Table S1. Patient characteristics of primary AML patient samples

| Patients | Gender | Age (year) | Disease status | FAB subtype | Cytogenetics | Blast purity (%) | Gene mutation |
|----------|--------|---------------|--------------------|----------------|--------------------------------|------------------|--|
| AML#136 | Female | 44 | Newly diagnosed | M2 | 46,XX(20) | 80 | CEBPA Double mutation |
| AML#137 | Female | 62 | Newly diagnosed | M2 | 45,X,-X,t(8;21)(q22;q22) | 47 | RUNX1-RUNX1T1 |
| AML#138 | Female | 46 | Relapsed | M4 | 46,XX | 68.5 | NPM-1 |
| AML#139 | Female | 44 | Relapsed | M5 | 46,XX | 84.5 | NPM-1, FLT3-ITD, IDH2, DNMT3A |
| AML#140 | Female | 33 | Newly diagnosed | M3 | 46,XX,t(15;17)(q22;q21) | 97.5 | PML-RARα |
| AML#141 | Female | 40 | Newly diagnosed | M5 | 46,XX | 39 | NA |
| AML#142 | Female | 64 | Newly diagnosed | M2 | 46,XX | 53.5 | DNMT3A, PHF6, STAG2, TET2 mutation |
| AML#143 | Male | 72 | Newly diagnosed | M5 | 46,XY | 83.5 | DNMT3A, NPM1, NRAS, SF3B1, TET2 mutation |
| AML#144 | Female | 64 | Newly diagnosed | M4 | 46,XX | 20.5 | DNMT3A, FLT3-ITD, NPM1, TET2 mutation |
| AML#145 | Male | 41 | Newly diagnosed | M5 | 46,XY,t(6;11)(q27;q23) | 88 | KRAS mutation |
| AML#146 | Female | 20 | Relapsed | M2 | 46,XX | 62.5 | CEBPA Double mutation |
| AML#147 | Male | 41 | Newly diagnosed | M2 | 46,XY,t(8;21)(q22;q22) | 69 | TET2 mutation |
| AML#148 | Male | 54 | Relapsed | M5 | 46,XY | 93 | NPM1, FLT3-ITD, DNMT3A mutation |
| AML#149 | Male | 48 | Newly diagnosed | M4 | 46,XY | 55.5 | FLT3-ITD mutation |
| AML#150 | Male | 48 | Newly diagnosed | M2 | 46,XY | 68 | CEBPAdm, IDH2 |
| AML#151 | Male | 26 | Newly diagnosed | M3 | 46,XY | 88 | |
| AML#152 | Female | 49 | Newly diagnosed | M5 | 46,XX | 85 | DNMT3A, NPM1 |
| AML#153 | Male | 54 | Relapsed | M2 | 46,XY | 29 | RUNX1, IDH2, DNMT3A |
| AML#154 | Female | 75 | Untreated | M5 | NA | 37 | |
| AML#155 | Male | 68 | Newly diagnosed | M5 | 46,XY | 96.5 | FLT3-ITD, NPM1, DNMT3A |
| AML#156 | Female | 21 | Relapsed | M3 | 46,XX | 88 | |
| AML#157 | Male | 59 | Newly diagnosed | M3 | 44,XY,-1,-12,add(16p),add(17q) | 95.5 | N-RAS, TET2, TP53 |
| AML#158 | Male | 53 | Relapsed | M2 | NA | 98 | NA |
| AML#166 | Male | 57 | Newly diagnosed | M5 | 46, XY | 66 | DNMT3A, TET2, NPM-1 |
| AML#170 | Female | 50 | Newly diagnosed | M4 | 46,XX,t(3;3)(q21;q26) | 72 | SF3B1 |
| AML#171 | Female | 59 | Newly diagnosed | M2 | 47,XX,+8 | 60.5 | FLT3-ITD, DNMT3A |
| AML#172 | Female | 54 | Newly diagnosed | M2 | 46,XX | 58.5 | CEBPAdm, IDH2, N-RAS |
| AML#173 | Female | 66 | Newly diagnosed | M2 | 46,XX | 89.5 | FLT3-ITD, DNMT3A |
| AML#174 | Female | 1 | Newly diagnosed | M1 | 46,XX | 87 | |
| AML#175 | Male | 4 | Newly diagnosed | M2 | 46,XY | 56.5 | |
| AML#176 | Male | 35 | Newly diagnosed | M2 | 46,XY | 85 | GATA2, c-Kit |
| AML#177 | Male | 5 | Newly diagnosed | M2 | 46,XY | 90 | MLL-AF9 |

Table S1 continued

| Patients | Gender | Age (year) | Disease status | FAB subtype | Cytogenetics | Blast purity (%) | Gene mutation |
|----------|--------|---------------|--------------------|----------------|--|------------------|--|
| AML#180 | Male | 68 | Relapsed | M5 | 46,XY | 96 | Flt3-ITD, NPM1, DNMT3A |
| AML#181 | Female | 30 | Newly diagnosed | M4 | 46,XX | 77.5 | Flt3-ITD, NPM1, IDH2, N-RAS |
| AML#182 | Female | 44 | Newly diagnosed | M2 | 45,X,- X,t(6;7)(q25;q22),t(8;21)(q22;q22) | 27 | MPL W515L |
| AML#183 | Female | 47 | Relapsed | M4 | 46,XX | 88 | NPM1, DNMT3A, IDH2, PTPN11 |
| AML#184 | Female | 12 | Newly diagnosed | M3 | 46,XX,t(15;17)(q22;q21) | 93.5 | PML/RARa |
| AML#185 | Female | 37 | Newly diagnosed | M2 | 46,XX | 87.5 | FLT3-ITD, NPM1, IDH2 |
| AML#186 | Female | 41 | Newly diagnosed | M2 | 46,XX | 30.5 | Flt3-ITD, NPM1, DNMT3A, TP53 |
| AML#187 | Male | 50 | Newly diagnosed | M4 | 47,XY,+8 | 96.5 | FLT3-ITD |
| AML#188 | Female | 55 | Newly diagnosed | M3 | 46,XX,t(15;17)(q22;q21) | 93 | FLT3-ITD, SH2B3 |
| AML#189 | Male | 79 | Newly diagnosed | M5 | 46,XY | 74.5 | ASXL1, RUNX1, CEBPAsm, TET2, SRSF2, STAT5B, CREBBP, PHF6 |
| AML#190 | Female | 51 | Newly diagnosed | M4 | NA | 94 | NA |
| AML#192 | Female | 1 | Newly diagnosed | M4/M5 | 46,XX | 29.5/17.5 | |
| AML#196 | Female | 40 | Newly diagnosed | M5 | 46,XX | 98 | NPM-1, FLT3-ITD, DNMT3A |
| AML#197 | Male | 21 | Newly diagnosed | M2 | 46,XY,t(8;21)(q22;q22) | 37 | CSF3R, FLT3-ITD, TET-2 |
| AML#198 | Female | 44 | Newly diagnosed | M2 | 46,XX,t(8;21)(q22;q22) | 68 | ASXL1,K-RAS,N-RAS |
| AML#199 | Female | 47 | Relapsed | M4 | 46,XX | 98 | NPM1, FLT3-ITD, IDH2 |
| AML#200 | Male | 44 | Newly diagnosed | M2 | 46,XY | 77 | CEBPAdm, FLT3-ITD |
| AML#231 | Male | 17 | Newly diagnosed | | 46, XY, der(19)t(1;19)(q23;p13), +21[16] | 74 | |
| AML#235 | Female | 33 | Newly diagnosed | M4/M5 | 46, XX | 87 | NPM1 |
| AML#237 | Male | 56 | Relapsed | | | 88 | |
| AML#248 | Male | 16 | Newly diagnosed | AML | 45, X, -Y[20] | 79 | CEBPA, NRAS, PTPN11 |
| AML#250 | Male | 44 | Newly diagnosed | M5 | 46,XY,add(9)(q34)[18]/46,XY[2] | 85.5 | WT1, PRAME, ELANE, IDH2, SH2B3, TET2 |
| AML#251 | Female | 67 | Newly diagnosed | AML | 46. XX[20] | 87 | FLT3-ITD, ETNK1, ETV6, PTPN11, RUNX1, RUNX1 |
| AML#252 | Female | 39 | Newly diagnosed | M5 | 46. XX[10] | 97.5 | NA |
| AML#253 | Male | 38 | Newly diagnosed | AML | 46. XY[20] | 66.5 | CEBPA, KMT2C, PDGFRA |
| AML#256 | Male | 57 | Newly diagnosed | M4/M5 | 47,XY,+8[20] | 80.5 | MLL-PTD(+); DNMT3A, SH2B3, FLT3-TKD, TCF, RUNX1 |