

 View PDFAccess through **your institution**[Purchase PDF](#)

Gene Reports

Volume 15, June 2019, 100386

Genetic susceptibility of Iraqis for obesity and type 2 diabetes: *LEPR* gene polymorphisms

Maysoon K. Almyah, Adnan Issa Al-Badran  [Show more](#)  Outline |  Share  Cite<https://doi.org/10.1016/j.genrep.2019.100386>[Get rights and content](#)

Referred to by [Erratum regarding missing Declaration of Competing Interest statements in previously published ...](#)
Gene Reports, Volume 24, September 2021, Pages 101039

 [Download PDF](#)

Abstract

Prevalence of obesity and diabetes over world encouraged researchers to expand their studies about genetic predisposition factors which increase individuals' risk for diseases. *LEPR* gene encodes for leptin receptor which regulates body weight, energy expenditure and insulin sensitivity by binding with adipose derived hormone (leptin). Therefore we sequenced *LEPR*'s promoter, coding exons, exon-intron boundaries and 3'UTR in 45 Iraqi individuals (24 were diagnosed with type 2 diabetes and 21 were not). Seventeen polymorphisms have been detected in this study, 6 in promoter region, 5 in coding exons, 5 in introns (2 were novel) and I Ins/Del in 3'UTR. Type 2 diabetic carriers of rs1137101 in exon 6 were 75% in comparison to non-diabetic

FEEDBACK 

(52.4%). Also 50% and 33.3% from diabetic patients and non-diabetics, respectively were carrying p.S343S in exon 9. GC allele in exon 14 increased the BMI of diabetics to 34.6 ± 7.8 but it was 32.4 ± 4.4 in patients with GG allele and both of them were higher in type 2 diabetics than other group (30.2 ± 5.2 and 29.9 ± 2.5 , respectively). BMI of diabetic patients with AA allele (P1019P) in exon 20 was 35.7 ± 4 but it was 32.7 ± 5.9 in patients with GG allele, the same was in non-diabetics which was 33.3 ± 4 and 30 ± 3.7 , respectively. Also CTTTA insertion allele increased the BMI of diabetics to 35.7 ± 4 in comparison to CTTTA deletion allele as well as 33.3 ± 4 and 29.6 ± 3.5 in other group, respectively. We have concluded that *LEPR* polymorphisms may increase the risk of developing type 2 diabetes in individuals with $BMI \geq 30$ and in general *LEPR* is a candidate gene for susceptibility to obesity and its outcomes.

[< Previous](#)[Next >](#)

Abbreviations

PCR, Polymerase Chain Reactio; BMI, Body Mass Index; LEPR, Leptin Receptor Gene; SNPs, Single Nucleotide Polymorphisms; UTR, Untranslated Region

Keywords

Iraq; Genetic; LEPR; Polymorphisms; BMI; Type 2diabetes

[Recommended articles](#)[Citing articles \(1\)](#)

© 2019 Elsevier Inc. All rights reserved.

[About ScienceDirect](#)[Remote access](#)[Shopping cart](#)[Advertise](#)[Contact and support](#)[FEEDBACK](#)

[Terms and conditions](#)

[Privacy policy](#)

We use cookies to help provide and enhance our service and tailor content and ads. By continuing you agree to the **use of cookies**.

Copyright © 2021 Elsevier B.V. or its licensors or contributors. ScienceDirect® is a registered trademark of Elsevier B.V.

ScienceDirect® is a registered trademark of Elsevier B.V.

