview of MicroRNAs as biomarkers of ALS. *Frontiers in Neurology*, 10. a1129. ISSN 1664-2295

This version is available from Sussex Research Online: <http://sro.sussex.ac.uk/id/eprint/91174/>

This document is made available in accordance with publisher policies and may differ from the published version or from the version of record. If you wish to cite this item you are advised to consult the publisher's version. Please see the URL above for details on accessing the published version.

Copyright and reuse:

Sussex Research Online is a digital repository of the research output of the University.

Copyright and all moral rights to the version of the paper presented here belong to the individual author(s) and/or other copyright owners. To the extent reasonable and practicable, the material made available in SRO has been checked for eligibility before being made available.

Copies of full text items generally can be reproduced, displayed or performed and given to third parties in any format or medium for personal research or study, educational, or not-for-profit purposes without prior permission or charge, provided that the authors, title and full bibliographic details are credited, a hyperlink and/or URL is given for the original metadata page and the content is not changed in any way.



Corrigendum: An Overview of MicroRNAs as Biomarkers of ALS

OPEN ACCESS

Approved by:

Frontiers Editorial Office,
Frontiers Media SA, Switzerland

*Correspondence:

Greig Joilin
g.joilin@sussex.ac.uk
Majid Hafezparast
m.hafezparast@sussex.ac.uk

Specialty section:

This article was submitted to
Neuromuscular Diseases,
a section of the journal
Frontiers in Neurology

Received: 07 October 2019

Accepted: 09 October 2019

Published: 23 October 2019

Citation:

Joilin G, Leigh PN, Newbury SF and
Hafezparast M (2019) Corrigendum:
An Overview of MicroRNAs as
Biomarkers of ALS.
Front. Neurol. 10:1129.
doi: 10.3389/fneur.2019.01129

Greig Joilin^{1*}, P. Nigel Leigh², Sarah F. Newbury² and Majid Hafezparast^{1*}

¹ School of Life Sciences, University of Sussex, Brighton, United Kingdom, ² Brighton and Sussex Medical School, University of Sussex, Brighton, United Kingdom

Keywords: amyotrophic lateral sclerosis, motor neuron disease, biomarkers, non-coding RNA, microRNA

A Corrigendum on

An Overview of MicroRNAs as Biomarkers of ALS

by Joilin, G., Leigh, P. N., Newbury, S. F., and Hafezparast, M. (2019). *Front. Neurol.* 10:186.
doi: 10.3389/fneur.2019.00186

In the original article, there was a mistake in **Table 1** as published. Some of the miRNAs listed in the table were incorrectly placed in the wrong column and/or row. The corrected **Table 1** appears below.

The authors apologize for this error and state that this does not change the scientific conclusions of the article in any way. The original article has been updated.

Copyright © 2019 Joilin, Leigh, Newbury and Hafezparast. This is an open-access article distributed under the terms of the Creative Commons Attribution License (CC BY). The use, distribution or reproduction in other forums is permitted, provided the original author(s) and the copyright owner(s) are credited and that the original publication in this journal is cited, in accordance with accepted academic practice. No use, distribution or reproduction is permitted which does not comply with these terms.

TABLE 1 | Circulating miRNA-based biomarkers found to be differentially expressed in biofluids.

	Authors	ALS type	n	Validated changes		Controls	RNA extraction	Profiling technique	RT-qPCR validation	RT-qPCR Normalization
				Increase	Decrease					
Serum	Freischmidt et al. (4)	Sporadic	22	–	<u>MIR132-5p</u> <u>MIR132-3p</u> MIR143-5p MIR143-3p <u>LET7B-5p</u>	Age-matched healthy controls	miRNeasy Mini	–	Ncode VILO EXPRESS SYBR GreenER	Spiked in cel-MIR39-3p
	De Felice et al. (5)	Sporadic	72	MIR338-3p	–	Age-matched healthy controls	Trizol	–	miScript RT-qPCR	LET7A
	Freischmidt et al. (6)	Familial	22	–	<u>MIR1825</u> MIR1915-3p MIR3665 MIR4530 MIR4745-5p	Age-matched healthy controls	QIAzol and miRNeasy Mini	Affymetrix GeneChip 3.0 Array	miScript RT-qPCR	Spiked in cel-MIR39-3p
		Sporadic	14	–	MIR3665 MIR4530 MIR4745-5p					
	Toivonen et al. (7)	–	12	MIR106B <u>MIR206</u>	–	Age-matched healthy controls	Norgen Total RNA	Affymetrix GeneChip 2.0 Array	TaqMan miRNA RT-qPCR	Spiked in cel-MIR39-3p
	Freischmidt et al. (8)	Sporadic	18	–	MIR1234-3p <u>MIR1825</u>	Age-matched healthy controls/ Alzheimer's/ Huntington's	QIAzol and miRNeasy Mini	Affymetrix GeneChip 3.0 Array	miScript RT-qPCR	Spiked in cel-MIR39-3p
	Waller et al. (13)	Sporadic	50	MIR143-3p <u>MIR206</u>	MIR374B-5p	Age-matched healthy controls/ disease mimics	Norgen Circulating Nucleic Acid Isolation	TaqMan Low Density RT-qPCR arrays	miScript RT-qPCR	MIR17-5p MIR24 MIR223-3p
	Matamala et al. (16)	Sporadic	20	MIR142-3p	MIR1249-3p	Age-matched healthy controls	Trizol LS and miRNeasy Serum/ Plasma	Illumina TruSeq Small RNA on Illumina MiSeq	TaqMan miRNA RT-qPCR	Spiked in cel-MIR39-3p

(Continued)

TABLE 1 | Continued

	Authors	ALS type	n	Validated changes		Controls	RNA extraction	Profiling technique	RT-qPCR validation	RT-qPCR Normalization
				Increase	Decrease					
	Raheja et al. (17)	Sporadic/ Familial	23	Screen only	Screen only	Healthy controls	miRcury	miRNA LNA RT-qPCR arrays	–	–
	Xu et al. (18)	–	10	–	MIR27A-3p	Healthy controls	Trizol or miRNeasy Micro	–	miDETECT A Track miRNA RT-qPCR or TaqMan miRNA RT-qPCR	MIR16-5p
Plasma	Takahashi et al. (9)	Sporadic	48	MIR4649-5p	MIR4299	Age-matched healthy controls	miRNeasy Serum/Plasma	3D-Gene Human miRNA oligo chip	miScript RT-qPCR	MIR4516
	de Andrade et al. (11)	Sporadic	39	MIR424 MIR206	–	Aged match healthy control	miRvana PARIS	Affymetrix GeneChip array (on muscle)	TaqMan miRNA RT-qPCR	MIR16-5p
	Sheinerman et al. (12)	–	50	MIR206/MIR338-3p MIR9/MIR129-3p MIR335-5p/MIR338-3p	–	Age-matched healthy controls	Trizol and Ambion Glass fiber Columns	Literature search	TaqMan miRNA RT-qPCR	–
Cerebrospinal Fluid	Freischmidt et al. (4)	Sporadic	22	MIR143-5p MIR574-5p	MIR132-5p MIR132-3p MIR143-3p	Age-matched healthy controls	miRNeasy Mini	–	Ncode VILO EXPRESS SYBR GreenER	Spiked in cel-MIR39-3p
	De Felice et al. (5)	Sporadic	72	MIR338-3p	–	Age-matched healthy controls	Trizol	–	miScript RT-qPCR	MIR24
	Benigni et al. (10)	Sporadic	24	MIR181A-5p	LET7A-5p LET7B-5p LET7F-5p MIR15b-5p MIR21-5p MIR195-5p MIR148A-3p	Age-matched healthy controls	miRNeasy Mini	Human miFinder 384HC miRNA PCR array	SYBR Green RT-qPCR	Spiked in cel-MIR39-3p MIR608 MIR328-3p
	Waller et al. (14)	Sporadic	32	Screen only	Screen only	Age-matched healthy controls/disease mimics	miRvana PARIS	Illumina TruSeq Small RNA on Illumina HiScanSq	miScript II RT-qPCR	Spiked in cel-MIR39-3p MIR30A-5p

(Continued)

TABLE 1 | Continued

	Authors	ALS type	n	Validated changes		Controls	RNA extraction	Profiling technique	RT-qPCR validation	RT-qPCR Normalization
				Increase	Decrease					
Whole Blood	Liguori et al. (15)	Sporadic	56	-	<u>LET7A-5p</u> <u>LET7D-5p</u> <u>LET7F-5p</u> <u>LET7G-5p</u> <u>LET7I-5p</u> <u>MIR15A-5p</u> <u>MIR15B-5p</u> <u>MIR151A-5p</u> <u>MIR151B</u> <u>MIR16-5p</u> <u>MIR22-3p</u> <u>MIR23A-3p</u> <u>MIR26A-5p</u> <u>MIR26B-5p</u> <u>MIR27B-3p</u> <u>MIR28-3p</u> <u>MIR30B-5p</u> <u>MIR30C-5p</u> <u>MIR93-5p</u> <u>MIR103A-3p</u> MIR106B-3p <u>MIR128-3p</u> <u>MIR130A-3p</u> <u>MIR130B-3p</u> <u>MIR144-5p</u> <u>MIR148A-3p</u> <u>MIR148B-3p</u> <u>MIR182-5p</u> <u>MIR183-5p</u> <u>MIR186-5p</u> <u>MIR221-3p</u> <u>MIR223-3p</u> <u>MIR342-3p</u> <u>MIR425-5p</u> <u>MIR451A</u> <u>MIR532-5p</u> <u>MIR550A-3p</u> <u>MIR584-5p</u>	Age-matched healthy controls	PAXgene Blood RNA	Illumina TruSeq Small RNA on Illumina HiSeq2500	TaqMan Advanced miRNA RT-qPCR	MIR484

Those miRNA underlined show consistent directional changes between control and ALS cases while those in bold show contrasting directional changes between control and ALS cases.