

**Additional File 1.** Selected 47 CpGs corresponding to 20 genes from NF- $\kappa$ B Signaling---

CpG sites	Symbol	Description	Function <sup>a</sup>			
cg01636910	BCL10	B-Cell CLL/Lymphoma 10	The protein encoded by this gene contains a caspase recruitment domain (CARD), and has been shown to induce apoptosis and to activate NF-kappaB.			
cg11975790	DDR1	Discoidin Domain Receptor Tyrosine Kinase 1	The protein encoded by this gene belongs to a subfamily of tyrosine kinase receptors with homology to Dictyostelium discoideum protein discoidin I in their extracellular domain, and that are activated by various types of collagen.			
cg24850711	FLT1	Fms-Related Tyrosine Kinase 1	This gene encodes a member of the vascular endothelial growth factor receptor (VEGFR) family. This protein binds to VEGFR-A, VEGFR-B and placental growth factor and plays an important role in angiogenesis and vasculogenesis.			
cg13297560	IGF1R	Insulin-Like Growth Factor 1 Receptor	This receptor binds insulin-like growth factor with a high affinity. It has tyrosine kinase activity. The insulin-like growth factor I receptor plays a critical role in transformation events.			
cg25830379						
cg12910851	IL1R2	Interleukin 1 Receptor, Type II	The protein encoded by this gene is a cytokine receptor that belongs to the interleukin 1 receptor family.			
cg11683242	LCK	Lymphocyte-Specific Protein Tyrosine Kinase	This gene is a member of the Src family of protein tyrosine kinases (PTKs). The encoded protein is a key signaling molecule in the selection and maturation of developing T-cells.			
cg17078393						
cg05350315						
cg14781242						
cg20239639						
cg00501919	LTA	Lymphotoxin Alpha	The encoded protein, a member of the tumor necrosis factor family, is a cytokine produced by lymphocytes.			
cg01157951						
cg13815684						
cg14441276						
cg16280132						
cg17709873						
cg26348243						
cg02402436						
cg09621572						
cg09736959						
cg10476003						
cg11586857						
cg14437551						
cg14597739						
cg16219283						
cg17169196						
cg21999229						
cg24216966						
cg23079808				LTBR	Lymphotoxin Beta Receptor	This gene encodes a member of the tumor necrosis factor receptor superfamily. The encoded protein

		(TNFR Superfamily, Member 3)	plays a role in signalling during the development of lymphoid and other organs, lipid metabolism, immune response, and programmed cell death.
cg16826777	MAP3K14	Mitogen-Activated Protein Kinase Kinase Kinase 14	This gene encodes mitogen-activated protein kinase kinase kinase 14, which is a serine/threonine protein-kinase. This kinase binds to TRAF2 and stimulates NF-kappaB activity.
cg03974193	MAP4K4	Mitogen-Activated Protein Kinase Kinase Kinase Kinase 4	The protein encoded by this gene is a member of the serine/threonine protein kinase family. This kinase has been shown to specifically activate MAPK8/JNK.
cg00689225	NFKBIA	Nuclear Factor Of Kappa Light Polypeptide Gene Enhancer In B-Cells Inhibitor, Alpha	This gene encodes a member of the NF-kappa-B inhibitor family, which contain multiple ankrin repeat domains. The encoded protein interacts with REL dimers to inhibit NF-kappa-B/REL complexes which are involved in inflammatory responses.
cg16518861			
cg01320698	PIK3CD	Phosphatidylinositol-4,5-Bisphosphate 3-Kinase, Catalytic Subunit Delta	The protein encoded by this gene is a class I PI3K found primarily in leukocytes. Phosphoinositide 3-kinases (PI3Ks) phosphorylate inositol lipids and are involved in the immune response.
cg07499142			
cg04610450	PIK3R2	Phosphoinositide-3-Kinase, Regulatory Subunit 2 (Beta)	The protein encoded by this gene is a regulatory component of PI3K.
cg11953794			
cg02481000	PRKCZ	Protein Kinase C, Zeta	Protein kinase C (PKC) zeta is a member of the PKC family of serine/threonine kinases which are involved in a variety of cellular processes such as proliferation, differentiation and secretion.
cg04916416	TGFB2	Transforming Growth Factor, Beta Receptor II	This gene encodes a member of the Ser/Thr protein kinase family and the TGFB receptor subfamily.
cg14578677	TLR6	Toll-Like Receptor 6	The protein encoded by this gene is a member of the Toll-like receptor (TLR) family which plays a fundamental role in pathogen recognition and activation of innate immunity.
cg22014112	TNFAIP3	Tumor Necrosis Factor, Alpha-Induced Protein 3	The protein encoded by this gene is a zinc finger protein and ubiquitin-editing enzyme, and has been shown to inhibit NF-kappa B activation as well as TNF-mediated apoptosis.
cg05599723	TNFRSF1B	Tumor Necrosis Factor Receptor Superfamily, Member 1B	The protein encoded by this gene is a member of the TNF-receptor superfamily.
cg15526535			
cg22677556			
cg10721755	TRAF5	TNF Receptor-Associated Factor 5	The scaffold protein encoded by this gene is a member of the tumor necrosis factor receptor-associated factor (TRAF) protein family
cg08859278	ZAP70	Zeta-Chain (TCR) Associated Protein Kinase 70kDa	This gene encodes an enzyme belonging to the protein tyrosine kinase family, and it plays a role in T-cell development and lymphocyte activation.

<sup>a</sup>The public database GeneCards (<http://www.genecards.org>) was used for the annotation of the genes