

Supplement Table 1A**Direct Intracellular Regulators of Apoptosis**

Array 1	Array 2	Mean	Name	Description
1.5	2.2	1.9	ATM	ataxia telangiectasia mutated homolog
1.9	1.8	1.9	Bcl2a1a	B-cell leukemia/lymphoma 2 related protein A1a
1.6	2.1	1.9	Birc1a	baculoviral IAP repeat-containing 1a
2.3	1.3	1.8	BBC3	Bcl-2 binding component 3
1.7	1.8	1.8	AVEN	apoptosis, caspase activation inhibitor
2.2	1.2	1.7	CIDEB	cell death-inducing DFFA-like effector b
1.7	1.6	1.7	TNFAIP3	tumor necrosis factor, alpha-induced protein 3
1.6	1.7	1.6	MOAP1	modulator of apoptosis 1
1.5	1.7	1.6	Bid3	BH3 interacting (with BCL2 family) domain, apoptosis agonist
1.7	1.5	1.6	BIRC2	baculoviral IAP repeat-containing 2
1.5	1.7	1.6	BNIP3	BCL2/adenovirus E1B 19kDa interacting protein 3
1.6	1.6	1.6	CARD6	caspase recruitment domain family, member 6
1.6	1.6	1.6	CASP12	caspase 12
1.5	1.7	1.6	HD	huntingtin (Huntington disease)
1.5	1.7	1.6	HRK	harakiri, BCL2 interacting protein (contains only BH3 domain)
1.2	1.8	1.5	AATK	apoptosis-associated tyrosine kinase
1.6	1.4	1.5	BAG3	BCL2-associated athanogene 3
1.4	1.6	1.5	RIPK2	receptor-interacting serine-threonine kinase 2
1.2	1.8	1.5	RIPK3	receptor-interacting serine-threonine kinase 3
1.4	1.5	1.5	TP53INP1	transformation related protein 53 inducible nuclear protein 1
1.5	1.4	1.5	PDCD2	programmed cell death 2
1.5	1.4	1.5	PDCD5	programmed cell death 5
1.5	1.4	1.4	DFFB	DNA fragmentation factor, 40kDa, beta polypeptide (caspase-activated DNase)
1.4	1.4	1.4	BCL10	B-cell CLL/lymphoma 10
1.4	1.4	1.4	DPF2	D4, zinc and double PHD fingers family 2
1.3	1.4	1.4	BAG4	BCL2-associated athanogene 4
1.4	1.3	1.4	BFAR	bifunctional apoptosis regulator
1.3	1.4	1.4	CASP11	caspase 11, apoptosis-related cysteine protease
1.3	1.4	1.4	CASP4	caspase 4, apoptosis-related cysteine protease
1.3	1.4	1.4	DAP3	death associated protein 3
1.3	1.4	1.4	TAX1BP1	Tax1 (human T-cell leukemia virus type I) binding protein 1
1.3	1.4	1.3	BCL2L13	BCL2-like 13 (apoptosis facilitator)
1.4	1.3	1.3	MAPK8IP1	mitogen activated protein kinase 8 interacting protein
1.3	1.3	1.3	BAG1	BAG-family molecular chaperone regulator-1
1.1	1.5	1.3	PDCD8	programmed cell death 8
1.3	1.3	1.3	PTEN	phosphatase and tensin homolog

1.3	1.3	1.3	RNF7	ring finger protein 7
1.2	1.4	1.3	DAP	death-associated protein
1.2	1.4	1.3	PDCD6	programmed cell death 6
1.3	1.3	1.3	PRDX2	peroxiredoxin 2
1.3	1.2	1.3	BNIP3L	BCL2/adenovirus E1B 19kDa interacting protein 3-like
1.1	1.4	1.3	CTNBL1	catenin, beta like 1
1.2	1.3	1.3	CUL1	cullin 1
1.3	1.2	1.2	PDCD7	programmed cell death 7
1.2	1.3	1.2	GSK3B	glycogen synthase kinase 3 beta
1.3	1.2	1.2	HSPA1B	heat shock protein 1A /// heat shock protein 1B
1.2	1.3	1.2	NIPA	nuclear interacting partner of anaplastic lymphoma kinase (Alk)
1.3	1.1	1.2	BBP	beta-amyloid binding protein precursor caspase 1, apoptosis-related cysteine protease (interleukin 1, beta, convertase)
1.1	1.3	1.2	CASP1	
1.3	1.1	1.2	STK17B	serine/threonine kinase 17b (apoptosis-inducing)
1.2	1.2	1.2	CYCS	cytochrome c, somatic non-metastatic cells 6, protein expressed in (nucleoside-diphosphate kinase)
1.5	0.9	1.2	NME6	
1.2	1.2	1.2	RAF1	v-raf-1 murine leukemia viral oncogene homolog 1
1.2	1.2	1.2	HELLS	helicase, lymphoid specific amyotrophic lateral sclerosis 2 (juvenile) chromosome region, candidate 2 homolog
1.2	1.2	1.2	ALS2CR2	
1.1	1.2	1.2	BCL2L2	Bcl2-like 2
1.0	1.3	1.2	BIRC5	baculoviral IAP repeat-containing 5 (survivin)
1.0	1.3	1.2	CASP8AP2	CASP8 associated protein 2
1.3	1.0	1.2	FASTK	Fas-activated serine/threonine kinase
1.2	1.1	1.2	ASC	apoptosis-associated speck-like protein containing a CARD
1.0	1.3	1.2	BID	BH3 interacting domain death agonist
1.2	1.1	1.2	CBX4	chromobox homolog 4 (Pc class homolog, Drosophila)
1.1	1.2	1.2	PMAIP1	phorbol-12-myristate-13-acetate-induced protein 1
1.2	1.1	1.2	PYCARD	PYD and CARD domain containing
1.1	1.1	1.1	DEDD2	death effector domain-containing DNA binding protein 2
1.0	1.2	1.1	NGFRAP1	nerve growth factor receptor (TNFRSF16) associated protein 1
1.1	1.2	1.1	PDCD11	programmed cell death 11
1.0	1.2	1.1	BNIP1	BCL2/adenovirus E1B 19kDa-interacting protein 1, NIP1
1.1	1.1	1.1	CASP2	caspase 2, apoptosis-related cysteine protease
1.1	1.1	1.1	DAPK1	death-associated protein kinase 1
0.9	1.3	1.1	DFFA	DNA fragmentation factor, 45kDa, alpha polypeptide
1.1	1.1	1.1	GPX1	glutathione peroxidase 1
1.1	1.1	1.1	SCOTIN	scotin
1.1	1.0	1.1	FAIM	Fas apoptotic inhibitory molecule
1.1	1.1	1.1	STK3	serine/threonine kinase 3 (STE20 homolog, yeast)
1.0	1.1	1.1	CARD10	caspase recruitment domain family, member 10
1.0	1.1	1.1	MCL-1	myeloid cell leukemia sequence 1

1.1	1.0	1.1	PERP	PERP, TP53 apoptosis effector
1.0	1.0	1.0	AKT1	v-akt murine thymoma viral oncogene homolog 1
0.9	1.1	1.0	BAX	BCL2-associated X protein
0.9	1.1	1.0	BIRC1	baculoviral IAP repeat-containing 1
0.9	1.1	1.0	Birc1e	baculoviral IAP repeat-containing 1e
0.8	1.2	1.0	CARD14	caspase recruitment domain family, member 14
0.9	1.1	1.0	PDCD6IP	programmed cell death 6 interacting protein
1.0	1.0	1.0	POLB	polymerase (DNA directed), beta
0.9	1.0	1.0	PIM2	proviral integration site 2
0.9	1.0	1.0	NDUFA13	NADH dehydrogenase (ubiquinone) 1 alpha subcomplex, 13
0.9	1.0	0.9	SGKL	serum/glucocorticoid regulated kinase 3
0.8	1.0	0.9	CASP8	caspase 8, apoptosis-related cysteine protease
0.9	0.9	0.9	CIDEA	cell death-inducing DFFA-like effector a
0.9	0.9	0.9	BMF	Bcl-2 modifying factor
0.9	0.8	0.9	CASP7	caspase 7
0.9	0.7	0.8	BAD	BCL2-antagonist of cell death
0.8	0.8	0.8	CASP14	caspase 14, apoptosis-related cysteine protease
0.8	0.8	0.8	DAD1	defender against cell death 1
0.7	0.7	0.7	EEF1A2	eukaryotic translation elongation factor 1 alpha 2
0.6	0.6	0.6	CASP6	caspase 6

Supplement Table 1B

Transcription factors

Array 1	Array 2	Mean	Name	Description
2.5	1.4	1.9	LMX1A	LIM homeobox transcription factor 1, alpha
1.4	1.9	1.7	TP73	tumor protein p73
1.2	2.0	1.6	MBD4	methyl-CpG binding domain protein 4
1.5	1.6	1.6	FOXO1	forkhead box O1A
1.8	1.2	1.5	PAX7	paired box gene 7
1.1	1.9	1.5	REL	v-rel reticuloendotheliosis viral oncogene homolog (avian)
1.3	1.2	1.3	MYC	v-myc myelocytomatosis viral oncogene homolog
1.2	1.2	1.2	PPP1R13B	protein phosphatase 1, regulatory (inhibitor) subunit 13B
1.2	1.2	1.2	BTG2	BTG family, member 2
1.2	1.1	1.2	TFDP1	transcription factor Dp-1
1.2	1.1	1.2	TIAL1	TIA1 cytotoxic granule-associated RNA binding protein-like 1
1.2	1.1	1.2	MYCN	v-myc myelocytomatosis viral related oncogene, neuroblastoma derived
1.1	1.0	1.1	TP73L	tumor protein p73-like

1.0	1.2	1.1	BCL6	B-cell CLL/lymphoma 6 (zinc finger protein 51)
1.1	1.1	1.1	Mycs	myc-like oncogene, s-myc protein
1.0	1.1	1.1	TCF7	transcription factor 7, T-cell specific
1.0	1.2	1.1	HDAC3	Histone deacetylase 3
1.1	1.0	1.1	STAT1	signal transducer and activator of transcription 1
1.0	1.1	1.0	ANK2	ankyrin 2, brain
1.0	1.0	1.0	MKL1	megakaryoblastic leukemia (translocation) 1
0.9	1.1	1.0	AATF	apoptosis antagonizing transcription factor
1.0	1.0	1.0	JUN	v-jun sarcoma virus 17 oncogene homolog (avian)
				nuclear factor of kappa light polypeptide gene enhancer in
1.0	1.0	1.0	NFKBIA	B-cells inhibitor, alpha
0.9	1.0	1.0	LHX4	LIM homeobox protein 4
				TAF10 RNA polymerase II, TATA box binding protein
0.9	0.9	0.9	TAF10	(TBP)-associated factor
0.9	0.9	0.9	ATF5	activating transcription factor 5

Supplement Table 1C

**Intercellular
signalling**

Array 1	Array 2	Mea n	Name	Description
1.5	2.1	1.8	DNASE1	deoxyribonuclease I
1.8	1.6	1.7	DEDD	death effector domain containing
1.7	1.7	1.7	IRAK2	interleukin-1 receptor-associated kinase 2
1.4	1.8	1.6	IL1B	interleukin-1 beta precursor
				tumor necrosis factor (ligand) superfamily, member
1.4	1.6	1.5	TNFSF4	4
1.5	1.5	1.5	TRADD	TNFRSF1A-associated via death domain
				tumor necrosis factor (ligand) superfamily, member
1.3	1.5	1.4	TNFSF12	12
1.4	1.3	1.4	CCL2	chemokine (C-C motif) ligand 2
				estrogen receptor-binding fragment-associated gene
1.3	1.3	1.3	EBAG9	9
1.2	1.3	1.3	IL18	interleukin-18 precursor (il-18)
1.2	1.3	1.3	RABEP1	rabaptin, RAB GTPase binding effector protein 1
				tumor necrosis factor (ligand) superfamily, member
1.2	1.3	1.2	TNFSF6	6
1.1	1.3	1.2	IL10	interleukin-10 precursor
1.2	1.2	1.2	APLP1	amyloid beta (A4) precursor-like protein 1
1.1	1.2	1.2	INHA	inhibin alpha chain precursor
1.2	1.1	1.2	FASLG	Fas ligand (TNF superfamily, member 6)

1.0	1.3	1.1	DNASE2	deoxyribonuclease II alpha
1.1	1.1	1.1	TPT1	tumor protein, translationally-controlled 1
0.9	1.3	1.1	VEGF	vascular endothelial growth factor
1.1	1.1	1.1	SULF1	sulfatase 1
1.1	1.1	1.1	IRAK3	interleukin-1 receptor-associated kinase 3
1.0	1.2	1.1	YARS	tyrosyl-tRNA synthetase
1.0	1.1	1.1	GZMA	granzyme A
1.0	1.0	1.0	GRIM19	genes associated with retinoid-IFN-induced mortality 19
0.9	1.0	1.0	VDAC1	voltage-dependent anion channel 1
1.0	1.0	1.0	APP	amyloid beta (A4) precursor protein
0.8	1.1	1.0	IGF1	insulin-like growth factor 1
0.8	0.8	0.8	LGALS7	lectin, galactose binding, soluble 7
0.6	1.0	0.8	PGLYRP1	peptidoglycan recognition protein 1
0.6	0.7	0.7	DNASE1L3	deoxyribonuclease 1-like 3
0.2	0.9	0.6	NGFB	nerve growth factor, beta polypeptide

Supplement Table 1D

Intracellular signalling & receptors

Array 1	Array 2	Mean	Name	Description
0.7	2.5	1.6	EDAR	ectodysplasin A receptor
1.4	1.7	1.6	CXCR4	chemokine (C-X-C motif) receptor 4
1.4	1.6	1.5	FAS	Fas (TNF receptor superfamily, member 6)
1.4	1.6	1.5	TNFRSF4	tumor necrosis factor receptor superfamily, member 4
1.5	1.5	1.5	TNFR1	tumor necrosis factor receptor superfamily, member 1A
1.5	1.5	1.5	TNFRSF1A	tumor necrosis factor receptor superfamily, member 1a CASP2 and RIPK1 domain containing adaptor with death domain
1.0	1.9	1.5	CRADD	death domain
0.8	2.1	1.5	ADORA1	adenosine A1 receptor
1.6	1.3	1.5	MAP2K6	mitogen-activated protein kinase kinase 6
1.4	1.5	1.5	RHOB	ras homolog gene family, member B
1.2	1.5	1.4	ABL1	v-abl Abelson murine leukemia viral oncogene homolog 1
1.1	1.6	1.4	CD5L	CD5 antigen-like (scavenger receptor cysteine rich family)
1.3	1.4	1.4	ITGB3BP	integrin beta 3 binding protein (beta3-endonexin)
1.5	1.2	1.4	MAPKK4	mitogen-activated protein kinase kinase kinase 4
1.3	1.3	1.3	ROCK1	Rho-associated, coiled-coil containing protein kinase 1
1.4	1.2	1.3	MALT1	mucosa associated lymphoid tissue lymphoma translocation gene 1
1.3	1.3	1.3	RIPK1	receptor (TNFRSF)-interacting serine-threonine kinase 1

1.2	1.3	1.3	LTBR	lymphotoxin beta receptor
0.9	1.6	1.3	TNFRSF7	tumor necrosis factor receptor superfamily, member 7
1.2	1.3	1.3	TRAF3	TNF receptor-associated factor 3
1.3	1.1	1.2	MAPK1	mitogen-activated protein kinase 1
1.1	1.3	1.2	MAPK3	mitogen-activated protein kinase 3
1.5	0.9	1.2	NGFR	nerve growth factor receptor precursor, low affinity
1.2	1.2	1.2	RAF-1	v-raf-1 murine leukemia viral oncogene homolog 1
1.3	0.9	1.1	TNFRSF25	tumor necrosis factor receptor superfamily, member 25
1.1	1.1	1.1	YWHAH	tyrosine 3-monooxygenase/tryptophan 5-monooxygenase activation protein
1.1	1.0	1.1	MAP2K1	mitogen-activated protein kinase kinase 1
1.2	0.9	1.1	BTK	Bruton agammaglobulinemia tyrosine kinase
1.0	1.1	1.0	TRAF4	Tnf receptor associated factor 4
1.1	1.0	1.0	PTDSR	phosphatidylserine receptor
1.1	1.0	1.0	PTDSR	phosphatidylserine receptor
1.0	1.0	1.0	TRAF1	Tnf receptor-associated factor 1
0.9	1.1	1.0	MAP3K5	mitogen-activated protein kinase kinase kinase 5
1.0	0.8	0.9	TRAF2	TNF receptor-associated factor 2
0.9	0.9	0.9	GADD45B	growth arrest and DNA-damage-inducible, beta
0.8	0.9	0.9	CDC42BPA	CDC42 binding protein kinase alpha (DMPK-like)
0.6	1.0	0.8	TNFRSF21	tumor necrosis factor receptor superfamily, member 21
0.7	0.9	0.8	MAP2K4	mitogen-activated protein kinase kinase 4
0.7	0.9	0.8	TRAF5	TNF receptor-associated factor 5
0.6	0.7	0.7	MAP2K3	mitogen-activated protein kinase kinase 3

Table

Diabetes leads to greater induction of genes that promote apoptosis. Formalin killed *P. gingivalis* was inoculated into the scalp of diabetic mice (db/db) and normoglycemic littermates (db/+) to induce an injury to connective tissue and bone resorption. At the peak healing period, 8 days, mice were euthanized and total RNA was extracted from the healing tissue. mRNA profiling was carried out using Affymetrix microarrays and the results analyzed by PathwayAssist and ArrayAssist software to quantify the mRNA levels of genes that directly or indirectly affect apoptosis. Shown are mRNA levels that exhibited less than a two fold difference in the diabetic versus normoglycemic mice.