Role of X-chromosome encoded mirnas in autoimmunity: Suppressing the suppressor and female predisposition

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Role of skewed X inactivation may in part explain the high prevalence of autoimmune diseases in women. Human X chromosome encodes approximately 7% of the total microRNAs identified. Recent studies have implicated overexpression of X-linked miRNA in women affected by the autoimmune diseases. Potential biological targets of them include critically important genes such as FOXP3, CTLA-4, PDCD1 and, members of CBL and SOCS family ubiquitin ligases, which play an important role in the immune suppressive mechanisms and maintenance of tolerance. X-linked miRNA mediated post transcriptional suppression of immunosuppressive genes is an open area of study with potential to better understand why women develop many autoimmune disorders more often than men.

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