

GENES	6 MONTH		9 MONTH		12 MONTH	
	Over expression	Under expression	Over expression	Under expression	Over expression	Under expression
ABAD	•		•		•	
ADAM10		•		•		•
APH1B		•		•		•
APOE		•		•		•
APP	•		•		•	
APPBP1	•		•		•	
ATF6		•		•		•
BACE1				•		•
BAD			•			
BID			•		•	
CALM1		•		•		•
CALN	•		•		•	
CASP12		•			•	
CASP3	•		•			
CASP7	•		•		•	
CASP8	•		•		•	
CASP9	•		•		•	
CDK5	•		•			•
CXI						
CXII				•		
CXIII	•				•	
CXV				•		•
CXVI		•		•		•
CYCS	•		•		•	
ERK/MAPK2		•	•		•	
FAS	•		•			
GQ				•		•
GSK3B	•		•		•	
IDE		•	•		•	
IL1B		•	•		•	
IP3R	•		•		•	
IRE1A	•		•		•	
LPL			•		•	
LRP1	•			•		•
MAPT/TAU	•		•		•	
NEP/MME		•		•		•
NMDAR	•		•		•	
NOS1		•	•		•	
P25					•	

<i>PEN-2</i>			•				
<i>PERK</i>					•	•	•
<i>PLCB1</i>			•			•	
<i>PSEN1</i>					•		•
<i>RYR3</i>	•		•			•	
<i>SERCA1</i>	•						•
<i>SNCA 1</i>		•			•		•
<i>TNF</i>	•		•			•	
<i>VDCC</i>		•	•			•	

**Table S 1:** Genes up regulated or down regulated with age progression

Gene Symbol	Function	Description
<i>ADAM10</i>	Signal transduction , Metallopeptidase.	A disintegrin and metallopeptidase domain 10
<i>ABAD</i>	Metabolism (Mitochondria) Amino acid metabolism.	3-hydroxyacyl-CoA dehydrogenase / 3-hydroxy-2-methylbutyryl-CoA dehydrogenase
<i>APH1B</i>	Environmental Information Processing Signal transduction.	anterior pharynx defective 1
<i>Apo-E</i>	Exosomal protein.	apolipoprotein E
<i>App</i>	Serotonergic synapse	amyloid beta A4 protein
<i>Atf6</i>	Protein processing in endoplasmic reticulum	cyclic AMP-dependent transcription factor ATF-6 alpha (ER procesing)
<i>Serca1</i>	Environmental Information Processing Signal transduction ,Calcium signaling pathway	ATPase, Ca <sup>++</sup> transporting, cardiac muscle, fast twitch 1 .Ca <sup>2+</sup> transporting ATPase, sarcoplasmic/endoplasmic reticulum
<i>Bace1</i>	Hydrolase, Acting on peptide bonds	beta-site APP-cleaving enzyme 1 .
<i>Bad</i>	Signal transduction Ras,ErbB, VEGF ,cAMP cGMP - PKG ,PI3K-Akt signaling pathway.	BCL2-associated agonist of cell death
<i>Bid</i>	Signal transduction, Sphingolipid signaling pathway	BH3 interacting domain death agonist

<b><i>Vdcc</i></b>	Signal transduction MAPK, Calcium,cAMP, cGMP - PKG signaling pathway	calcium channel, voltage-dependent, L type, alpha 1C subunit
<b><i>Calm1</i></b>	Signal transduction Ras , Rap1 , Calcium , Phosphatidylinositol,cAMP cGMP - PKG signaling pathway	calmodulin 1 (phosphorylase kinase, delta)
<b><i>Caln</i></b>	Signal transduction, MAPK, Wnt, VEGF Calcium, cGMP - PKG signaling pathway	protein phosphatase 3, catalytic subunit, alpha isozyme
<b><i>CASP12</i></b>	Folding, sorting and degradation	caspase 12
<b><i>Casp3</i></b>	Signal transduction MAPK, TNF signaling pathway	Caspase 3
<b><i>Casp7</i></b>	Signal transduction TNF signaling pathway	Caspase 7
<b><i>Casp8</i></b>	Signal transduction TNF signaling pathway	Caspase 8
<b><i>Casp9</i></b>	Signal transduction, VEGF,PI3K-Akt signaling pathway	Caspase 9
<b><i>Cdk5</i></b>	Axon guidance,Transferring phosphorus-containing groups	cyclin-dependent kinase 5
<b><i>P25</i></b>	Cdk activation	cyclin-dependent kinase 5 activator 1
<b><i>CxI</i></b>	Energy metabolism Oxidative phosphorylation	NADH dehydrogenase (ubiquinone) 1 subunit C2
<b><i>CxII</i></b>	Carbon metabolism, Carbohydrate metabolism Citrate cycle (TCA cycle) Oxidative phosphorylation	succinate dehydrogenase complex, subunit A, flavoprotein
<b><i>CxIII</i></b>	Energy metabolism Oxidative phosphorylation	ubiquinol-cytochrome c reductase, complex III subunit XI
<b><i>CxvI</i></b>	Energy metabolism Oxidative phosphorylation	cytochrome c oxidase subunit 6b
<b><i>Cxv</i></b>	Energy metabolism Oxidative phosphorylation	ATP synthase, H <sup>+</sup> transporting, mitochondrial Fo complex, subunit d
<b><i>Cycs</i></b>	Energy metabolism Sulfur metabolism	cytochrome c, somatic

<b><i>Perk</i></b>	Genetic Information Processing Folding, sorting and degradation	eukaryotic translation initiation factor 2-alpha kinase 3
<b><i>Fadd</i></b>	Signal transduction TNF signaling pathway	FAS-associated death domain protein
<b><i>Fas</i></b>	Signal transduction MAPK ,TNF signaling pathway	Fas cell surface death receptor tumor necrosis factor receptor superfamily member 6
<b><i>Appbp1</i></b>	Ubiquitin-activating enzymes	amyloid beta precursor protein binding protein 1
<b><i>Gapdh</i></b>	Metabolism, Carbon metabolism Biosynthesis of amino acids	glyceraldehyde-3-phosphate dehydrogenase
<b><i>Gq</i></b>	Signal transduction Rap1 ,Calcium, Sphingolipid,cGMP - PKG signaling pathway	guanine nucleotide binding protein (G protein), q polypeptide
<b><i>Nmdar</i></b>	Signal transduction Ras ,Rap1,Calcium,cAMP signaling pathway	glutamate receptor, ionotropic, N-methyl D-aspartate 1
<b><i>Gsk3b</i></b>	Signal transduction ErbB,Wnt, Hedgehog, Hippo, PI3K-Akt signaling pathway	glycogen synthase kinase 3 beta
<b><i>Ide</i></b>	Metalloendopeptidase, insulin	insulin-degrading enzyme
<b><i>Il1b</i></b>	Signal transduction MAPK ,NF-kappa B, TNF signaling pathway	interleukin 1, beta
<b><i>Ip3r</i></b>	Signal transduction Calcium signaling pathway,Phosphatidylinositol signaling system cGMP - PKG signaling pathway	inositol 1,4,5-trisphosphate receptor, type 1
<b><i>Ire1a</i></b>	Genetic Information Processing Folding, sorting and degradation	endoplasmic reticulum to nucleus signaling 1
<b><i>Lpl</i></b>	Lipid metabolism Glycerolipid metabolism	lipoprotein lipase
<b><i>Lrp1</i></b>	lipid metabolism,alpha-2-macroglobulin receptor	low density lipoprotein receptor-related protein 1
<b><i>ERK/Mapk2</i></b>	Signal transduction Ras,Rap1 , MAPK, ErbB ,TGF-beta VEGF ,TNF ,HIF-1 ,FoxO ,Phospholipase D ,Sphingolipid, cAMP , cGMP - PKG ,PI3K-Akt mTOR signaling pathway	mitogen-activated protein kinase 1
<b><i>Mapt/Tau</i></b>		microtubule-associated protein tau

<b><i>Ncstn</i></b>	Signal transduction MAPK signaling pathway Signal transduction Notch signaling pathway	nicastrin
<b><i>NEP/Mme</i></b>	Immune system,	membrane metallo-endopeptidase, neprilysin
<b><i>Nos1</i></b>	Amino acid metabolism	nitric oxide synthase 1
<b><i>Plcb1</i></b>	Carbohydrate metabolism,Signal transduction	phospholipase C, beta 1 (phosphoinositide-specific)
<b><i>Psen1</i></b>	Signal transduction Wnt, Notch,Neurotrophin signaling pathway	presenilin 1
<b><i>Pen-2</i></b>	Signal transduction Notch signaling pathway	presenilin enhancer gamma secretase subunit
<b><i>Ryr3</i></b>	Signal transduction Calcium signaling Oxytocin signaling pathway	ryanodine receptor 3
<b><i>Snca</i></b>	pre-Synaptic transmission, secondary	synuclein, alpha (non A4 component of amyloid precursor)
<b><i>Tnf</i></b>	Signal transduction MAPK, TGF-beta, NF-kappa B , TNF ,Sphingolipid, mTOR, signaling pathway	tumor necrosis factor

**Table S 2:** Brief description of all the genes and their function involved in Alzheimer disease on set.