

**Appendix 2 – function of genes assayed by microarray**

Gene		Function
<b>Toll-like Receptors</b>		
TLR1	NM_030682	Confers specific recognition to lipoproteins with TLR2
TLR2	NM_011905	Responds to LTA, lipoproteins, peptidoglycan
TLR3	AF355152	Recognises dsRNA
TLR4	NM_021297	Signals in response to LPS
TLR5	NM_016928	Recognises bacterial flagellin
TLR6	NM_011604	Enhances TLR2-mediated recognition of lipoproteins
TLR7	AY035889	Recognises virus ssRNA in mice
TLR8	AY035890	Recognises virus ssRNA in humans
TLR9	NM_031178	Recognises CpG DNA
Rp105	NM_010739	Mediates LPS recognition in B cells
<b>Secreted PRRs</b>		
CRP	NM_007768	Opsonisation
LBP	NM_008489	LPS Binding protein
MBL1	NM_010775	Bind carbohydrates
MBL2	NM_010776	Fix complement
SAP	NM_011318	Opsonisation
<b>Lectins</b>		
Mannose Receptor (MRC1)	NM_008625	Endocytosis of glycosylated particulates
Mannose Receptor (MRC2)	NM_008626	Endocytosis of glycosylated particulates
Dectin-1 (type-C lectin/Clecsf12)	AF262985	Binds $\beta$ -glucans
Dectin-2	AF240357	Unknown
Clecsf10/CD209	NM_020001	Dendritic cell associated
Clecsf9 (Mincle)	NM_019948	Induced by LPS
Clecsf5(MDL-1)	NM_021364	Associates with DAP-12 to activate cell
CR3 (CD11b)	NM_008401	Adhesion, phagocytic receptor, oxidative burst
Sialoadhesin	NM_011426	sialic acid-dependent interactions
CD14	NM_009841	LPS/apoptotic cell "tethering"
<b>Scavenger Receptors</b>		
SRA-I	NM_031195	Can bind LTA,LPS and recognize
SRA-II	NM_030707	and in uptake of apoptotic cells, bacteria
MARCO	U18424	Binds: gram +ve/-ve bacteria, modified LDL
SRCL-I	BC009162	Bind E.coli, S.aureus
CD36 (SR-B)	NM_007643	Binds apoptotic cells, modified LDL
SR-BI (CD36L1)	NM_016741	Binds apoptotic cells, modified LDL
CD36L2	NM_007644	Role unsure, scavenger receptor
CD68 (SR-D)	NM_009853	Macrophage/Microglia cell marker
LOX1/OLR1 (SR-E)	AF303744	Expressed on endothelial cells, binds oxLDL
M130 (CD163)	AF274883	Scavenger for Hemoglobin
Crp-ductin (Crpd/DMBT1)	NM_007769	Protective role in inflammation

<b>PGRP family</b>		
Pgrp	AF076482	Binds peptidoglycan
<b>N-formyl PR</b>		
FPR1	NM_013521	migration/activation to N-formyl oligopeptides...
FPRL1 (FRP2)=Fpr-rs1	NM_008042	Binds N-formyls, PrP <sup>Sc</sup> and $\beta$ -amyloid
FPR-rs2	AF071180	Unknown
FPR-rs3	AF071181	Unknown
FPR-rs4	AF071182	Unknown
<b>Other PRRs</b>		
HM74 (Puma-g)	NM_030701	Similar to FPR, function unknown/chemotaxis
NOD1	NM_021406	Binds LPS, role not characterized
NOD2	NM_021410	Binds LPS, role not characterized
TREM-1	NM_021407	Binds LPS, activates monocytes
TREM-2	XM_132577	Binds LPS, activates monocytes
<b>Apoptotic cell recognition</b>		
PS Receptor	NM_033398	Recognizes exposed Phosphatidyl serine
C1q Receptor/Ly68	NM_010740	Binds complement component C1q
C1q (alpha chain)	NM_007572	Complement component
alpha V integrin	NM_008402	Integrin that binds apoptotic cells
beta 3 integrin	NM_016780	Integrin that binds apoptotic cells
beta 5 integrin	NM_010580	Integrin that binds apoptotic cells
ABC1	NM_013454	Mediates apoptotic cell engulfment
<b>Prion protein receptors</b>		
CR1 (mCRY)	NM_013499	Binds complement (C3b) that can coat PrP <sup>Sc</sup>
CR2	M29281	Binds complement (C3b) that can coat PrP <sup>Sc</sup>
Doppel	NM_023043	Homologous to Prion Protein
Prnp (Prion protein)	NM_011170	Central for prion disease, SOD-like activity
Protocadherin 2 (PCDHGC3)	AY013811	Putative PrP receptor
Laminin Receptor1 (LAMR1)	NM_011029	Putative PrP receptor
Caveolin-1	NM_007616	Signaling to PrP, NO
RAGE	NM_007425	Binds AD fibrils, up-regulated in AD brain
<b>Stress genes</b>		
arachidonate 12-lipoxygenase (ALOX12)	S80446	Biochemical pathway for eicosanoid production
CD40 (TNFRSF5)	NM_011611	Present on microglia - implicated in AD
CD40 Ligand (TNFSF5)	NM_011616	Immune control
Crystallin alpha B	NM_009964	Heat shock protein
Crystallin beta B2	NM_007773	Unknown-role in CNS neurodegeneration
CXCR3	NM_009910	Promotes microglial survival
Hsp25/27	L11609	Heat shock protein
GFAP	K01347	Expressed on activated astrocytes
Fractalkine (Scyd1)	NM_009142	Expressed by neurons to activate microglia
Heme oxygenase(decycling)1	X13356	Anti-oxidant, implicated in scrapie
Nos1	NM_008712	Neuronal NOS
Nos2 (iNOS/Nos2a)	NM_010927	Inducible form of NO synthase, due to infection
SOD1	M35725	Converts free radicals to O and peroxide

SOD2	NM_013671	Mitochondrial free radical scavenger
Phospholipase A2 (PLA2G4A)	NM_008869	biochemical pathway for eicosanoid production
Ptgs1 (Cox-1)	NM_008969	Prostaglandin biosynthesis
Ptgs2 (Cox-2)	NM_011198	Mitogen inducible form of Ptgs1
Catalase (CAT)	NM_009804	Peroxidase, up-regulated in AD Hippocampus
GPX1	NM_008160	Protection against oxidative stress
GSS	NM_008180	Makes GSH, protects against O
GSR	NM_010344	Reductase of GSH
GST-Pi (GST3)	BC002048	Conjugates Glutathione to toxins
Cathepsin D	NM_009983	Lysosomal protein, mutant has neurodegeneration
Osi (Sqstm1)	NM_011018	Induced by oxidative stress in Mphages
SLC(SCYA21)	NM_011335	Chemokine
SLC1A1	NM_009199	Glutamate Transporter
SLC1A2	NM_011393	Decrease = increased Extracellular glutatmate in ALS
SLC1A3	D63816	Neuroprotective in ischemia of retina
TNFSF6 (Fas-Ligand)	NM_010177	Induces apoptosis
PAF Receptor	D50872	Activates microglia to produce H2O2
NCF1	AB002663	Part of the phagocyte NADPH-oxidase system
NCF2	NM_010877	As above: generates free radicals to fight infection
<b>Cytokines and growth factors</b>		
TNF- $\alpha$	NM_013693	Pro-inflammatory, neurotoxic
INF- $\alpha$ 4	NM_010504	Anti-viral
INF-beta 1	NM_010510	Anti-viral
INF- $\gamma$	K00083	Anti-viral
IL-1 $\alpha$	X01450	Induces apoptosis, pro-inflammatory
IL-1 $\beta$	M15131	Mediates acute phase response
IL-6	NM_031168	Induced by IL-1 and TNF
IL-12	NM_008352	Pro-inflammatory, Th1 from Macrophages
Scya3 (MIP- $\alpha$ )	NM_011337	Chemokine
Scya4 (MIP- $\beta$ )	NM_013652	Chemokine
SCYB9 (MIG)	M34815	Chemokine
Scyb10 (IP-10)	M33266	Chemokine
CD200 (MOX2 or OX2)	AF004023	Suppresses microglial activation
CD200R	NM_021325	Present on microglia. Promotes quiescence
IDO	NM_008324	Limits T cell activation
TGF $\beta$	NM_011577	Anti-inflammatory, can promote AB clearance
IL-10	NM_010548	Anti-inflammatory, inhibits antigen presenting
Glia Maturation Factor $\beta$	NM_022023	Inhibits the mitogens ERK1/2, activates NF-KB
GDNF	NM_010275	Growth factor
BDNF	NM_007540	Growth factor
NGF-beta	NM_013609	GF (Subunit responsible for activity)
NT3	NM_008742	Promotes survival of neurites
CTNF	U05342	Neuroprotective
IGF2	NM_010514	Mitogen, on Alan's array
FGF2	NM_008006	Protects neurones from oxidative damage