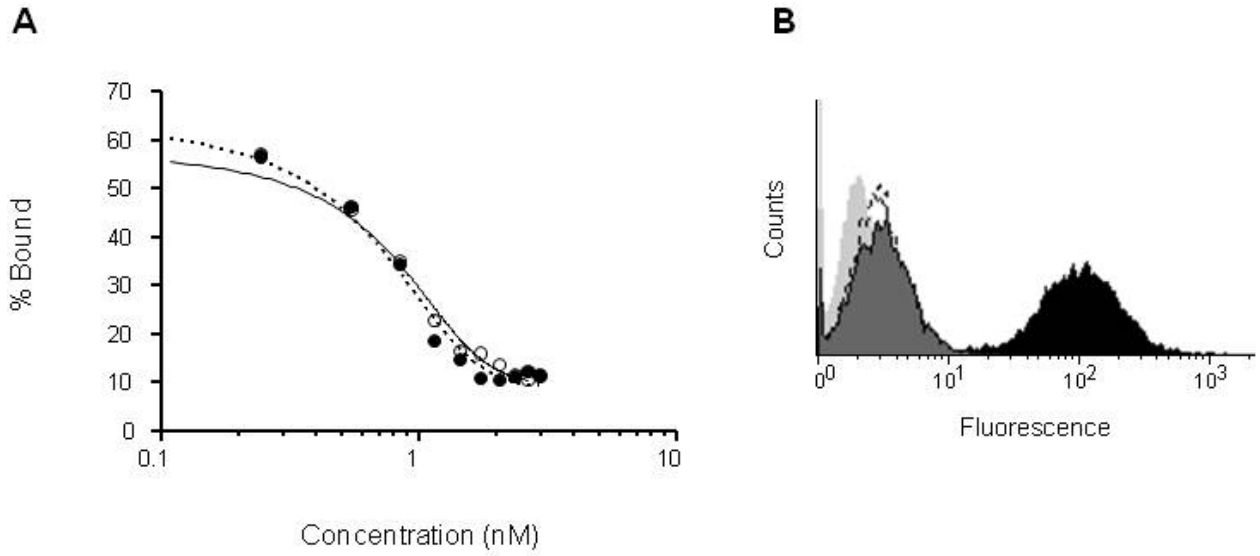
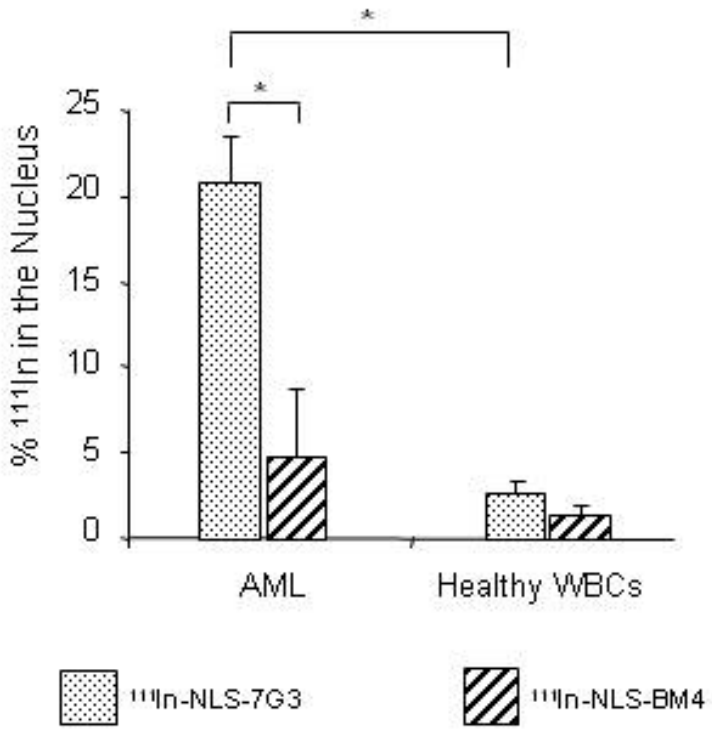
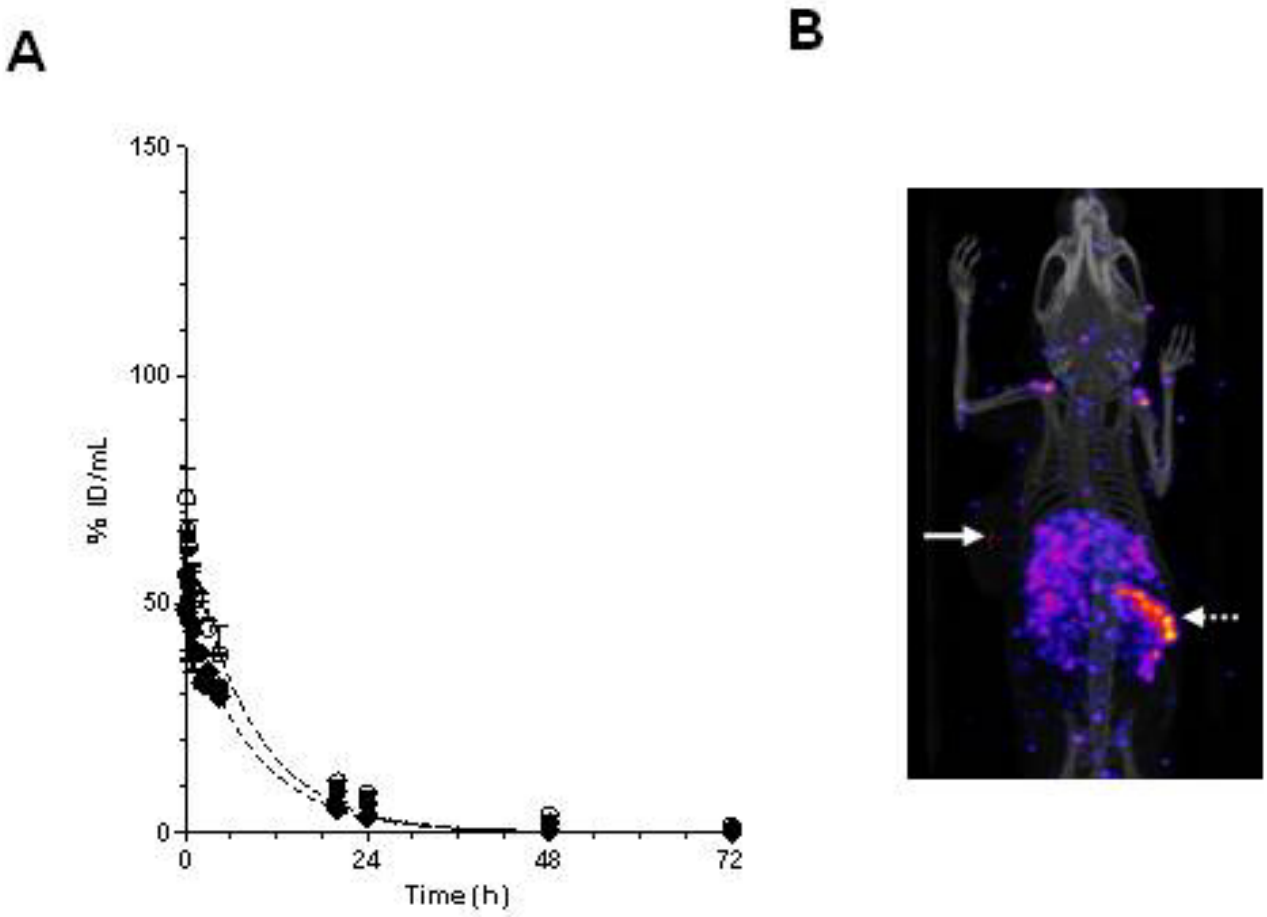


SUPPLEMENTAL FIGURE 1. (A) Competition of binding of ^{111}In-7G3 to CHO-CD123 cells by NLS-7G3 (dashed line) or 7G3 (solid line). The K_d values for NLS-7G3 and 7G3 were 4.6 and 3.6 nmoles/L, respectively. (B) Flow cytometry on CD123-negative (light grey) or –positive (black) Raji cells using NLS-7G3 detected with PE-conjugated anti-murine Fc secondary antibody. Also shown are results for NLS-BM4 incubated with CD123-negative (white) or –positive (dark grey) Raji cells.

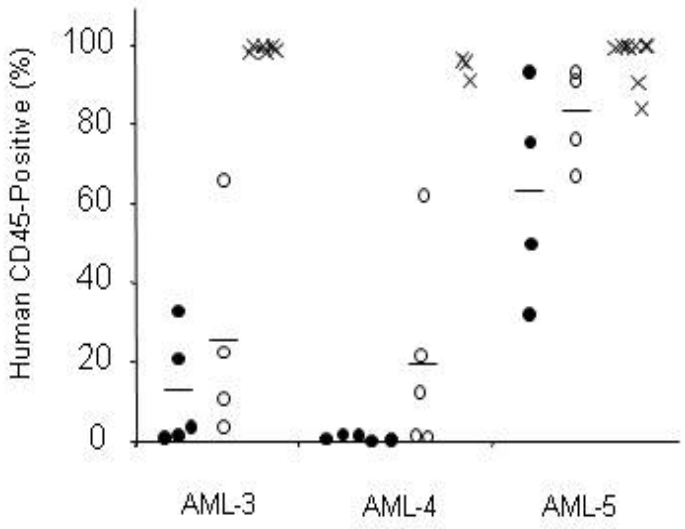


SUPPLEMENTAL FIGURE 2. Percent of nuclear radioactivity in primary AML cells or normal leukocytes from an adult healthy donor incubated with ^{111}In-NLS-7G3 or ^{111}In-NLS-BM4 irrelevant antibodies for 2 h at 37 ^{o}C. Significant differences (P<0.05) are indicated by asterisks.



SUPPLEMENTAL FIGURE 3. (A) Elimination of radioactivity from the blood following i.v. injection of ^{111}In-NLS-7G3 F(ab′)$_2$ in NOD-scid mice (●) or Balb/c mice (○). (B) Coronal microSPECT/CT image of s.c. Raji-CD123 xenograft (solid arrow) and spleen (broken arrow) in a NOD-scid mouse injected with ^{111}In-NLS-7G3 with pre-administration of excess murine IgG$_1$.

A



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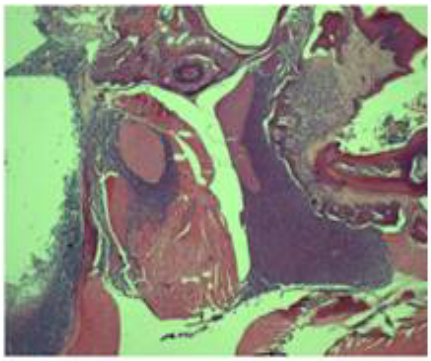

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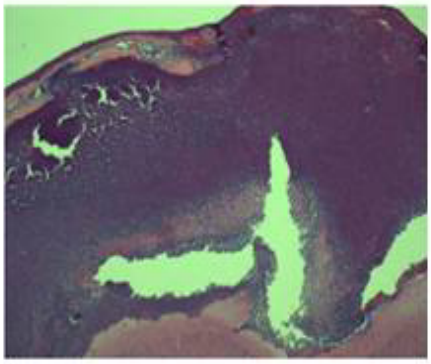

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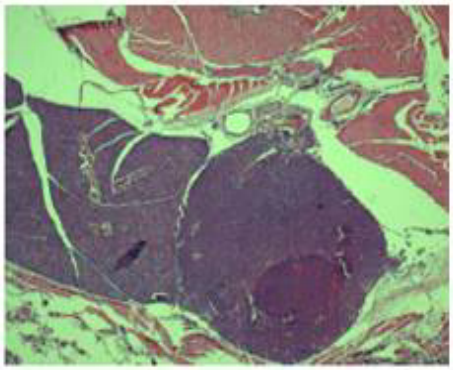
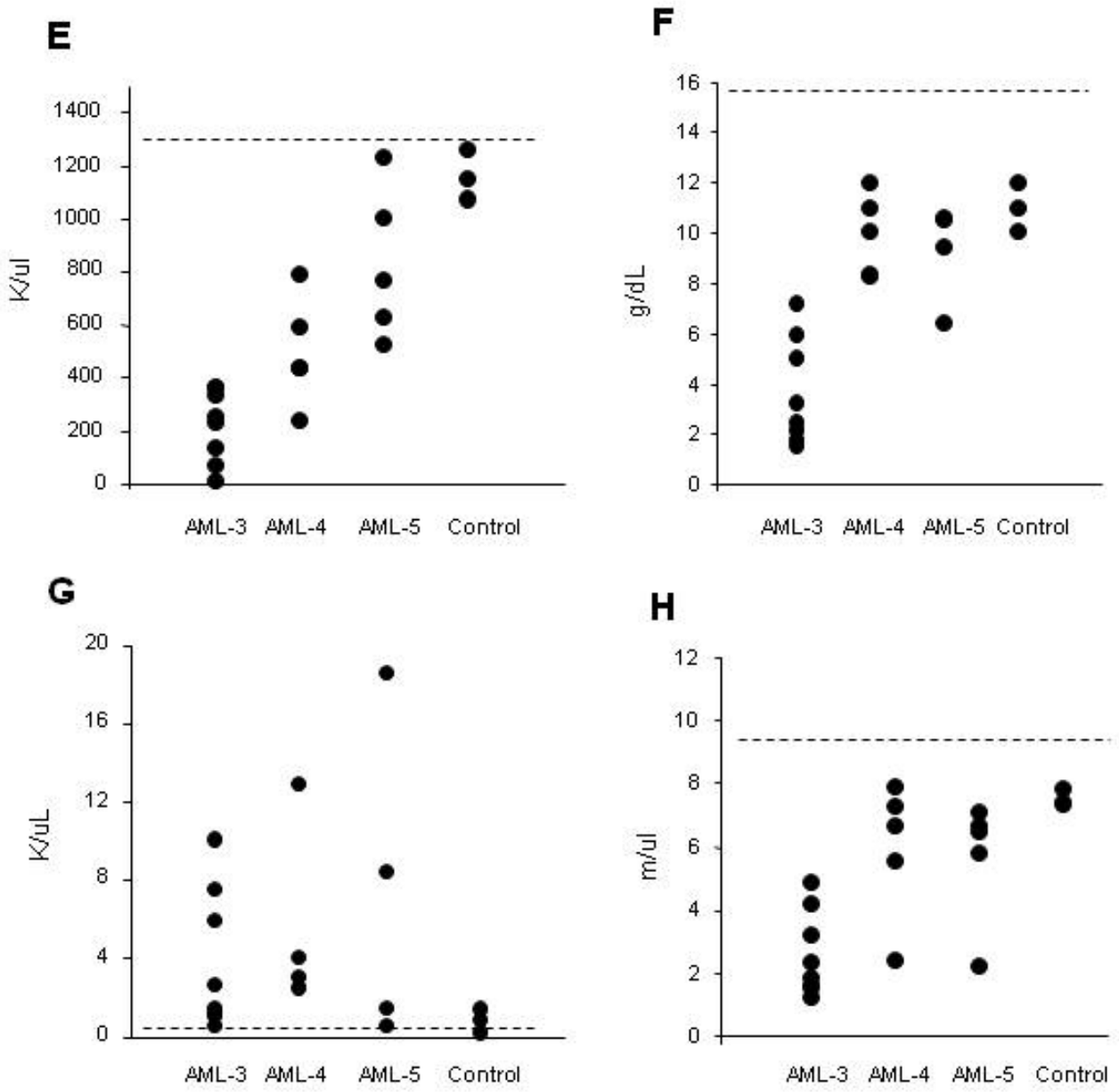
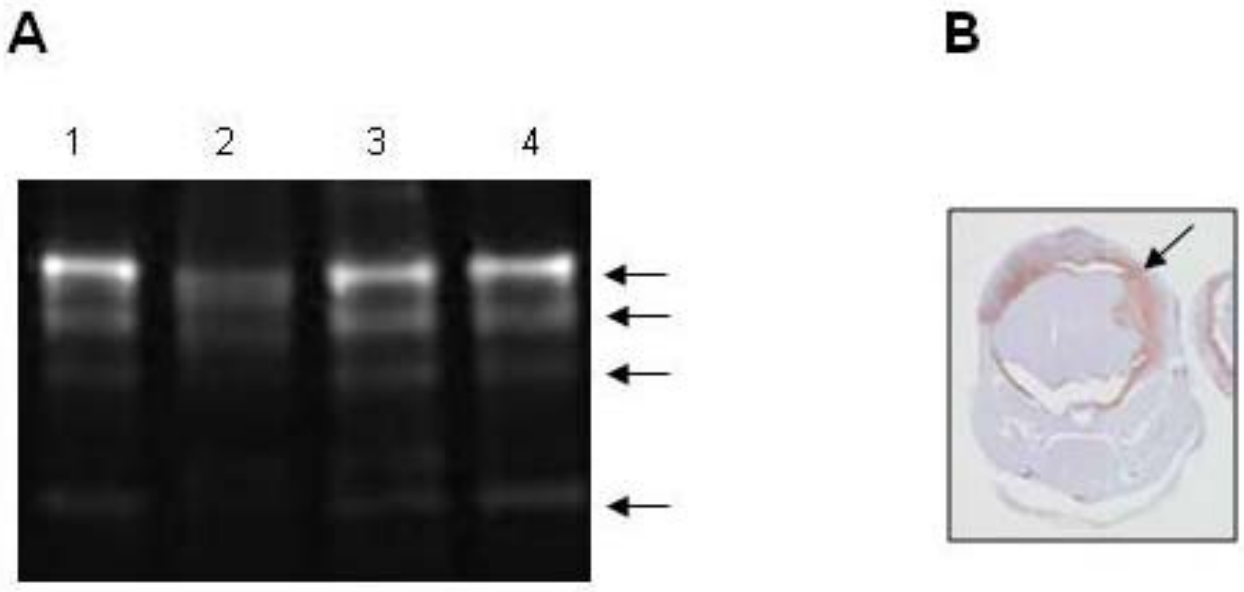




SUPPLEMENTAL FIGURE 4. (A) Percentage of human $CD45^+$ cells in the BM (●), spleen (○) or at EM sites (x) in mice engrafted with AML-3, AML-4 or AML-5 cells. Histopathological staining of tissues obtained from EM sites in a NOD-scid mouse engrafted with AML-3 cells showing malignant cells (purple) infiltrating the (B) ocular nerve, (C) brain parenchyma and (D) mandibular lymph node. (E) Platelet counts. (F) Hemoglobin levels. (G) Leukocyte counts. (H) Red blood cell counts. The normal hematological values according to the Jackson Laboratory phenome database (http://phenome.jax.org) in 8-12 week old female NOD-scid mice are indicated by a broken horizontal line.



SUPPLEMENTAL FIGURE 5. (A) Western blot for human CD45 in tissues obtained from a NOD-scid mouse engrafted with 5×10^6 cells: spleen (lane 1), BM (lane 2), brain (lane 3) and LN (lane 4). Arrows indicate bands associated with CD45. (B) Brain section demonstrating anti-CD45 immunostaining of infiltrating neoplastic cells (arrow) at the brain occiput.

SUPPLEMENTAL TABLE 1

Pharmacokinetic Parameters for Elimination of ^{111}In-NLS-7G3, ^{111}In-NLS-BM4 or ^{111}In-NLS-7G3 $F(ab')_2$ Fragments from the Blood in Different Species of Mice *

Radioimmunoconjugate	Mouse species	Pharmacokinetic parameter		
		A	λ (h^{-1})	$t_{1/2}$ (h)
^{111}In-NLS-7G3	NOD-scid	108.3	0.091	7.6
^{111}In-NLS-7G3	Balb/c	117.3	0.021	33.0
^{111}In-NLS-7G3 + excess BM4 †	NOD-scid	121.9	0.039	17.8
^{111}In-NLS-7G3 $F(ab')_2$	NOD-scid	49.2	0.114	6.1
^{111}In-NLS-7G3 $F(ab')_2$	Balb/c	66.0	0.117	5.9

* Blood concentration vs. time data was fitted to a monoexponential pharmacokinetic model ($C=Ae^{-\lambda t}$).

† Mice were pre-administered i.p. a 5-fold excess of BM4 irrelevant IgG_{2a} 12 h before the radioimmunoconjugates.