

## Accepted Manuscript

MicroRNA profiling of second trimester maternal plasma shows upregulation of miR-195-5p in patients with gestational diabetes

Aili Tagoma, Kristi Alnek, Anne Kirss, Raivo Uiibo, Kadri Haller-Kikkatalo



PII: S0378-1119(18)30642-5  
DOI: [doi:10.1016/j.gene.2018.06.004](https://doi.org/10.1016/j.gene.2018.06.004)  
Reference: GENE 42937  
To appear in: *Gene*  
Received date: 5 December 2017  
Revised date: 2 April 2018  
Accepted date: 3 June 2018

Please cite this article as: Aili Tagoma, Kristi Alnek, Anne Kirss, Raivo Uiibo, Kadri Haller-Kikkatalo , MicroRNA profiling of second trimester maternal plasma shows upregulation of miR-195-5p in patients with gestational diabetes. *Gene* (2017), doi:[10.1016/j.gene.2018.06.004](https://doi.org/10.1016/j.gene.2018.06.004)

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

## MicroRNA profiling of second trimester maternal plasma shows upregulation of miR-195-5p in patients with gestational diabetes

### Authors

Aili Tagoma<sup>a</sup>, Kristi Alnek<sup>a</sup>, Anne Kirss<sup>b</sup>, Raivo Uibo<sup>a</sup>, Kadri Haller-Kikkatalo<sup>a</sup>

<sup>a</sup> Department of Immunology, Institute of Biomedicine and Translational Medicine, University of Tartu, Ravila 19, 50411 Tartu, Estonia

<sup>b</sup> Women's Clinic, Tartu University Hospital, L. Puusepa 8, 51014 Tartu, Estonia

Corresponding author: Aili Tagoma, Department of Immunology, Institute of Biomedicine and Translational Medicine, University of Tartu, Ravila 19, 50411 Tartu, Estonia (e-mail: aili.tagoma@ut.ee).

### Abstract

Gestational diabetes (GDM) is defined as glucose intolerance that presents during pregnancy. It increases the risk of developing diabetes later in life. Recent studies indicate the important role of microRNAs (miRNAs) in the pathogenesis of diabetes, including GDM. However, information on the plasma miRNA profile in GDM patients at the late second trimester, at which time the glucose metabolism disorder manifests, is scarce. This study aimed to determine the plasma miRNA expression profiles of the pregnant women with GDM and compare them to those of pregnant controls using the real-time PCR array method. The study involved 22 single-pregnancy women (mean age  $\pm$  standard deviation of  $29.9 \pm 4.5$  years old) who underwent a glucose tolerance test between 23 and 31 weeks of gestation. Of them, 13 were diagnosed with GDM. We identified 15 upregulated miRNAs in the GDM patients that were involved in 41 pathways. Among the top 10 associated pathways, fatty acid biosynthesis and fatty acid metabolism were targeted by the most, of the miRNAs investigated, with very low  $p$  values ( $p < 1e-325$ , false discovery rate corrected). MiR-195-5p, which targeted the highest number of genes important in metabolism, showed the highest fold upregulation. We conclude that increased miRNA expression, especially miR-195-5p, in plasma is characteristic of and causally related to the development of GDM.

### Keywords

Gestational diabetes; fatty acid metabolism; fatty acid biosynthesis; microRNA

### Abbreviations

Download English Version:

<https://daneshyari.com/en/article/8644645>

Download Persian Version:

<https://daneshyari.com/article/8644645>

[Daneshyari.com](https://daneshyari.com)