**Supplementary Information**

**Figure S1. The mutational landscape of our AML cohort.** (**A**) Frequent mutations with more than 10 counts in our cohort were showed. (**B**) The relationship between mutations was analyzed, concurrent and mutually-exclusive mutations were indicated. (**C**) The concurrent or mutually-exclusive mutations for common rearrangements in AML were exhibited.

**Figure S2. The prognostic role of *CSF3R*, *bi-allele CEBPA*, or *SF3B1* mutation in AML.** (**A-B**)The prognostic role of *CSF3R* mutation in AML, and OS (**A**) as well as PFS (**B**) were showed. (**C-D**)The OS (**C**) and PFS (**D**) of patients with *CEBPAWT* plus *single-allele CEBPAMUT*(*sCEBPAMUT*) or *bi-allele CEBPA* mutation (*dCEBPAMUT*) in AML. (**E-F**) The OS (**E**) and RFS (**F**) of *SF3B1WT*and *SF3B1MUT*groups in our AML cohort.

**Table S1. The CR rate of AML with different burdens of *IKZF1* mutation.**

**Table S2. The influence of *IKZF1* mutation on AML with different *CSF3R*-mutated status.**

**Table S3. The influence of *IKZF1* mutation on AML with different *CEBPA*-mutated status.**

**Table S4. The influence of *IKZF1* mutation on AML with different *SF3B1*-mutated status.**