

Circulating exosomes have distinct RNA profile in MS

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(HealthDay)—Circulating exosomes have a distinct RNA profile in

relapsing-remitting multiple sclerosis (RRMS), according to a study published online April 15 in the *Annals of Neurology*.

Igor Selmaj, M.D., from the Medical University of Lodz in Poland, and colleagues used next generation sequencing to define the global RNA profile of serum exosomes in 19 RRMS patients and 10 healthy controls (HCs). Per sample, they analyzed 5,000,000 reads and over 50,000 transcripts, including a detailed analysis of microRNA (miRNA) differentially expressed in RRMS. The discovery data set was validated using data from an independent cohort of 63 RRMS patients (33 in relapse and 30 in remission) and 32 HCs.

The researchers found that in RRMS patients versus HCs, 15 different classes of transcripts detected four circulating exosomal sequences within the miRNA category that were differentially expressed: hsa-miR-122-5p, hsa-miR-196b-5p, hsa-miR-301a-3p, and hsa-miR-532-5p. During relapse there was a significant decrease of serum exosomal expression of these miRNA in RRMS. In [patients](#) with a gadolinium enhancement on brain magnetic resonance imaging, these miRNAs were also decreased. In RRMS, in vitro secretion of these miRNAs by peripheral blood mononuclear cells was significantly impaired.

"Since putative targets for these miRNA include the signal transducer and activator of transcription 3 and the cell cycle regulator aryl hydrocarbon receptor the data suggest a disturbed cell-to-cell communication in this disease," the authors write.

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More information: [Abstract](#)
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