

Table of Contents

<u>Chapter</u>		<u>Page</u>
1	Introduction	1
1.1	Early History of Diabetes.....	1
1.2	Definition and Classification of Diabetes.....	2
1.3	Type 2 Diabetes (non-insulin dependent DM- NIDDM, type II)	5
1.4	Discovery of Type 2 Diabetes	6
1.5	Prevalence of Type 2 Diabetes.....	8
1.6	Etiology of Type 2 Diabetes and Risk Factors.....	11
1.7	Complications of Diabetes	14
1.8	Genes and Type 2 Diabetes	21
1.9	TCF7L2, the Most Important Type 2 Diabetes Gene	23
1.10	The Mechanism by Which TCF7L2 Alleles Predispose to Diabetes	24
2	Materials and Methods	27
2.1	Sample Collection	27
2.2	DNA Extraction	28
2.3	Polymerase Chain Reaction (PCR).....	28
2.4	Restriction Fragment Length Polymorphism – PCR (RFLP-PCR).....	29
2.5	Allele-Specific Polymerase Chain Reaction (ASPCR)	33
2.6	Statistical Analysis.....	36
3	Results	37
4	Discussion	48
5	Incretin-Based Therapy in The Prediabetic Stage.....	53
5.1	Genetic Variant in TCF7L2 Gene and Incretin Effect.....	55
6	References	59
7	Appendix	71