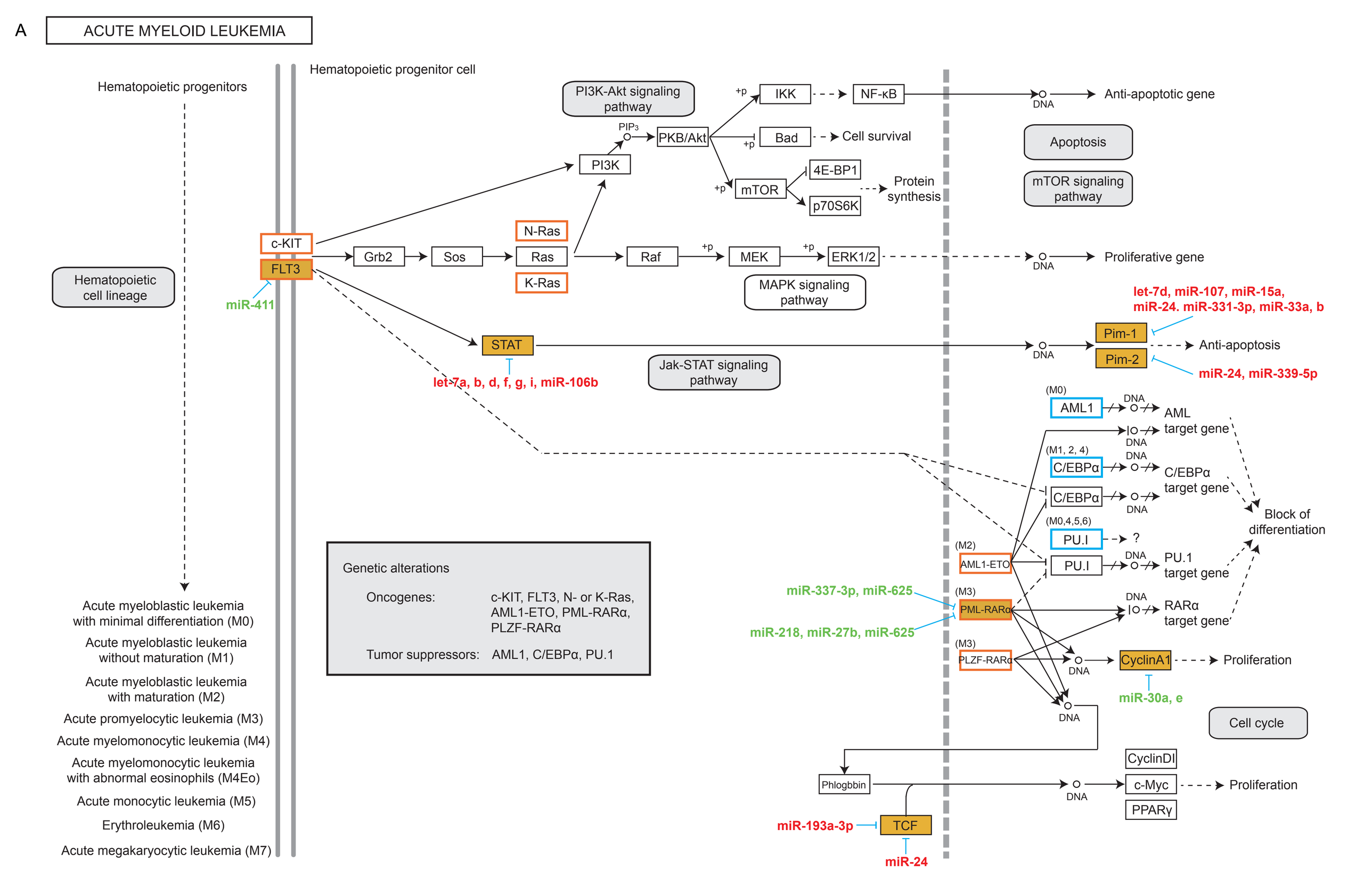
A
ACUTE MYELOID LEUKEMIA
Hematopoietic progenitors
Hematopoietic progenitor cell
Hematopoietic cell lineage
PI3K-Akt signaling pathway
PIP3
PKB/Akt
IKK
NF-κB
Bad
Cell survival
PI3K
mTOR
4E-BP1
p70S6K
Protein synthesis
Apoptosis
mTOR signaling pathway
c-KIT
FLT3
miR-411
Grb2
Sos
N-Ras
Ras
K-Ras
Raf
MEK
ERK1/2
MAPK signaling pathway
DNA
Anti-apoptotic gene
Proliferative gene
let-7d, miR-107, miR-15a, miR-24. miR-331-3p, miR-33a, b
Pim-1
Pim-2
Anti-apoptosis
miR-24, miR-339-5p
STAT
let-7a, b, d, f, g, i, miR-106b
Jak-STAT signaling pathway
(M0)
AML1
AML target gene
(M1, 2, 4)
C/EBPα
C/EBPα target gene
(M0,4,5,6)
PU.I
?
PU.1 target gene
Block of differentiation
(M2)
AML1-ETO
(M3)
PML-RARα
RARα target gene
miR-337-3p, miR-625
miR-218, miR-27b, miR-625
PLZF-RARα
CyclinA1
Proliferation
miR-30a, e
Cell cycle
Phlogbbin
CyclinDI
c-Myc
PPARγ
miR-193a-3p
TCF
miR-24
Genetic alterations
Oncogenes: c-KIT, FLT3, N- or K-Ras, AML1-ETO, PML-RARα, PLZF-RARα
Tumor suppressors: AML1, C/EBPα, PU.1
Acute myeloblastic leukemia with minimal differentiation (M0)
Acute myeloblastic leukemia without maturation (M1)
Acute myeloblastic leukemia with maturation (M2)
Acute promyelocytic leukemia (M3)
Acute myelomonocytic leukemia (M4)
Acute myelomonocytic leukemia with abnormal eosinophils (M4Eo)
Acute monocytic leukemia (M5)
Erythroleukemia (M6)
Acute megakaryocytic leukemia (M7)
B
CHRONIC MYELOID LEUKEMIA
HSC (Haematopoietic stem cell)
CLP (Common lymphoid progenitors)
CMP (Common myeloid progenitors)
GMP (Granulocyte/ macrophage progenitors)
(B cell/ T cell)
Granulocyte
CMP-CP (chronic phase of chronic myeloid leukemia)
Blast crisis
CML-BP (Blast phase of CML) (Myeloid)
CML-BP (Lymphoid)
Haematopoietic stem cell
miR-107, miR-128, miR-15a, miR-188-5p, miR-193a-3p
BCR-ABL
CRKL
CBL
CRK
PI3K-Akt signaling pathway
PI3K
PIP3
PKB/Akt
Gab2
Grb2
Shp2
Sos
Shc
Ras
MAPK signaling pathway
MEK
ERK
let-7a, b, d, f, g, i
Bad
Bcl-xl
Survival
IKK
IκBα
NF-κB
Survival, Proliferation
MDM2
p53
p27
Proliferation
MYC
?
STAT5
miR-339-5p
let-7a, b, d, f, g, i
p14 ARF
miR-125b, miR-625
Apoptosis
Cell cycle
p21
CyclinD1
CDK4/6
Rb
p16 Ink4a
E2F
G1/S progression
DNA damage
Karyotypic instability
Impaired G1cyble arrest
Reduced apoptosis
Genetic alterations
Oncogenes: BCR-ABL, EVI-1, AML-EVI1
Tumor suppressors: INK4α/ARF, p53, Rb
Hematopoietic cell lineage
p53 signaling pathway
EVI-1
AML-EVI1
CtBP
HDAC
miR-485-3p, miR-486-5p
Abnormality in growth inhibition
miR-29a, b, c
TGFβ
TGFβRI
TGFβRII
miR-130b, miR-145, miR-19a, miR-20a, miR-301a, b, miR-370, miR-411, miR-454
Smad3
Smad4
TGFβ signaling pathway