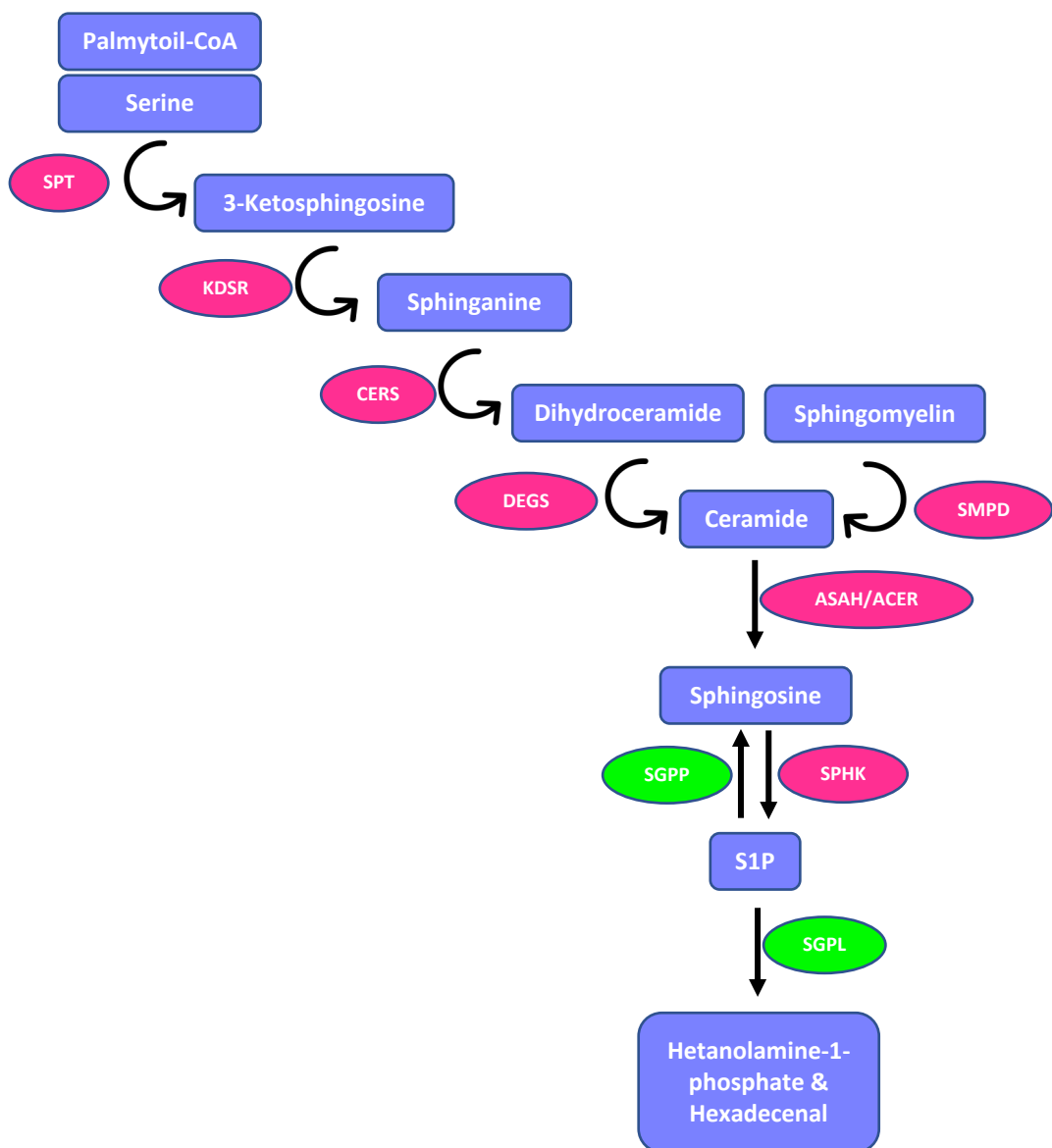


# Supplementary Material

## **Sphingosine-1-Phosphate Shapes Healthy Monocytes into An Immunosuppressive Phenotype**

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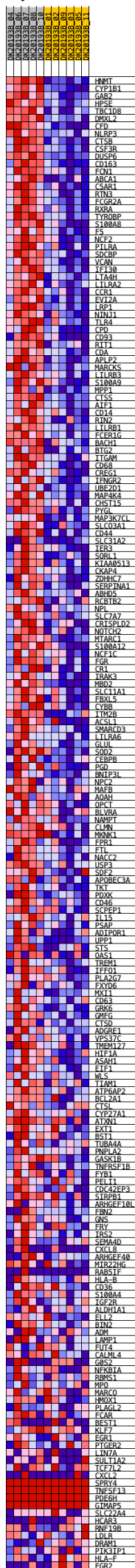
<sup>a</sup>University of Salerno, Department of Pharmacy (DIFARMA), 84084 Fisciano, Salerno, Italy, <sup>b</sup>PhD Program in Drug Discovery and Development, University of Salerno, Department of Pharmacy (DIFARMA), 84084 Fisciano, Salerno, Italy



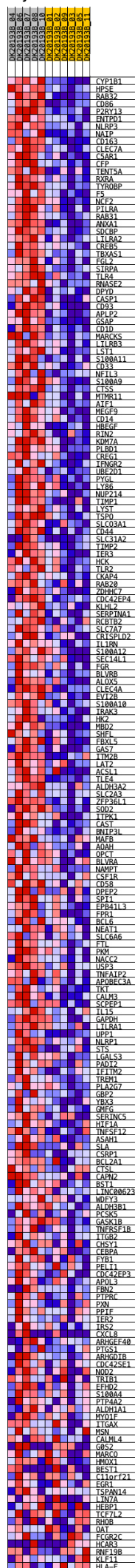
**Supplementary Fig. 1. Sphingosine-1-phosphate (S1P) biosynthetic pathway.** Serine palmitoyl-transferase (SPT), 3-ketodihydrosphingosine reductase (KDSR), ceramide synthase (CERS), dihydroceramide desaturase (DEGS), sphingomyelin phosphodiesterase (SMPD), ceramidase (ASAH/ACER), sphingosine kinase (SPHK), sphingosine-1-phosphate phosphatases (SGPP), sphingosine-1-phosphate lyase (SGPL).

**A**

Monocyte VS MDC UP

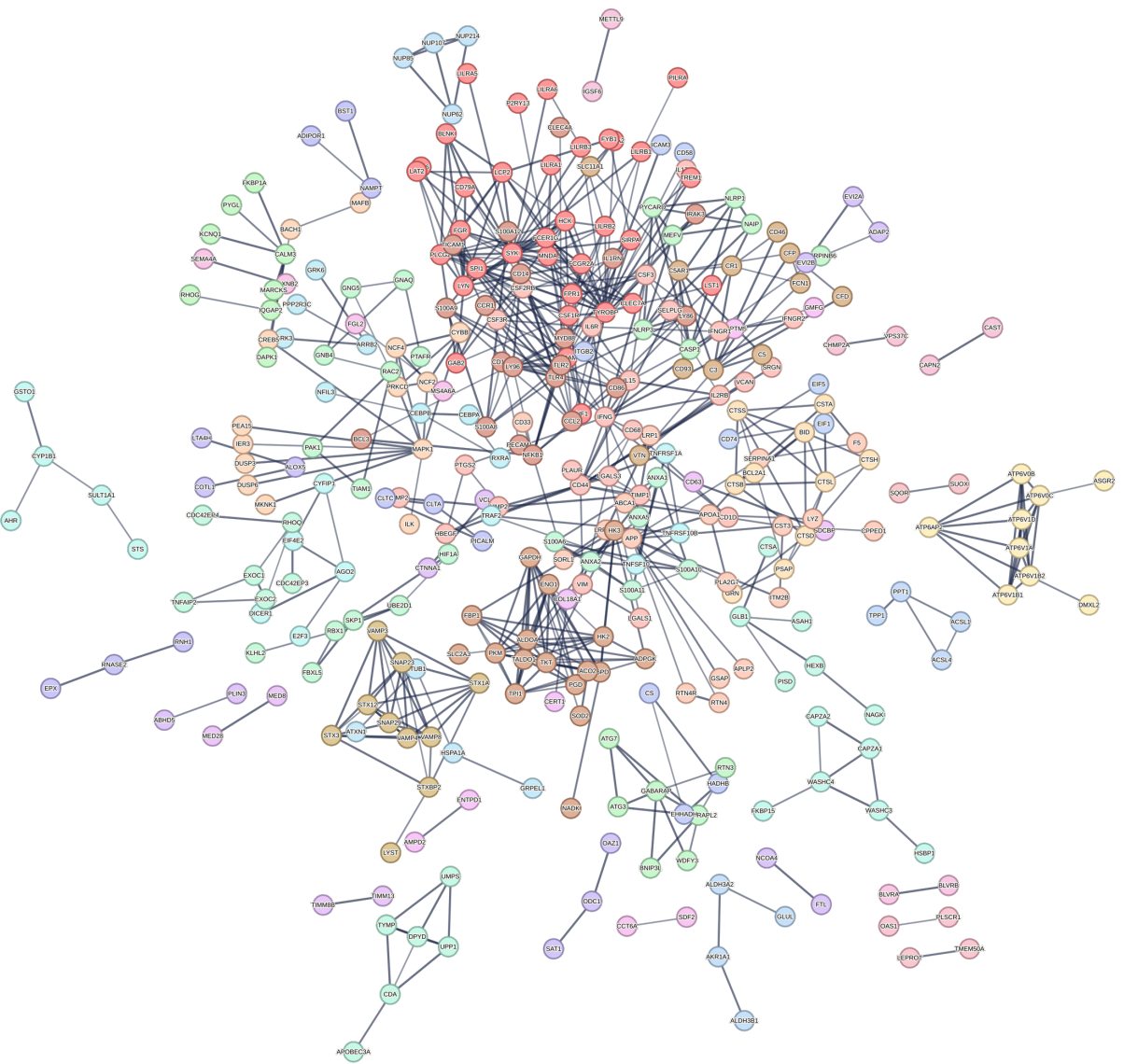
**B**

Monocyte VS pDC UP



**Supplementary Fig. 2. Heatmaps of the 199 genes more representative in monocytes enriched gene sets for each sample of cluster 1 and cluster 0. GSEA analysis was performed according to C7 immunologic signature gene sets database (c7.all.v2023.1.Hs.symbols.gmt) on 26467 transcripts from cluster 1 vs cluster 0. Heatmaps representing the monocytes enriched gene sets compared to myeloid dendritic cells (mDCs) (A) and plasmacytoid dendritic cells (pDCs) (B) in cluster 1 (grey samples) and cluster 0 (yellow samples).**

**Supplementary Figure 2**

**A****B**

bubble	cluster Id	gene count	protein names		Cluster	Count	Protein Names
					Cluster 29	4	ACSL1,ACSL4,PPT1,TPP1
	Cluster 1	34	AIF1,BCL6,BLNK,CD79A,CLEC7A,CSF1R,FCER1G,FCGR2A,FGR,FPR1,FYB1,GAB2,HC...		Cluster 30	3	CD74,EIF1,EIF5
	Cluster 2	25	CD1D,CD44,CD68,CSF2RB,CSF3,CSF3R,HBEGF,IFNG,IFNGR1,IFNGR2,IL15,IL17RA,IL...		Cluster 31	3	CD58,ICAM3,ITGB2
	Cluster 3	20	BCL3,CCL2,CCR1,CD14,CD163,CD86,CLEC4A,IL1RN,IRAK3,LY86,LY96,MYD88,NFKB...		Cluster 32	3	CS,EHHADH,HADHB
	Cluster 4	18	ABCA1,APLP2,APOA1,APP,CD33,CPED1,CST3,F5,GSAP,ITM2B,LRP1,LRPAP1,LYZ,P...		Cluster 33	3	CLTA,CLTC,PICALM
	Cluster 5	17	ACO2,ADPGK,ALDOA,ENO1,FBP1,G6PD,GADPH,HK2,HK3,NADK,PGD,PKM,SLC2A3,S...		Cluster 34	3	ADIPOR1,BST1,NAMPT
	Cluster 6	14	BACH1,CREB5,CYBB,DUSP3,DUSP6,IER3,ILK,MAFB,MAPK1,MKNK1,NCF2,NCF4,PEA...		Cluster 35	3	EPX,RNASE2,RNH1
	Cluster 7	11	C3,C5,C5AR1,CD46,CD93,CFD,CFP,CR1,FCN1,SLC11A1,VTN		Cluster 36	3	ALOX5,COTL1,LTA4H
	Cluster 8	10	BCL2A1,BID,CSTA,CTSB,CTSD,CTSH,CTSL,CTSS,GRN,PSAP		Cluster 37	3	OAZ1,ODC1,SAT1
	Cluster 9	10	LYST,SNAP23,SNAP29,STX12,STX1A,STX3,STXB2,VAMP3,VAMP4,VAMP8		Cluster 38	3	ADAP2,EVI2A,EVI2B
	Cluster 10	9	ASGR2,ATP6A2,ATP6V0B,ATP6V0C,ATP6V1A,ATP6V1B1,ATP6V1B2,ATP6V1D,DM...		Cluster 39	2	FTL,NCOA4
	Cluster 11	8	CALM3,DAPK1,FKBP1A,IQGAP2,KCNQ1,MARCKS,PYGL,RHOG		Cluster 40	2	ABHD5,PLIN3
	Cluster 12	7	ATG3,ATG7,BNIP3L,GABARAP,GABARAPL2,RTN3,WDFY3		Cluster 41	2	CTNNA1,VCL
	Cluster 13	7	CASP1,MEFV,NAIP,NLRP1,NLRP3,PYCARD,SERPINB6		Cluster 42	2	TIMM13,TIMM8B
	Cluster 14	7	GNAQ,GNB4,GNG5,PAK1,PTAFR,RAC2,TIAM1		Cluster 43	2	MED28,MED8
	Cluster 15	6	FBXL5,HIF1A,KLHL2,RBX1,SKP1,UBE2D1		Cluster 44	2	CD63,SDCBP
	Cluster 16	6	ANXA1,ANXA2,ANXA5,S100A10,S100A11,S100A6		Cluster 45	2	CERT1,COL18A1
	Cluster 17	6	CDC42EP3,CDC42EP4,EXOC1,EXOC2,RHOQ,TNFAIP2		Cluster 46	2	AMPD2,ENTPD1
	Cluster 18	6	APOBEC3A,CDA,DPYD,TYMP,UUPS,UPP1		Cluster 47	2	GMFG,LAPTM5
	Cluster 19	6	ASAH1,CTSA,GLB1,HEXB,NAGK,PISD		Cluster 48	2	CCT6A,SDF2
	Cluster 20	6	CAPZA1,CAPZA2,FKBP15,HSBP1,WASHC3,WASHC4		Cluster 49	2	FGL2,MS4A6A
	Cluster 21	5	AHR,CYP1B1,GSTO1,STS,SULT1A1		Cluster 50	2	PLXNB2,SEMA4A
	Cluster 22	5	AGO2,CYFIP1,DICER1,E2F3,EIF4E2		Cluster 51	2	BLVRA,BLVRB
	Cluster 23	4	TNFRSF10B,TNFRSF1A,TNFSF10,TRAF2		Cluster 52	2	IGSF6,METTL9
	Cluster 24	4	CEBPA,CEBPB,NFIL3,RXRA		Cluster 53	2	CAPN2,CAST
	Cluster 25	4	ARRB2,GRK3,GRK6,PPP2R3C		Cluster 54	2	CHMP2A,VPS37C
	Cluster 26	4	ATXN1,GRPEL1,HSPA1A,STUB1		Cluster 55	2	OAS1,PLSCR1
	Cluster 27	4	NUP107,NUP214,NUP62,NUP85		Cluster 56	2	LEPROT,TMEM50A
	Cluster 28	4	AKR1A1,ALDH3A2,ALDH3B1,GLUL		Cluster 57	2	SQOR,SUOX

**Supplementary Fig. 3. STRING analysis-derived sub-clusters.** A STRING analysis was performed on 435 transcripts enriched in the monocytes from cluster 1 compared to cluster 0, and 57 sub-clusters were obtained (A and B). The inflation parameter Markov Cluster (MCL) was set at 1.8.

**Supplementary Table 1. Healthy subjects' characteristics (GSE192829 dataset).**

<b>Samples</b>	<b>Sex</b>	<b>Age</b>	<b>Smoking history</b>
DK20193B_01	Male	42	None
DK20193B_02	Male	31	None
DK20193B_03	Female	34	None
DK20193B_04	Female	58	None
DK20193B_05	Female	45	None
DK20193B_06	Female	46	None
DK20193B_07	Female	48	None
DK20193B_08	Female	43	None
DK20193B_09	Male	66	None
DK20193B_10	Female	37	None
DK20193B_11	Female	40	None
	<b>Male/Females</b>	<b>Mean±std. deviation</b>	
	3/8	44.5±10.2	

**Supplementary Table 2. Transcripts enriched in monocytes gene sets in cluster 1 compared to cluster 0.**

	<b>Symbol</b>	<b>Description</b>
<b>1</b>	ABCA1	ATP Binding Cassette Subfamily A Member 1
<b>2</b>	ABHD5	Abhydrolase Domain Containing 5, Lysophosphatidic Acid Acyltransferase
<b>3</b>	ABR	ABR Activator Of RhoGEF And GTPase
<b>4</b>	ACOT9	Acyl-CoA Thioesterase 9
<b>5</b>	ACSL1	Acyl-CoA Synthetase Long Chain Family Member 1
<b>6</b>	ACSL4	Acyl-CoA Synthetase Long Chain Family Member 4
<b>7</b>	ADA2	Adenosine Deaminase 2
<b>8</b>	ADAP2	ArfGAP With Dual PH Domains 2
<b>9</b>	ADGRE1	Adhesion G Protein-Coupled Receptor E1
<b>10</b>	ADGRE2	Adhesion G Protein-Coupled Receptor E2
<b>11</b>	ADIPOR1	Adiponectin Receptor 1
<b>12</b>	ADPGK	ADP Dependent Glucokinase
<b>13</b>	AHR	Aryl Hydrocarbon Receptor
<b>14</b>	AIF1	Allograft Inflammatory Factor 1
<b>15</b>	AKR1A1	Aldo-Keto Reductase Family 1 Member A1
<b>16</b>	ALDH3A2	Aldehyde Dehydrogenase 3 Family Member A2
<b>17</b>	ALDH3B1	Aldehyde Dehydrogenase 3 Family Member B1
<b>18</b>	ALDOA	Aldolase, Fructose-Bisphosphate A
<b>19</b>	ALOX5	Arachidonate 5-Lipoxygenase
<b>20</b>	AMPD2	Adenosine Monophosphate Deaminase 2
<b>21</b>	ANXA1	Annexin A1
<b>22</b>	ANXA2	Annexin A2
<b>23</b>	ANXA5	Annexin A5
<b>24</b>	AOAH	Acyloxyacyl Hydrolase
<b>25</b>	AP1S2	Adaptor Related Protein Complex 1 Subunit Sigma 2
<b>26</b>	APLP2	Amyloid Beta Precursor Like Protein 2
<b>27</b>	APOBEC3A	Apolipoprotein B mRNA Editing Enzyme Catalytic Subunit 3A
<b>28</b>	APOBR	Apolipoprotein B Receptor
<b>29</b>	APP	Amyloid Beta Precursor Protein
<b>30</b>	ARHGAP26	Rho GTPase Activating Protein 26
<b>31</b>	ARRB2	Arrestin Beta 2
<b>32</b>	ASAH1	N-Acylsphingosine Amidohydrolase 1
<b>33</b>	ASGR2	Asialoglycoprotein Receptor 2
<b>34</b>	ATG3	Autophagy Related 3
<b>35</b>	ATG7	Autophagy Related 7
<b>36</b>	ATP10D	ATPase Phospholipid Transporting 10D
<b>37</b>	ATP5MJ	ATP Synthase Membrane Subunit J
<b>38</b>	ATP6AP2	ATPase H+ Transporting Accessory Protein 2

<b>39</b>	ATP6V0B	ATPase H+ Transporting V0 Subunit B
<b>40</b>	ATP6V0C	ATPase H+ Transporting V0 Subunit C
<b>41</b>	ATP6V1A	ATPase H+ Transporting V1 Subunit A
<b>42</b>	ATP6V1B2	ATPase H+ Transporting V1 Subunit B2
<b>43</b>	ATXN1	Ataxin 1
<b>44</b>	BACH1	BTB Domain And CNC Homolog 1
<b>45</b>	BCL2A1	BCL2 Related Protein A1
<b>46</b>	BCL3	BCL3 Transcription Coactivator
<b>47</b>	BCL6	BCL6 Transcription Repressor
<b>48</b>	BID	BH3 Interacting Domain Death Agonist
<b>49</b>	BLVRA	Biliverdin Reductase A
<b>50</b>	BLVRB	Biliverdin Reductase B
<b>51</b>	BNIP3L	BCL2 Interacting Protein 3 Like
<b>52</b>	BST1	Bone Marrow Stromal Cell Antigen 1
<b>53</b>	BTG2	BTG Anti-Proliferation Factor 2
<b>54</b>	C5AR1	Complement C5a Receptor 1
<b>55</b>	CALM3	Calmodulin 3
<b>56</b>	CAPG	Capping Actin Protein, Gelsolin Like
<b>57</b>	CAPN2	Calpain 2
<b>58</b>	CAPZA1	Capping Actin Protein Of Muscle Z-Line Subunit Alpha 1
<b>59</b>	CAPZA2	Capping Actin Protein Of Muscle Z-Line Subunit Alpha 2
<b>60</b>	CASP1	Caspase 1
<b>61</b>	CAST	Calpastatin
<b>62</b>	CCDC88A	Coiled-Coil Domain Containing 88A
<b>63</b>	CCR1	C-C Motif Chemokine Receptor 1
<b>64</b>	CCT6A	Chaperonin Containing TCP1 Subunit 6A
<b>65</b>	CD14	CD14 Molecule
<b>66</b>	CD163	CD163 Molecule
<b>67</b>	CD1D	CD1d Molecule
<b>68</b>	CD33	CD33 Molecule
<b>69</b>	CD44	CD44 Molecule
<b>70</b>	CD46	CD46 Molecule
<b>71</b>	CD58	CD58 Molecule
<b>72</b>	CD63	CD63 Molecule
<b>73</b>	CD68	CD68 Molecule
<b>74</b>	CD86	CD86 Molecule
<b>75</b>	CD93	CD93 Molecule
<b>76</b>	CDA	Cytidine Deaminase
<b>77</b>	CDC42EP3	CDC42 Effector Protein 3
<b>78</b>	CDC42EP4	CDC42 Effector Protein 4
<b>79</b>	CEBPA	CCAAT Enhancer Binding Protein Alpha
<b>80</b>	CEBPB	CCAAT Enhancer Binding Protein Beta
<b>81</b>	CERT1	Ceramide Transporter 1

<b>82</b>	CFD	Complement Factor D
<b>83</b>	CFP	Complement Factor Properdin
<b>84</b>	CHMP2A	Charged Multivesicular Body Protein 2A
<b>85</b>	CHP1	Calcineurin Like EF-Hand Protein 1
<b>86</b>	CHST15	Carbohydrate Sulfotransferase 15
<b>87</b>	CKAP4	Cytoskeleton Associated Protein 4
<b>88</b>	CKLF	Chemokine Like Factor
<b>89</b>	CLEC4A	C-Type Lectin Domain Family 4 Member A
<b>90</b>	CLEC7A	C-Type Lectin Domain Containing 7A
<b>91</b>	CLMN	Calmin
<b>92</b>	CLTC	Clathrin Heavy Chain
<b>93</b>	CNBP	CCHC-Type Zinc Finger Nucleic Acid Binding Protein
<b>94</b>	COQ2	Coenzyme Q2, Polyprenyltransferase
<b>95</b>	CORO1C	Coronin 1C
<b>96</b>	COTL1	Coactosin Like F-Actin Binding Protein 1
<b>97</b>	CPD	Carboxypeptidase D
<b>98</b>	CPPED1	Calcineurin Like Phosphoesterase Domain Containing 1
<b>99</b>	CPVL	Carboxypeptidase Vitellogenic Like
<b>100</b>	CR1	Complement C3b/C4b Receptor 1 (Knops Blood Group)
<b>101</b>	CREB5	CAMP Responsive Element Binding Protein 5
<b>102</b>	CREG1	Cellular Repressor Of E1A Stimulated Genes 1
<b>103</b>	CRISPLD2	Cysteine Rich Secretory Protein LCCL Domain Containing 2
<b>104</b>	CS	Citrate Synthase
<b>105</b>	CSF1R	Colony Stimulating Factor 1 Receptor
<b>106</b>	CSF2RB	Colony Stimulating Factor 2 Receptor Subunit Beta
<b>107</b>	CSF3R	Colony Stimulating Factor 3 Receptor
<b>108</b>	CSNK1A1	Casein Kinase 1 Alpha 1
<b>109</b>	CST3	Cystatin C
<b>110</b>	CSTA	Cystatin A
<b>111</b>	CTBP2	C-Terminal Binding Protein 2
<b>112</b>	CTNNA1	Catenin Alpha 1
<b>113</b>	CTSA	Cathepsin A
<b>114</b>	CTSB	Cathepsin B
<b>115</b>	CTSD	Cathepsin D
<b>116</b>	CTSH	Cathepsin H
<b>117</b>	CTSL	Cathepsin L
<b>118</b>	CTSS	Cathepsin S
<b>119</b>	CYBB	Cytochrome B-245 Beta Chain
<b>120</b>	CYFIP1	Cytoplasmic FMR1 Interacting Protein 1
<b>121</b>	CYP1B1	Cytochrome P450 Family 1 Subfamily B Member 1
<b>122</b>	CYP27A1	Cytochrome P450 Family 27 Subfamily A Member 1
<b>123</b>	CYRIA	CYFIP Related Rac1 Interactor A
<b>124</b>	DAPK1	Death Associated Protein Kinase 1



<b>125</b>	DEF8	Differentially Expressed In FDCP 8 Homolog
<b>126</b>	DENND5A	DENN Domain Containing 5A
<b>127</b>	DIAPH2	Diaphanous Related Formin 2
<b>128</b>	DICER1	Dicer 1, Ribonuclease III
<b>129</b>	DMXL2	Dmx Like 2
<b>130</b>	DOK1	Docking Protein 1
<b>131</b>	DPEP2	Dipeptidase 2
<b>132</b>	DPYD	Dihydropyrimidine Dehydrogenase
<b>133</b>	DUSP3	Dual Specificity Phosphatase 3
<b>134</b>	DUSP6	Dual Specificity Phosphatase 6
<b>135</b>	DYNLT1	Dynein Light Chain Tctex-Type 1
<b>136</b>	E2F3	E2F Transcription Factor 3
<b>137</b>	EIF1	Eukaryotic Translation Initiation Factor 1
<b>138</b>	EIF4E2	Eukaryotic Translation Initiation Factor 4E Family Member 2
<b>139</b>	ENO1	Enolase 1
<b>140</b>	ENTPD1	Ectonucleoside Triphosphate Diphosphohydrolase 1
<b>141</b>	EPB41L3	Erythrocyte Membrane Protein Band 4.1 Like 3
<b>142</b>	EVI2A	Ecotropic Viral Integration Site 2A
<b>143</b>	EVI2B	Ecotropic Viral Integration Site 2B
<b>144</b>	EXOC1	Exocyst Complex Component 1
<b>145</b>	EXT1	Exostosin Glycosyltransferase 1
<b>146</b>	F5	Coagulation Factor V
<b>147</b>	FBP1	Fructose-Bisphosphatase 1
<b>148</b>	FBXL5	F-Box And Leucine Rich Repeat Protein 5
<b>149</b>	FCER1G	Fc Epsilon Receptor Ig
<b>150</b>	FCGR2A	Fc Gamma Receptor IIa
<b>151</b>	FCN1	Ficolin 1
<b>152</b>	FEZ2	Fasciculation And Elongation Protein Zeta 2
<b>153</b>	FGL2	Fibrinogen Like 2
<b>154</b>	FGR	FGR Proto-Oncogene, Src Family Tyrosine Kinase
<b>155</b>	FKBP15	FKBP Prolyl Isomerase Family Member 15
<b>156</b>	FKBP1A	FKBP Prolyl Isomerase 1A
<b>157</b>	FPR1	Formyl Peptide Receptor 1
<b>158</b>	FTL	Ferritin Light Chain
<b>159</b>	FXYD6	FXYD Domain Containing Ion Transport Regulator 6
<b>160</b>	FYB1	FYN Binding Protein 1
<b>161</b>	G6PD	Glucose-6-Phosphate Dehydrogenase
<b>162</b>	GAB2	GRB2 Associated Binding Protein 2
<b>163</b>	GABARAP	GABA Type A Receptor-Associated Protein
<b>164</b>	GAPDH	Glyceraldehyde-3-Phosphate Dehydrogenase
<b>165</b>	GAS7	Growth Arrest Specific 7
<b>166</b>	GCA	Grancalcin
<b>167</b>	GIMAP4	GTPase, IMAP Family Member 4

<b>168</b>	GLB1	Galactosidase Beta 1
<b>169</b>	GLRX2	Glutaredoxin 2
<b>170</b>	GLUL	Glutamate-Ammonia Ligase
<b>171</b>	GMFG	Glia Maturation Factor Gamma
<b>172</b>	GNAQ	G Protein Subunit Alpha Q
<b>173</b>	GNG5	G Protein Subunit Gamma 5
<b>174</b>	GPX1	Glutathione Peroxidase 1
<b>175</b>	GRK3	G Protein-Coupled Receptor Kinase 3
<b>176</b>	GRK6	G Protein-Coupled Receptor Kinase 6
<b>177</b>	GRN	Granulin Precursor
<b>178</b>	GRPEL1	GrpE Like 1, Mitochondrial
<b>179</b>	GSAP	Gamma-Secretase Activating Protein
<b>180</b>	GSTO1	Glutathione S-Transferase Omega 1
<b>181</b>	HADHB	Hydroxyacyl-CoA Dehydrogenase Trifunctional Multienzyme Complex Subunit Beta
<b>182</b>	HBEGF	Heparin Binding EGF Like Growth Factor
<b>183</b>	HCK	HCK Proto-Oncogene, Src Family Tyrosine Kinase
<b>184</b>	HEXB	Hexosaminidase Subunit Beta
<b>185</b>	HIF1A	Hypoxia Inducible Factor 1 Subunit Alpha
<b>186</b>	HK2	Hexokinase 2
<b>187</b>	HK3	Hexokinase 3
<b>188</b>	HNMT	Histamine N-Methyltransferase
<b>189</b>	HPSE	Heparanase
<b>190</b>	HSBP1	Heat Shock Factor Binding Protein 1
<b>191</b>	HSD17B11	Hydroxysteroid 17-Beta Dehydrogenase 11
<b>192</b>	HSPA1A	Heat Shock Protein Family A (Hsp70) Member 1A
<b>193</b>	IER3	Immediate Early Response 3
<b>194</b>	IFFO1	Intermediate Filament Family Orphan 1
<b>195</b>	IFI30	IFI30 Lysosomal Thiol Reductase
<b>196</b>	IFITM2	Interferon Induced Transmembrane Protein 2
<b>197</b>	IFNGR1	Interferon Gamma Receptor 1
<b>198</b>	IFNGR2	Interferon Gamma Receptor 2
<b>199</b>	IGSF6	Immunoglobulin Superfamily Member 6
<b>200</b>	IL15	Interleukin 15
<b>201</b>	IL17RA	Interleukin 17 Receptor A
<b>202</b>	IL1RN	Interleukin 1 Receptor Antagonist
<b>203</b>	IL6R	Interleukin 6 Receptor
<b>204</b>	ILK	Integrin Linked Kinase
<b>205</b>	IQGAP2	IQ Motif Containing GTPase Activating Protein 2
<b>206</b>	IRAK3	Interleukin 1 Receptor Associated Kinase 3
<b>207</b>	ITGAM	Integrin Subunit Alpha M
<b>208</b>	ITGB2	Integrin Subunit Beta 2
<b>209</b>	ITM2B	Integral Membrane Protein 2B

<b>210</b>	ITPK1	Inositol-Tetrakisphosphate 1-Kinase
<b>211</b>	KCNMB1	Potassium Calcium-Activated Channel Subfamily M Regulatory Beta Subunit 1
<b>212</b>	KCTD12	Potassium Channel Tetramerization Domain Containing 12
<b>213</b>	KDM7A	Lysine Demethylase 7A
<b>214</b>	KIAA0513	KIAA0513
<b>215</b>	KLHL2	Kelch Like Family Member 2
<b>216</b>	LAPTM5	Lysosomal Protein Transmembrane 5
<b>217</b>	LAT2	Linker For Activation Of T Cells Family Member 2
<b>218</b>	LEPROT	Leptin Receptor Overlapping Transcript
<b>219</b>	LGALS1	Galectin 1
<b>220</b>	LGALS3	Galectin 3
<b>221</b>	LILRA1	Leukocyte Immunoglobulin Like Receptor A1
<b>222</b>	LILRA2	Leukocyte Immunoglobulin Like Receptor A2
<b>223</b>	LILRA5	Leukocyte Immunoglobulin Like Receptor A5
<b>224</b>	LILRA6	Leukocyte Immunoglobulin Like Receptor A6
<b>225</b>	LILRB1	Leukocyte Immunoglobulin Like Receptor B1
<b>226</b>	LILRB2	Leukocyte Immunoglobulin Like Receptor B2
<b>227</b>	LILRB3	Leukocyte Immunoglobulin Like Receptor B3
<b>228</b>	LRP1	LDL Receptor Related Protein 1
<b>229</b>	LRPAP1	LDL Receptor Related Protein Associated Protein 1
<b>230</b>	LST1	Leukocyte Specific Transcript 1
<b>231</b>	LTA4H	Leukotriene A4 Hydrolase
<b>232</b>	LY86	Lymphocyte Antigen 86
<b>233</b>	LY96	Lymphocyte Antigen 96
<b>234</b>	LYN	LYN Proto-Oncogene, Src Family Tyrosine Kinase
<b>235</b>	LYST	Lysosomal Trafficking Regulator
<b>236</b>	LYZ	Lysozyme
<b>237</b>	MACROH2A1	MacroH2A.1 Histone
<b>238</b>	MAFB	MAF BZIP Transcription Factor B
<b>239</b>	MANBA	Mannosidase Beta
<b>240</b>	MAP3K7CL	MAP3K7 C-Terminal Like
<b>241</b>	MAP4K4	Mitogen-Activated Protein Kinase Kinase Kinase Kinase 4
<b>242</b>	MAPKAPK3	MAPK Activated Protein Kinase 3
<b>243</b>	MARCKS	Myristoylated Alanine Rich Protein Kinase C Substrate
<b>244</b>	MBD2	Methyl-CpG Binding Domain Protein 2
<b>245</b>	MBOAT7	Membrane Bound O-Acyltransferase Domain Containing 7
<b>246</b>	MCTP1	Multiple C2 And Transmembrane Domain Containing 1
<b>247</b>	MED8	Mediator Complex Subunit 8
<b>248</b>	MEGF9	Multiple EGF Like Domains 9
<b>249</b>	METTL9	Methyltransferase 9, His-X-His N1(Pi)-Histidine
<b>250</b>	MFSD1	Major Facilitator Superfamily Domain Containing 1
<b>251</b>	MID1IP1	MID1 Interacting Protein 1

<b>252</b>	MKNK1	MAPK Interacting Serine/Threonine Kinase 1
<b>253</b>	MNDA	Myeloid Cell Nuclear Differentiation Antigen
<b>254</b>	MPP1	MAGUK P55 Scaffold Protein 1
<b>255</b>	MS4A6A	Membrane Spanning 4-Domains A6A
<b>256</b>	MSRB1	Methionine Sulfoxide Reductase B1
<b>257</b>	MTARC1	Mitochondrial Amidoxime Reducing Component 1
<b>258</b>	MTMR11	Myotubularin Related Protein 11
<b>259</b>	MTMR14	Myotubularin Related Protein 14
<b>260</b>	MXI1	MAX Interactor 1, Dimerization Protein
<b>261</b>	MYD88	MYD88 Innate Immune Signal Transduction Adaptor
<b>262</b>	MYL6	Myosin Light Chain 6
<b>263</b>	NACC2	NACC Family Member 2
<b>264</b>	NADK	NAD Kinase
<b>265</b>	NAGK	N-Acetylglucosamine Kinase
<b>266</b>	NAIP	NLR Family Apoptosis Inhibitory Protein
<b>267</b>	NAMPT	Nicotinamide Phosphoribosyltransferase
<b>268</b>	NCF1C	Neutrophil Cytosolic Factor 1C (Pseudogene)
<b>269</b>	NCF2	Neutrophil Cytosolic Factor 2
<b>270</b>	NCF4	Neutrophil Cytosolic Factor 4
<b>271</b>	NCOA4	Nuclear Receptor Coactivator 4
<b>272</b>	NDFIP1	Nedd4 Family Interacting Protein 1
<b>273</b>	NEAT1	Nuclear Paraspeckle Assembly Transcript 1
<b>274</b>	NFE2	Nuclear Factor, Erythroid 2
<b>275</b>	NFIL3	Nuclear Factor, Interleukin 3 Regulated
<b>276</b>	NINJ1	Ninjurin 1
<b>277</b>	NLRP1	NLR Family Pyrin Domain Containing 1
<b>278</b>	NLRP3	NLR Family Pyrin Domain Containing 3
<b>279</b>	NOTCH2	Notch Receptor 2
<b>280</b>	NPC2	NPC Intracellular Cholesterol Transporter 2
<b>281</b>	NPL	N-Acetylneuraminate Pyruvate Lyase
<b>282</b>	NUP214	Nucleoporin 214
<b>283</b>	NUP62	Nucleoporin 62
<b>284</b>	OAS1	2'-5'-Oligoadenylate Synthetase 1
<b>285</b>	OAZ1	Ornithine Decarboxylase Antizyme 1
<b>286</b>	OTULINL	OTU Deubiquitinase With Linear Linkage Specificity Like
<b>287</b>	P2RY13	Purinergic Receptor P2Y13
<b>288</b>	PADI2	Peptidyl Arginine Deiminase 2
<b>289</b>	PAK1	P21 (RAC1) Activated Kinase 1
<b>290</b>	PCSK5	Proprotein Convertase Subtilisin/Kexin Type 5
<b>291</b>	PDLIM5	PDZ And LIM Domain 5
<b>292</b>	PDXK	Pyridoxal Kinase
<b>293</b>	PEA15	Proliferation And Apoptosis Adaptor Protein 15
<b>294</b>	PECAM1	Platelet And Endothelial Cell Adhesion Molecule 1

<b>295</b>	PGD	Phosphogluconate Dehydrogenase
<b>296</b>	PICALM	Phosphatidylinositol Binding Clathrin Assembly Protein
<b>297</b>	PID1	Phosphotyrosine Interaction Domain Containing 1
<b>298</b>	PILRA	Paired Immunoglobulin Like Type 2 Receptor Alpha
<b>299</b>	PISD	Phosphatidylserine Decarboxylase
<b>300</b>	PKM	Pyruvate Kinase M1/2
<b>301</b>	PLA2G7	Phospholipase A2 Group VII
<b>302</b>	PLAUR	Plasminogen Activator, Urokinase Receptor
<b>303</b>	PLBD1	Phospholipase B Domain Containing 1
<b>304</b>	PLCG2	Phospholipase C Gamma 2
<b>305</b>	PLIN3	Perilipin 3
<b>306</b>	PLSCR1	Phospholipid Scramblase 1
<b>307</b>	PLXNB2	Plexin B2
<b>308</b>	PLXNC1	Plexin C1
<b>309</b>	PNPLA6	Patatin Like Phospholipase Domain Containing 6
<b>310</b>	PPFIA1	PTPRF Interacting Protein Alpha 1
<b>311</b>	PPP1R3D	Protein Phosphatase 1 Regulatory Subunit 3D
<b>312</b>	PPP2R3C	Protein Phosphatase 2 Regulatory Subunit B"Gamma
<b>313</b>	PPT1	Palmitoyl-Protein Thioesterase 1
<b>314</b>	PRKCD	Protein Kinase C Delta
<b>315</b>	PSAP	Prosaposin
<b>316</b>	PTAFR	Platelet Activating Factor Receptor
<b>317</b>	PTGS2	Prostaglandin-Endoperoxide Synthase 2
<b>318</b>	PTPRE	Protein Tyrosine Phosphatase Receptor Type E
<b>319</b>	PTTG1IP	PTTG1 Interacting Protein
<b>320</b>	PYCARD	PYD And CARD Domain Containing
<b>321</b>	PYGL	Glycogen Phosphorylase L
<b>322</b>	QPCT	Glutaminyl-Peptide Cyclotransferase
<b>323</b>	QSOX1	Quiescin Sulfhydryl Oxidase 1
<b>324</b>	RAB14	RAB14, Member RAS Oncogene Family
<b>325</b>	RAB20	RAB20, Member RAS Oncogene Family
<b>326</b>	RAB31	RAB31, Member RAS Oncogene Family
<b>327</b>	RAB32	RAB32, Member RAS Oncogene Family
<b>328</b>	RBM47	RNA Binding Motif Protein 47
<b>329</b>	RCBTB2	RCC1 And BTB Domain Containing Protein 2
<b>330</b>	RHOG	Ras Homolog Family Member G
<b>331</b>	RHOQ	Ras Homolog Family Member Q
<b>332</b>	RIN2	Ras And Rab Interactor 2
<b>333</b>	RIT1	Ras Like Without CAAX 1
<b>334</b>	RNASE2	Ribonuclease A Family Member 2
<b>335</b>	RNF130	Ring Finger Protein 130
<b>336</b>	RNH1	Ribonuclease/Angiogenin Inhibitor 1
<b>337</b>	RTN3	Reticulon 3

<b>338</b>	RTN4	Reticulon 4
<b>339</b>	RXRA	Retinoid X Receptor Alpha
<b>340</b>	S100A10	S100 Calcium Binding Protein A10
<b>341</b>	S100A11	S100 Calcium Binding Protein A11
<b>342</b>	S100A12	S100 Calcium Binding Protein A12
<b>343</b>	S100A6	S100 Calcium Binding Protein A6
<b>344</b>	S100A8	S100 Calcium Binding Protein A8
<b>345</b>	S100A9	S100 Calcium Binding Protein A9
<b>346</b>	SAT1	Spermidine/Spermine N1-Acetyltransferase 1
<b>347</b>	SCPEP1	Serine Carboxypeptidase 1
<b>348</b>	SDCBP	Syndecan Binding Protei
<b>349</b>	SDF2	Stromal Cell Derived Factor 2
<b>350</b>	SEC11A	SEC11 Homolog A, Signal Peptidase Complex Subunit
<b>351</b>	SEC14L1	SEC14 Like Lipid Binding 1
<b>352</b>	SELPLG	Selectin P Ligand
<b>353</b>	SEMA4A	Semaphorin 4A
<b>354</b>	SERINC5	Serine Incorporator 5
<b>355</b>	SERPINA1	Serpin Family A Member 1
<b>356</b>	SERPINB6	Serpin Family B Member 6
<b>357</b>	SGK1	Serum/Glucocorticoid Regulated Kinase 1
<b>358</b>	SHFL	Shiftless Antiviral Inhibitor Of Ribosomal Frameshifting
<b>359</b>	SIGLEC9	Sialic Acid Binding Ig Like Lectin 9
<b>360</b>	SIRPA	Signal Regulatory Protein Alpha
<b>361</b>	SLC11A1	Solute Carrier Family 11 Member 1
<b>362</b>	SLC15A3	Solute Carrier Family 15 Member 3
<b>363</b>	SLC16A6	Solute Carrier Family 16 Member 6
<b>364</b>	SLC2A3	Solute Carrier Family 2 Member 3
<b>365</b>	SLC31A2	Solute Carrier Family 31 Member 2
<b>366</b>	SLC6A6	Solute Carrier Family 6 Member 6
<b>367</b>	SLC7A7	Solute Carrier Family 7 Member 7
<b>368</b>	SLCO3A1	Solute Carrier Organic Anion Transporter Family Member 3A1
<b>369</b>	SMARCD3	SWI/SNF Related, Matrix Associated, Actin Dependent Regulator Of Chromatin, Subfamily D, Member 3
<b>370</b>	SMCO4	Single-Pass Membrane Protein With Coiled-Coil Domains 4
<b>371</b>	SNX10	Sorting Nexin 10
<b>372</b>	SOD2	Superoxide Dismutase 2
<b>373</b>	SORL1	Sortilin Related Receptor 1
<b>374</b>	SPI1	Spi-1 Proto-Oncogene
<b>375</b>	SQOR	Sulfide Quinone Oxidoreductase
<b>376</b>	SRGN	Serglycin
<b>377</b>	STS	Steroid Sulfatase
<b>378</b>	STX12	Syntaxin 12
<b>379</b>	STX3	Syntaxin 3

<b>380</b>	STXBP2	Syntaxin Binding Protein 2
<b>381</b>	SULT1A1	Sulfotransferase Family 1A Member 1
<b>382</b>	SUOX	Sulfite Oxidase
<b>383</b>	SVIL	Supervillin
<b>384</b>	SYK	Spleen Associated Tyrosine Kinase
<b>385</b>	TALDO1	Transaldolase 1
<b>386</b>	TBC1D12	TBC1 Domain Family Member 12
<b>387</b>	TBC1D2	TBC1 Domain Family Member 2
<b>388</b>	TBC1D8	TBC1 Domain Family Member 8
<b>389</b>	TBXAS1	Thromboxane A Synthase 1
<b>390</b>	TENT5A	Terminal Nucleotidyltransferase 5A
<b>391</b>	TGFBI	Transforming Growth Factor Beta Induced
<b>392</b>	THEMIS2	Thymocyte Selection Associated Family Member 2
<b>393</b>	TIAM1	TIAM Rac1 Associated GEF 1
<b>394</b>	TIMM8B	Translocase Of Inner Mitochondrial Membrane 8 Homolog B
<b>395</b>	TIMP1	TIMP Metallopeptidase Inhibitor 1
<b>396</b>	TIMP2	TIMP Metallopeptidase Inhibitor 2
<b>397</b>	TKT	Transketolase
<b>398</b>	TLE4	TLE Family Member 4, Transcriptional Corepressor
<b>399</b>	TLR2	Toll Like Receptor 2
<b>400</b>	TLR4	Toll Like Receptor 4
<b>401</b>	TMEM11	Transmembrane Protein 11
<b>402</b>	TMEM127	Transmembrane Protein 127
<b>403</b>	TMEM50A	Transmembrane Protein 50A
<b>404</b>	TNFAIP2	TNF Alpha Induced Protein 2
<b>405</b>	TNFRSF10B	TNF Receptor Superfamily Member 10b
<b>406</b>	TNFRSF1A	TNF Receptor Superfamily Member 1A
<b>407</b>	TNS3	Tensin 3
<b>408</b>	TOR4A	Torsin Family 4 Member A
<b>409</b>	TPD52L2	TPD52 Like 2
<b>410</b>	TPP1	Tripeptidyl Peptidase 1
<b>411</b>	TREM1	Triggering Receptor Expressed On Myeloid Cells 1
<b>412</b>	TRIM8	Tripartite Motif Containing 8
<b>413</b>	TRNAU1AP	TRNA Selenocysteine 1 Associated Protein 1
<b>414</b>	TSPO	Translocator Protein
<b>415</b>	TUT7	Terminal Uridylyl Transferase 7
<b>416</b>	TYMP	Thymidine Phosphorylase
<b>417</b>	TYROBP	Transmembrane Immune Signaling Adaptor TYROBP
<b>418</b>	UBE2D1	Ubiquitin Conjugating Enzyme E2 D1
<b>419</b>	UPP1	Uridine Phosphorylase 1
<b>420</b>	USP15	Ubiquitin Specific Peptidase 15
<b>421</b>	USP3	Ubiquitin Specific Peptidase 3
<b>422</b>	VAMP3	Vesicle Associated Membrane Protein 3

<b>423</b>	VAMP8	Vesicle Associated Membrane Protein 8
<b>424</b>	VCAN	Versican
<b>425</b>	VEGFA	Vascular Endothelial Growth Factor A
<b>426</b>	VIM	Vimentin
<b>427</b>	VPS37C	Vacuolar Protein Sorting-Associated Protein 37C
<b>428</b>	WARS1	Tryptophanyl-TRNA Synthetase 1
<b>429</b>	WASHC4	WASH Complex Subunit 4
<b>430</b>	WDFY3	WD Repeat And FYVE Domain Containing 3
<b>431</b>	WLS	Wnt Ligand Secretion Mediator
<b>432</b>	YBX3	Y-Box Binding Protein 3
<b>433</b>	ZDHHC7	Zinc Finger DHHC-Type Palmitoyltransferase 7
<b>434</b>	ZFAND5	Zinc Finger AN1-Type Containing 5
<b>435</b>	ZFP36L1	ZFP36 Ring Finger Protein Like 1