

Figure S1.

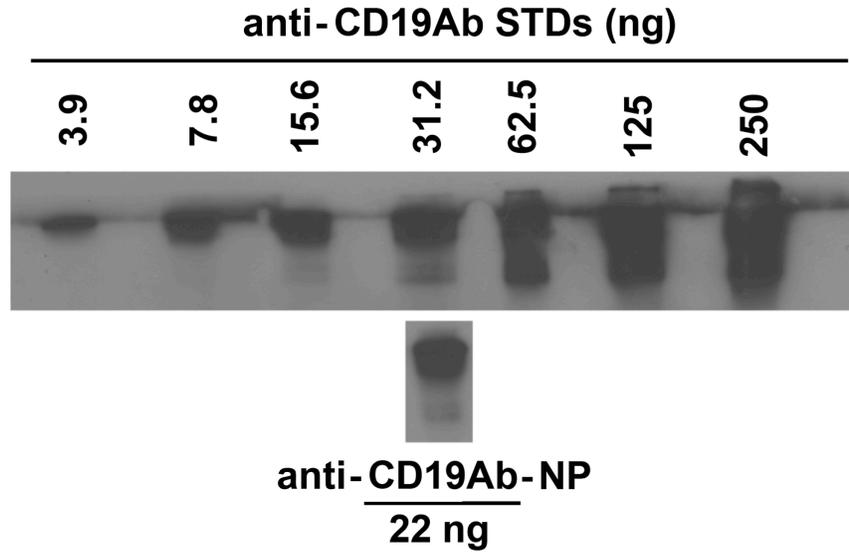


Figure S1. A representative immunoblot used to quantify biotinylated anti-CD19Ab levels on NPs.

Figure S2.

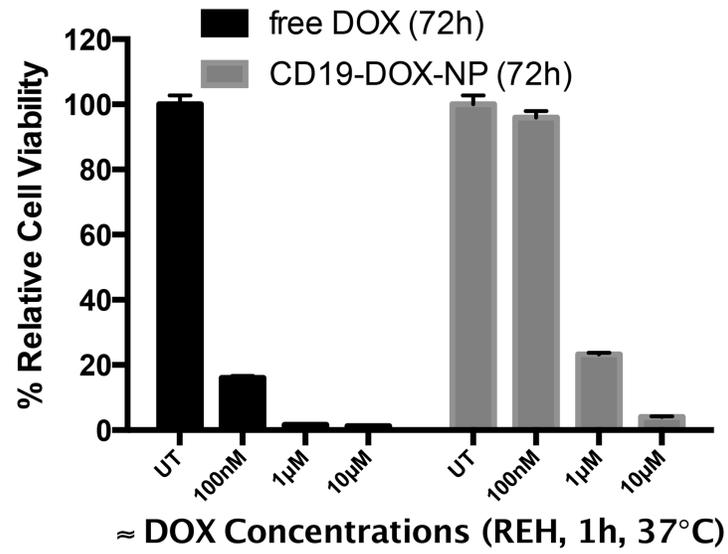


Figure S2. Treatment of REH cells with free DOX or CD19-DOX-NPs ($\approx 100\text{nM}$, $1\mu\text{M}$ or $10\mu\text{M}$ DOX) for 1h at 37°C . CD19-DOX-NPs did not affect the cell viability at 100nM DOX, but reduced the viability at higher concentrations of 1 and $10\mu\text{M}$ DOX.

Figure S3.

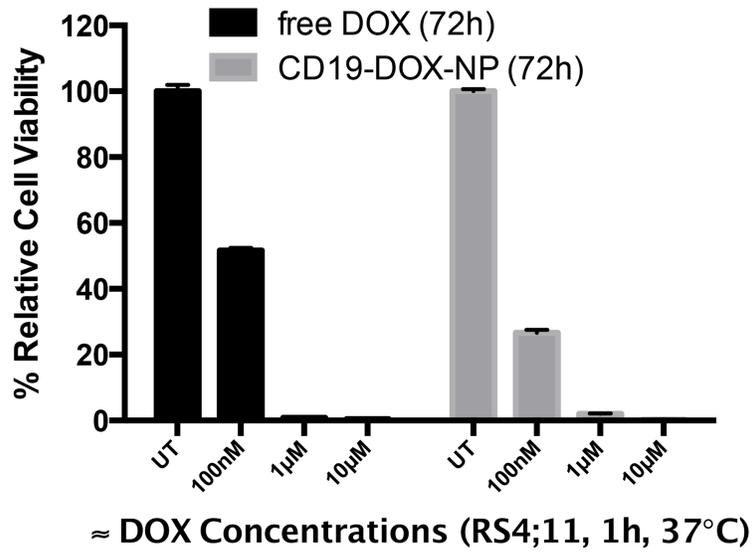


Figure S3. Treatment of RS4;11 cells with free DOX or CD19-DOX-NPs (≈100nM, 1µM or 10µM DOX) for 1h at 37°C. CD19-DOX-NPs reduced the cell viability at all concentrations of DOX.

Figure S4.

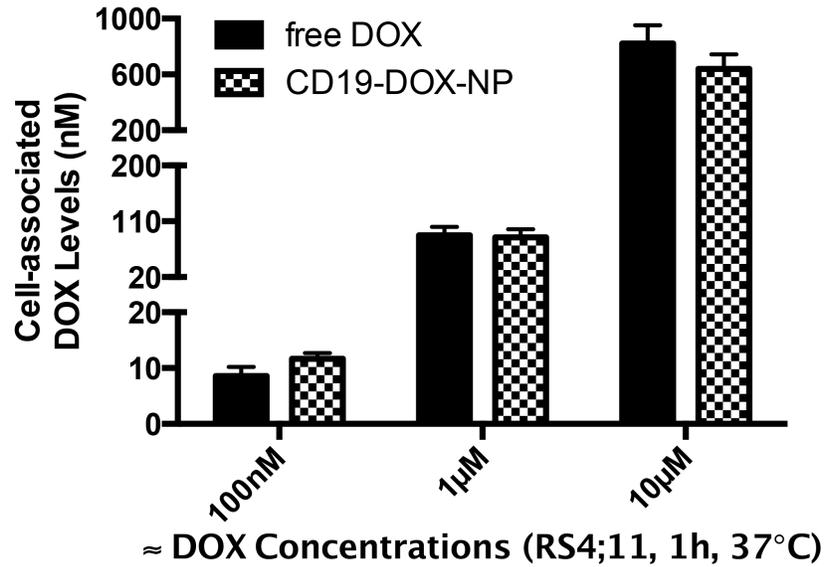


Figure S4. CD19-targeting achieves similar cell associated DOX (intracellular and cell surface bound, caDOX) levels in RS4;11 cells: RS4;11 caDOX levels on treatment with free DOX or CD19-DOX-NPs ($\approx 100\text{nM}$, $1\mu\text{M}$ or $10\mu\text{M}$ DOX) for 1h at 37°C .

Figure S5.

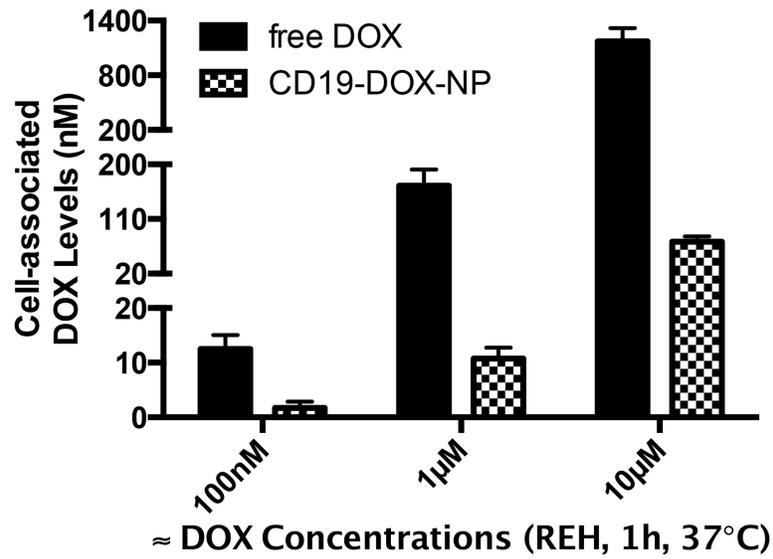


Figure S5. CD19-targeting reduces the cell associated DOX (intracellular and cell surface bound, caDOX) levels in REH cells: REH caDOX levels on treatment with free DOX or CD19-DOX-NPs ($\approx 100\text{nM}$, $1\mu\text{M}$ or $10\mu\text{M}$ DOX) for 1h at 37°C .

Figure S6.

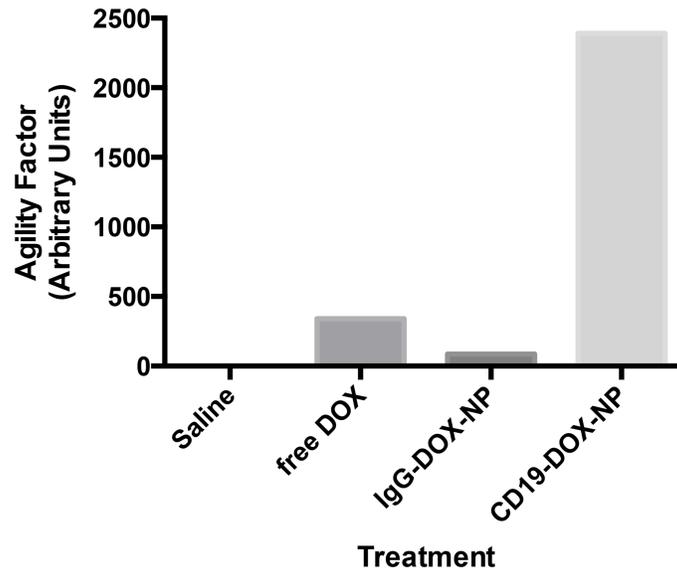


Figure S6. CD19-DOX-NPs maintained high agility factor in leukemic mice: Agility Factor (normalized to saline) = no. of wheel rotations on day 15 \div no. of wheel rotations on day 1. CD19-DOX-NPs (\approx 2.5 mg/kg DOX) maintained a high agility factor in comparison with groups treated with saline, IgG-DOX-NPs and free DOX (\approx 2.5 mg/kg DOX). This indicates reduced apparent systemic toxicity in leukemic mice treated with CD19-DOX-NPs.