



## ***Transcription factor 7-like 2* polymorphisms and diabetic retinopathy: a systematic review**

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Genet. Mol. Res. 13 (3): 5865-5872 (2014)

Received November 21, 2013

Accepted February 18, 2014

Published August 7, 2014

DOI <http://dx.doi.org/10.4238/2014.August.7.1>

**ABSTRACT.** The global prevalence of type 2 diabetes mellitus (T2DM) has increased, as well as complications including diabetic retinopathy. Polymorphisms in *transcription factor 7-like 2* (*TCF7L2*) have been associated with T2DM, with the strongest association attributed to the single-nucleotide polymorphism rs7903146. In this review, we searched the current literature to determine whether an association exists between *TCF7L2* polymorphisms rs7903146 with diabetic retinopathy. A systematic search was performed of EMBASE, PubMed, and Scopus using the following search terms: diabetic, retinopathy, polymorphism, genetic, *transcription factor 7-like 2*, *TCF7L2*. A manual search was also performed. There was no language or study design restriction. Three full articles and one abstract were reviewed. All studies were retrospective case-control studies that compared the frequency of the wild-type CC genotype and genotypes with the risk T allele. None of the studies found a statistically significant odds ratio. While the number of studies examined was small, this review suggests that there is no risk of diabetic retinopathy among individuals with the *TCF7L2* polymorphisms rs7903146; however, the polymorphism may play a small role in diabetic retinopathy. Future prospective studies and trials involving diverse ethnicities that adjust for confounding

variables are required to understand the association between *TCF7L2* polymorphisms and diabetic retinopathy.

**Key words:** Diabetic retinopathy; Systematic review; *TCF7L2*; *Transcription factor 7-like 2* polymorphisms