Reference Library
Exosomes in Alzheimer's Disease

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1. *Exosomes as possible spread factor and potential biomarkers in Alzheimer's disease: current concepts*, Pluta et. al 2018

Table 1. Potential miRNAs biomarkers for Alzheimer's disease clinical diagnosis .

Source	Upregulated miRNA	Downregulated miRNA	Ref.
Blood	miR-26b-3p, miR-28–3p, miR-30c-5p, miR-30d-5p, miR-148b-5p, miR-151a-3p, miR-186–5p, miR-425–5p, miR-550a-5p, miR-1468, miR-4781–3p, miR-5001–3p, miR-6513–3p	let-7a-5p, let-7e-5p, let-7f-5p, let-7g-5p, miR-15a-5p, miR-17–3p, miR-29b-3p, miR-98–5p, miR-144–5p, miR-148a-3p, miR-502–3p, miR-660–5p, miR-1294, miR-3200–3p	[58]
Serum	miR-3158-3p, miR-27a-3p, miR-26b-3p, miR-151b	miR-36, miR-98-5p, miR-885-5p, miR-485-5p, miR-483-3p, miR-342-3p, miR-30e-5p, miR-191-5p, let-7g-5p, let-7d-5p	[59]
Serum exosomes	miR-361-5p, miR-30e-5p, miR-93-5p, miR-15a-5p, miR-143-3p, miR-335-5p, miR-106b-5p, miR-101-3p, miR-425-5p, miR-106a-5p, miR-18b-5p, miR-3065-5p, miR-20a-5p, miR-582-5p	miR-1306-5p, miR-342-3p, miR-15b-3p	[62]
Plasma exosomes	miR-548at-5p, miR-138-5p, miR-5001-3p, miR-659-5p	miR-185-5p, miR-342-3p, miR-141-3p, miR-342-5p, miR-23b-3p, miR-338-3p, miR-3613-3p	[60]
CSF	miR-146a, miR-100, miR-505, miR-4467, miR-766, miR-3622b-3p, miR-296	miR-449, miR-1274a, miR-4674, miR-335, miR-375, miR-708, miR-219, miR-103	[61]

CSF: Cerebrospinal fluid.

2. Jiang L, Dong H, Cao H, Ji X, Luan S, Liu J. Exosomes in Pathogenesis, Diagnosis, and Treatment of Alzheimer's Disease. Med Sci Monit. 2019 May 6;25:3329-3335. doi: 10.12659/MSM.914027. Review. PubMed PMID: 31056537; PubMed Central PMCID: PMC6515980.

"Hao et al. co-cultured injured cortical neurons with human adipose-derived mesenchymal stem cells (ADSCs) using a semi-porous membrane, and the results demonstrated that AMSCs-conditioned medium, enriched with exosomes, mediates direct neuroprotection by inhibiting neuronal cell apoptosis, promoting nerve re-generation and repair, and restoring bioenergy following energy depletion caused by glutamate excitotoxicity [76]. In another study, exosomes were extracted from mesenchymal stromal cell (MSC)-conditioned medium and injected into a rat stroke model; it was found that exosomes could reduce nerve cell injury [77]. "

3. Cai ZY, Xiao M, Quazi SH, Ke ZY. Exosomes: a novel therapeutic target for Alzheimer's disease? Neural Regen Res. 2018 May;13(5):930-935. doi: 10.4103/1673-5374.232490. PubMed PMID: 29863025; PubMed Central PMCID: PMC5998631.

"Several studies have suggested that exosomes derived from multipluripotent mesenchymal stromal cells play a neuroprotective role by promoting functional recovery (Xin et al., 2014), neurovascular plasticity (Xin et al., 2013a, b; Zhang et al., 2015), and repairing injured tissue in traumatic brain injury and neurodegenerative disorders."

4. ***Watson LS, Hamlett ED, Stone TD, Sims-Robinson C. Neuronally derived extracellular vesicles: an emerging tool for understanding Alzheimer's disease. Mol Neurodegener. 2019;14(1):22. Published 2019 Jun 10. doi:10.1186/s13024-019-0317-5***

"Furthermore, EVs introduced into the brain of an AD transgenic mouse can benefit the clearance of toxic oligomers in vivo [87, 88], indicating the role of EVs in the interaction with amyloid plaques, which are known to have prion receptor proteins [13, 89]. Yuyama and col- leagues showed that the introduction of naïve EVs into the brain of AD transgenic mouse models helped in the clearance of toxic fibrils [88, 90]."