

## miRNAs in Autoimmune Diseases Contributors or Controllers?

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**Even though microRNAs (miRNAs) have been linked to autoimmune diseases, the diagnostic and therapeutic value of miRNAs remains restricted. There is currently no way to determine the function and importance of each miRNA, which makes it impossible to develop targeted medicines and diagnostics for particular diseases. There has been no discovery of a specific miRNA-targeting diagnostic or therapeutic intervention to date.**

**Keywords:** miRNAs; Autoimmune Diseases; Diagnostics; Therapeutic Intervention; Prognosis

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miRNAs are critical regulators in the body. Its widespread presence indicates that it possesses broad-spectrum regulatory functions. Whether in a healthy or pathological condition, the number of miRNAs can partially represent an individual's underlying health status and the state of potential pathological changes of diseases. Thousands of miRNAs have been identified thus far and have been implicated in physiological and pathological changes in the body (1). The great majority of these miRNAs are not pathologically specific. When employed as a diagnostic reference standard for a specific disease, its specificity is insufficient, and its high sensitivity frequently results in a high diagnostic positive rate (2). Additionally, these seemingly promising miRNAs are challenging to target for specific disease treatment, owing to their limited specificity (3). Naturally, the efficacy of such an intervention would be minimal, and the resulting side effects would be severe. Thus, this is the last thing we want to see during an intervention. This also explains why no specific miRNA-targeting interventional medication has been discovered to date.

Although numerous miRNAs have been implicated in autoimmune disorders (4), their diagnostic and therapeutic utility

is quite limited. As a result, it is impossible for us to conclude that a particular miRNA has the potential for diagnosis and intervention in autoimmune disorders based on its level. Additionally, the function and role of each miRNA are unknown totally. This precludes the implementation of focused therapies and diagnostics. Furthermore, despite the fact that a large number of miRNAs have been found, the research of their true functional significance remains a long way off. As a result, it is still in its infancy. Thus, in the case of a particular miRNA, it is only after extensive functional studies have been conducted that it can be determined whether it may be used as a diagnostic reference or an intervention target for a particular disease.

For example, studies have discovered that numerous miRNAs may be involved in the occurrence and progression of rheumatoid arthritis (RA) (5, 6), although the evidence is still unclear that miRNAs have the potential to diagnose and intervene in RA. As a result, it is hard to determine whether the source is one of the contributors or one of the controllers. As a result, research on RA-associated miRNAs should be considered objectively. It is yet unknown which miRNA can be used to diagnose and treat RA. ■

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