## Supplementary Figs and legends

### Figure S1

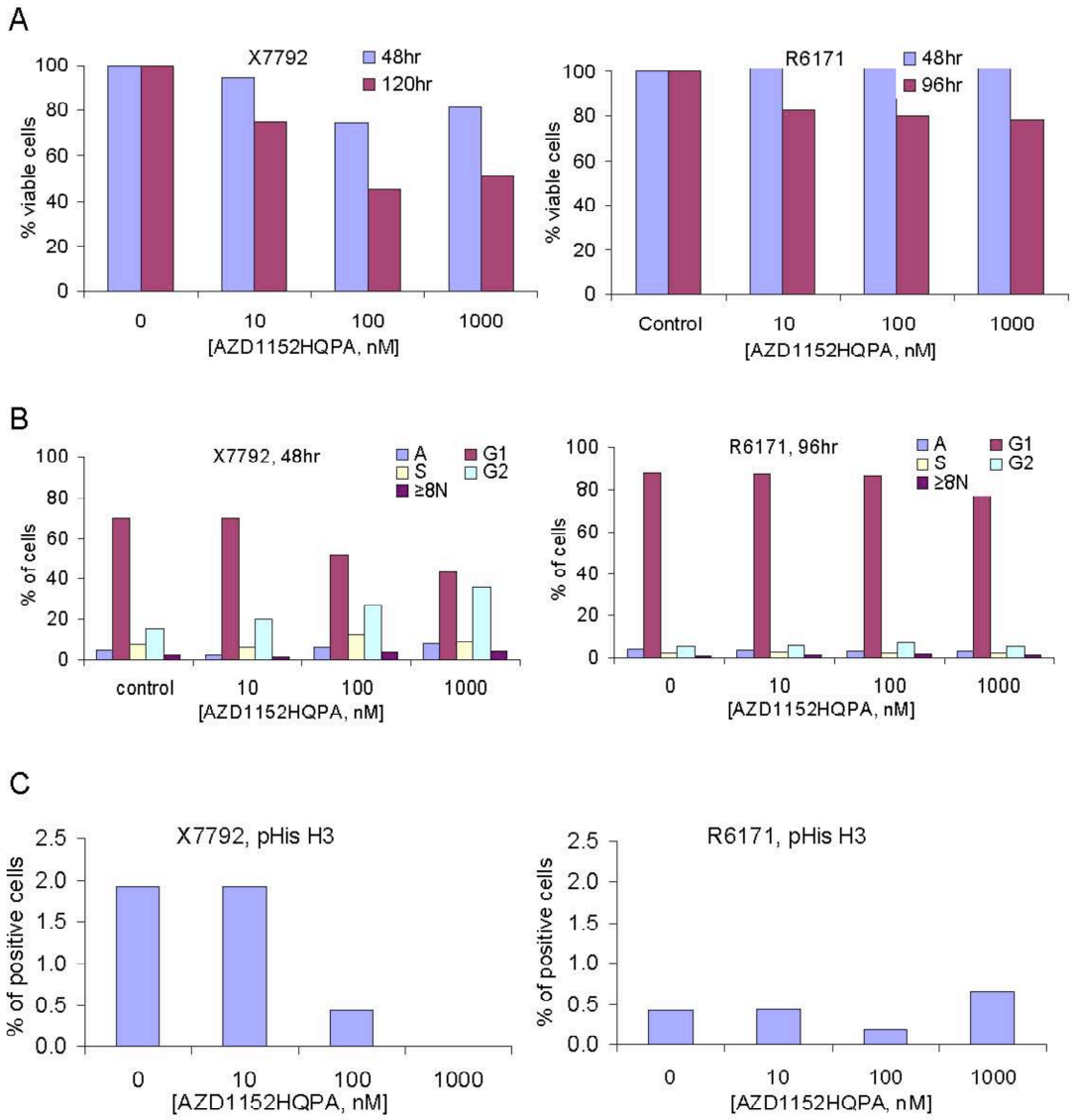


**Figure S1**. AZD1152-HQPA activity in 2 primary AML samples showing effect on viable cell number (Fig S1A), cell cycle distribution (Fig S1B, including apoptotic (sub-G1) and polyploid cells) and pHis H3 (Fig S1C).

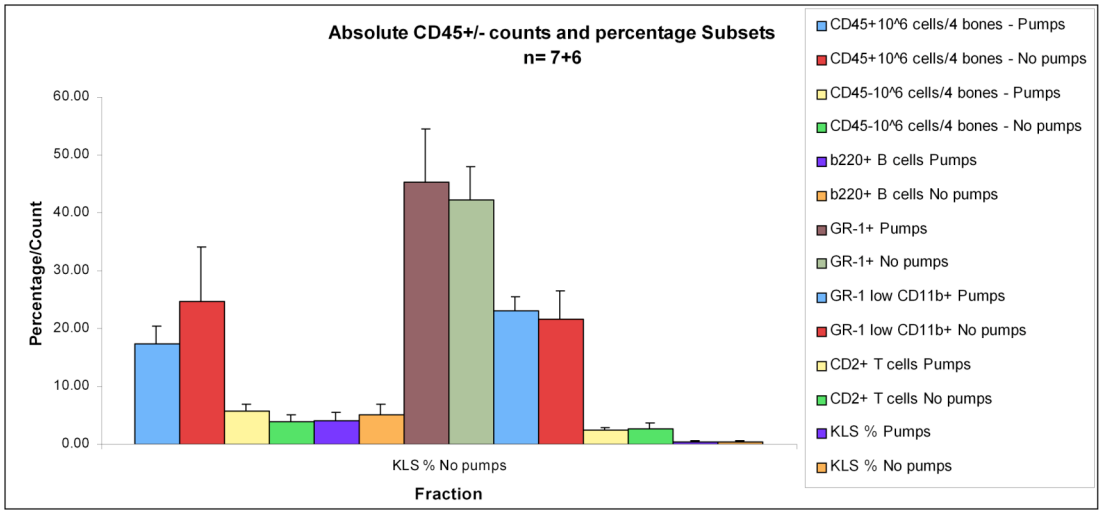


**Figure S2: Effect of 1 week of AZD1152 treatment of the frequency of NOD/SCID haematopoietic cell subsets.** $CD45^+$ cell numbers are expressed as absolute numbers obtained from the four rear murine long bones. All other subsets are expressed as a percentage of live, debris-free $CD45^+$ cells. Although there was an overall reduction in $CD45^+$ cells, there did not seem to be any particular subset that was preferentially targeted and the mice tolerated this treatment.

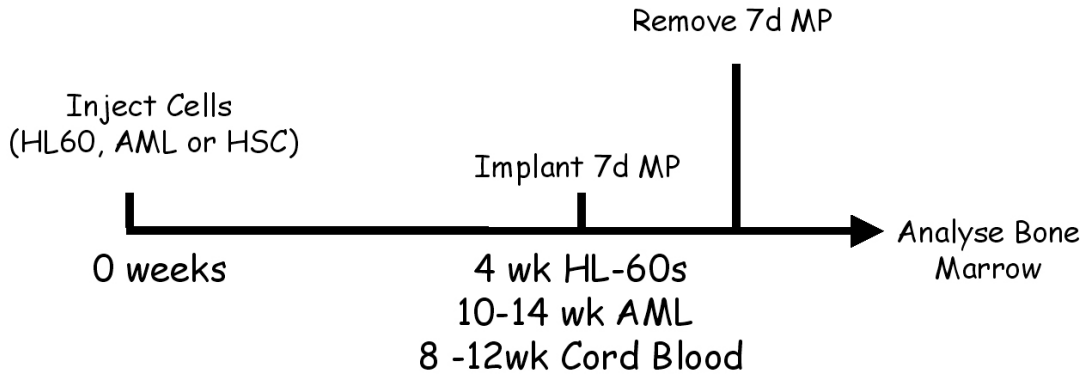


**Figure S3: Summary of *in vivo* AZD1152 treatment regimens.** A flow chart summary of the AZD1152 treatment timing during *in vivo* experiments. Cells ($10^6$ HL-60s, $10^7$ primary AML cells or $5x10^4$ $Lin^-$ CB cells) were injected i.v. into sub-lethally irradiated NOD/SCID mice. Mice were then left for differing periods (depending on the cell source) of time before AZD1152 treatment for the xenograft to reach appropriate levels. This was 4 weeks for HL-60s, 10 weeks for primary AML cells and 8 weeks for CB $Lin^-$ cells. At these time points, AZD1152 was administered via osmotic mini-pumps at 25mg/Kg/day for one week. At the end of this treatment week, pumps were removed and mice were either left for follow-up studies or sacrificed and analysed for human cell content.

**Table S1**

| Sample ID | FAB type | Karyotype | WBC | % of Blast cells in BM |
|---|---|---|---|---|
| AML-1 | AML M1 | NK | 151 | 90 |
| AML-2 | AML M2 | +11+13 | 27 | 89 |
| AML-3 | AML M4 | NK | 43 | 95 |
| AML-4 | AML M5 | ND | 212 | 95 |
| AML-5 | AML M1 | FK | 64 | 91 |
| R 6171 | AML M5v | XY, ins(10;11)(p12;q23q21) | 162 | 92 |
| R 6187 | AML M5v | XY, ins(10;11)(p12;q23q21) | 162 | 92 |
| R 6290 | Biphenotypic AML | NK | 200 | 91 |
| R 3967 | AML M4 | NK | 43 | 87 |
| R 3921 | AML M4 | Inv 16 | 113 | 83 |
| R 2110 | AML M4 | NK | 127 | 90 |
| X 7792 | AML M4 | NK | 108 | 90 |
| R 5940 | AML M1 | NK | 206 | 91 |
| F 7862 | AML M1 | NK | 79 | 87 |
| R 4801 | AML M3v | XX, t(15;17)(q22;q21) | 83 | 95 |
| R 6298 | AML M3v | XX, t(15;17)(q22;q21) | 83 | 95 |
| R 6302 | AML M3v | XX, t(15;17)(q22;q21) | 83 | 95 |

**Table S1: Summary of patient details used for *in vivo* experiments.** AZD1152 treatment was tested on samples from five different AML cases. Listed are the AML sample identifiers, the AML subtype according to the French-American-British (FAB) classification, the results of the karyotype assessment performed at diagnosis and the white blood cell count (WBC). NK – normal karyotype, ND – not done, FK – failed karyotype - v: represents samples from the same patients used at different time.