**Supplementary Table 1. A total of 159 necroptosis-related genes from KEGG.**

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| 1 | TNF |  tumor necrosis factor  |
| 2 | TNFRSF1A |  TNF receptor superfamily member 1A  |
| 3 | TRADD |  TNFRSF1A associated via death domain  |
| 4 | TRAF2 |  TNF receptor associated factor 2  |
| 5 | TRAF5 |  TNF receptor associated factor 5  |
| 6 | RIPK1 |  receptor interacting serine/threonine kinase 1  |
| 7 | BIRC2 |  baculoviral IAP repeat containing 2  |
| 8 | BIRC3 |  baculoviral IAP repeat containing 3  |
| 9 | XIAP |  X-linked inhibitor of apoptosis  |
| 10 | RBCK1 |  RANBP2-type and C3HC4-type zinc finger containing 1  |
| 11 | RNF31 |  ring finger protein 31  |
| 12 | SHARPIN |  SHANK associated RH domain interactor  |
| 13 | SPATA2L |  spermatogenesis associated 2 like  |
| 14 | SPATA2 |  spermatogenesis associated 2  |
| 15 | CYLD |  CYLD lysine 63 deubiquitinase  |
| 16 | FADD |  Fas associated via death domain  |
| 17 | CASP8 |  caspase 8  |
| 18 | CFLAR |  CASP8 and FADD like apoptosis regulator  |
| 19 | RIPK3 |  receptor interacting serine/threonine kinase 3  |
| 20 | CYBB |  cytochrome b-245 beta chain  |
| 21 | CAMK2A |  calcium/calmodulin dependent protein kinase II alpha  |
| 22 | CAMK2D |  calcium/calmodulin dependent protein kinase II delta  |
| 23 | CAMK2B |  calcium/calmodulin dependent protein kinase II beta  |
| 24 | CAMK2G |  calcium/calmodulin dependent protein kinase II gamma  |
| 25 | SLC25A4 |  solute carrier family 25 member 4  |
| 26 | SLC25A5 |  solute carrier family 25 member 5  |
| 27 | SLC25A6 |  solute carrier family 25 member 6  |
| 28 | SLC25A31 |  solute carrier family 25 member 31  |
| 29 | PPID |  peptidylprolyl isomerase D  |
| 30 | VDAC1 |  voltage dependent anion channel 1  |
| 31 | VDAC2 |  voltage dependent anion channel 2  |
| 32 | VDAC3 |  voltage dependent anion channel 3  |
| 33 | GLUD2 |  glutamate dehydrogenase 2  |
| 34 | GLUD1 |  glutamate dehydrogenase 1  |
| 35 | GLUL |  glutamate-ammonia ligase  |
| 36 | PYGL |  glycogen phosphorylase L  |
| 37 | PYGM |  glycogen phosphorylase, muscle associated  |
| 38 | PYGB |  glycogen phosphorylase B  |
| 39 | MAPK8 |  mitogen-activated protein kinase 8  |
| 40 | MAPK10 |  mitogen-activated protein kinase 10  |
| 41 | MAPK9 |  mitogen-activated protein kinase 9  |
| 42 | FTH1 |  ferritin heavy chain 1  |
| 43 | FTL |  ferritin light chain  |
| 44 | PLA2G4E |  phospholipase A2 group IVE  |
| 45 | PLA2G4A |  phospholipase A2 group IVA  |
| 46 | JMJD7-PLA2G4B |  JMJD7-PLA2G4B readthrough  |
| 47 | PLA2G4B |  phospholipase A2 group IVB  |
| 48 | PLA2G4C |  phospholipase A2 group IVC  |
| 49 | PLA2G4D |  phospholipase A2 group IVD  |
| 50 | PLA2G4F |  phospholipase A2 group IVF  |
| 51 | ALOX15 |  arachidonate 15-lipoxygenase  |
| 52 | CAPN1 |  calpain 1  |
| 53 | CAPN2 |  calpain 2  |
| 54 | SMPD1 |  sphingomyelin phosphodiesterase 1  |
| 55 | MLKL |  mixed lineage kinase domain like pseudokinase  |
| 56 | PGAM5 |  PGAM family member 5 |
| 57 | DNM1L |  dynamin 1 like  |
| 58 | NLRP3 |  NLR family pyrin domain containing 3  |
| 59 | PYCARD |  PYD and CARD domain containing  |
| 60 | CASP1 |  caspase 1  |
| 61 | IL1B |  interleukin 1 beta  |
| 62 | CHMP2A |  charged multivesicular body protein 2A  |
| 63 | CHMP2B |  charged multivesicular body protein 2B  |
| 64 | CHMP3 |  charged multivesicular body protein 3  |
| 65 | RNF103-CHMP3 |  RNF103-CHMP3 readthrough  |
| 66 | CHMP4B |  charged multivesicular body protein 4B  |
| 67 | CHMP4A |  charged multivesicular body protein 4A  |
| 68 | CHMP4C |  charged multivesicular body protein 4C  |
| 69 | CHMP6 |  charged multivesicular body protein 6  |
| 70 | VPS4B |  vacuolar protein sorting 4 homolog B  |
| 71 | VPS4A |  vacuolar protein sorting 4 homolog A  |
| 72 | CHMP1B |  charged multivesicular body protein 1B  |
| 73 | CHMP1A |  charged multivesicular body protein 1A  |
| 74 | CHMP5 |  charged multivesicular body protein 5  |
| 75 | CHMP7 |  charged multivesicular body protein 7  |
| 76 | TRPM7 |  transient receptor potential cation channel subfamily M member 7  |
| 77 | IL1A |  interleukin 1 alpha  |
| 78 | IL33 |  interleukin 33  |
| 79 | HMGB1 |  high mobility group box 1  |
| 80 | TNFSF10 |  TNF superfamily member 10  |
| 81 | TNFRSF10A |  TNF receptor superfamily member 10a  |
| 82 | TNFRSF10B |  TNF receptor superfamily member 10b  |
| 83 | FASLG |  Fas ligand  |
| 84 | FAS |  Fas cell surface death receptor  |
| 85 | FAF1 |  Fas associated factor 1  |
| 86 | IFNA1 |  interferon alpha 1  |
| 87 | IFNA2 |  interferon alpha 2  |
| 88 | IFNA4 |  interferon alpha 4  |
| 89 | IFNA5 |  interferon alpha 5  |
| 90 | IFNA6 |  interferon alpha 6  |
| 91 | IFNA7 |  interferon alpha 7  |
| 92 | IFNA8 |  interferon alpha 8  |
| 93 | IFNA10 |  interferon alpha 10  |
| 94 | IFNA13 |  interferon alpha 13  |
| 95 | IFNA14 |  interferon alpha 14  |
| 96 | IFNA16 |  interferon alpha 16  |
| 97 | IFNA17 |  interferon alpha 17  |
| 98 | IFNA21 |  interferon alpha 21  |
| 99 | IFNB1 |  interferon beta 1  |
| 100 | IFNG |  interferon gamma  |
| 101 | IFNAR1 |  interferon alpha and beta receptor subunit 1  |
| 102 | IFNAR2 |  interferon alpha and beta receptor subunit 2  |
| 103 | IFNGR1 |  interferon gamma receptor 1  |
| 104 | IFNGR2 |  interferon gamma receptor 2  |
| 105 | JAK1 |  Janus kinase 1  |
| 106 | JAK2 |  Janus kinase 2  |
| 107 | JAK3 |  Janus kinase 3  |
| 108 | TYK2 |  tyrosine kinase 2  |
| 109 | STAT1 |  signal transducer and activator of transcription 1  |
| 110 | STAT2 |  signal transducer and activator of transcription 2  |
| 111 | STAT3 |  signal transducer and activator of transcription 3  |
| 112 | STAT4 |  signal transducer and activator of transcription 4  |
| 113 | STAT5A |  signal transducer and activator of transcription 5A  |
| 114 | STAT5B |  signal transducer and activator of transcription 5B  |
| 115 | STAT6 |  signal transducer and activator of transcription 6  |
| 116 | IRF9 |  interferon regulatory factor 9  |
| 117 | EIF2AK2 |  eukaryotic translation initiation factor 2 alpha kinase 2  |
| 118 | TLR4 |  toll like receptor 4  |
| 119 | TICAM2 |  toll like receptor adaptor molecule 2  |
| 120 | TICAM1 |  toll like receptor adaptor molecule 1  |
| 121 | TLR3 |  toll like receptor 3  |
| 122 | ZBP1 |  Z-DNA binding protein 1  |
| 123 | USP21 |  ubiquitin specific peptidase 21  |
| 124 | SQSTM1 |  sequestosome 1  |
| 125 | HSP90AA1 |  heat shock protein 90 alpha family class A member 1  |
| 126 | HSP90AB1 |  heat shock protein 90 alpha family class B member 1  |
| 127 | TNFAIP3 |  TNF alpha induced protein 3  |
| 128 | PARP1 |  poly(ADP-ribose) polymerase 1  |
| 129 | BID |  BH3 interacting domain death agonist  |
| 130 | BAX |  BCL2 associated X, apoptosis regulator  |
| 131 | AIFM1 |  apoptosis inducing factor mitochondria associated 1  |
| 132 | H2AX |  H2A.X variant histone  |
| 133 | H2AC20 |  H2A clustered histone 20  |
| 134 | H2AC12 |  H2A clustered histone 12  |
| 135 | H2AC1 |  H2A clustered histone 1  |
| 136 | H2AW |  H2A.W histone  |
| 137 | H2AB3 |  H2A.B variant histone 3  |
| 138 | H2AC8 |  H2A clustered histone 8  |
| 139 | H2AC4 |  H2A clustered histone 4  |
| 140 | MACROH2A2 |  macroH2A.2 histone  |
| 141 | MACROH2A1 |  macroH2A.1 histone  |
| 142 | H2AC19 |  H2A clustered histone 19  |
| 143 | H2AJ |  H2A.J histone  |
| 144 | H2AB1 |  H2A.B variant histone 1  |
| 145 | H2AC17 |  H2A clustered histone 17  |
| 146 | H2AC18 |  H2A clustered histone 18  |
| 147 | H2AC11 |  H2A clustered histone 11  |
| 148 | H2AC21 |  H2A clustered histone 21  |
| 149 | H2AZ2 |  H2A.Z variant histone 2  |
| 150 | H2AC7 |  H2A clustered histone 7  |
| 151 | H2AZ1 |  H2A.Z variant histone 1  |
| 152 | H2AC15 |  H2A clustered histone 15  |
| 153 | H2AC6 |  H2A clustered histone 6  |
| 154 | H2AC13 |  H2A clustered histone 13  |
| 155 | H2AC14 |  H2A clustered histone 14  |
| 156 | H2AC16 |  H2A clustered histone 16  |
| 157 | H2AB2 |  H2A.B variant histone 2  |
| 158 | PPIA |  peptidylprolyl isomerase A  |
| 159 | BCL2 |  BCL2 apoptosis regulator  |