Supplemental figure legends

Supplemental figure 1. A. Grading of CT7 staining in new and relapsed patients was performed as described in figure 1. CT7 grading increased in the relapsed patients compared to newly diagnosed. B. Transduction efficiency was assessed in each experiment with a control lentiviral construct containing a cDNA insert coding for Green Fluorescent Protein (GFP). GFP fluorescence (blue curves) compared to non-target control lentivirus (red curves) was assessed by flow cytometry at 48 hrs. C. ARP-1 cells were transduced with shMA 128375 or controls and MAGE-A3 and MAGE-A1 mRNA expression was assessed at the indicated time points by qRT-PCR. Both MAGE-A3 and A1 were efficiently silenced by shMA 128375. D. ARP-1 cells were transduced with shMA 128375 or controls and CT7 (MAGE-C1) mRNA expression was assessed by qRT-PCR at 72 hrs. The shRNA lentivirus had no effect on CT7 mRNA level relative to controls. E. MM.1r cells were transduced with shMA 129750 or controls and annexin V binding was assessed at 48 hrs. Silencing of MAGE-A with shMA 129750 resulted in a significant increase in annexin V-positive cells.

Supplemental figure 2. A. Interphase fluorescence *in situ* hybridization was performed on bone marrow aspirate cells from Pt #1. Probes for *TP53* (red fluorophore) and *ATM* (green fluorophore) are depicted. The upper right cell is a malignant plasma cell (myeloma cell) showing two green signals for *ATM* but only one red signal for *TP53*, indicated a monoallelic deletion of 17p. The lower left cell is a normal mononuclear cell showing two signals for both probes. B. Genomic sequencing revealed a mis-sense mutation in exon 7, codon 248 of the intact TP53 allele in Pt #1. This mutation results in an Arg to Gly substitution in the DNA binding domain, resulting in loss of function.

Supplemental figure 3. MM.1r cells were transduced with shMA or shNT and treated cells and untreated controls were harvested at 48 hrs. A. Total and phosphorylated Rb protein were assessed by western blot. B. Messenger RNA for p21 and p27 were assessed by qRT-PCR. C. p21 and p27 protein were assessed by western blot.

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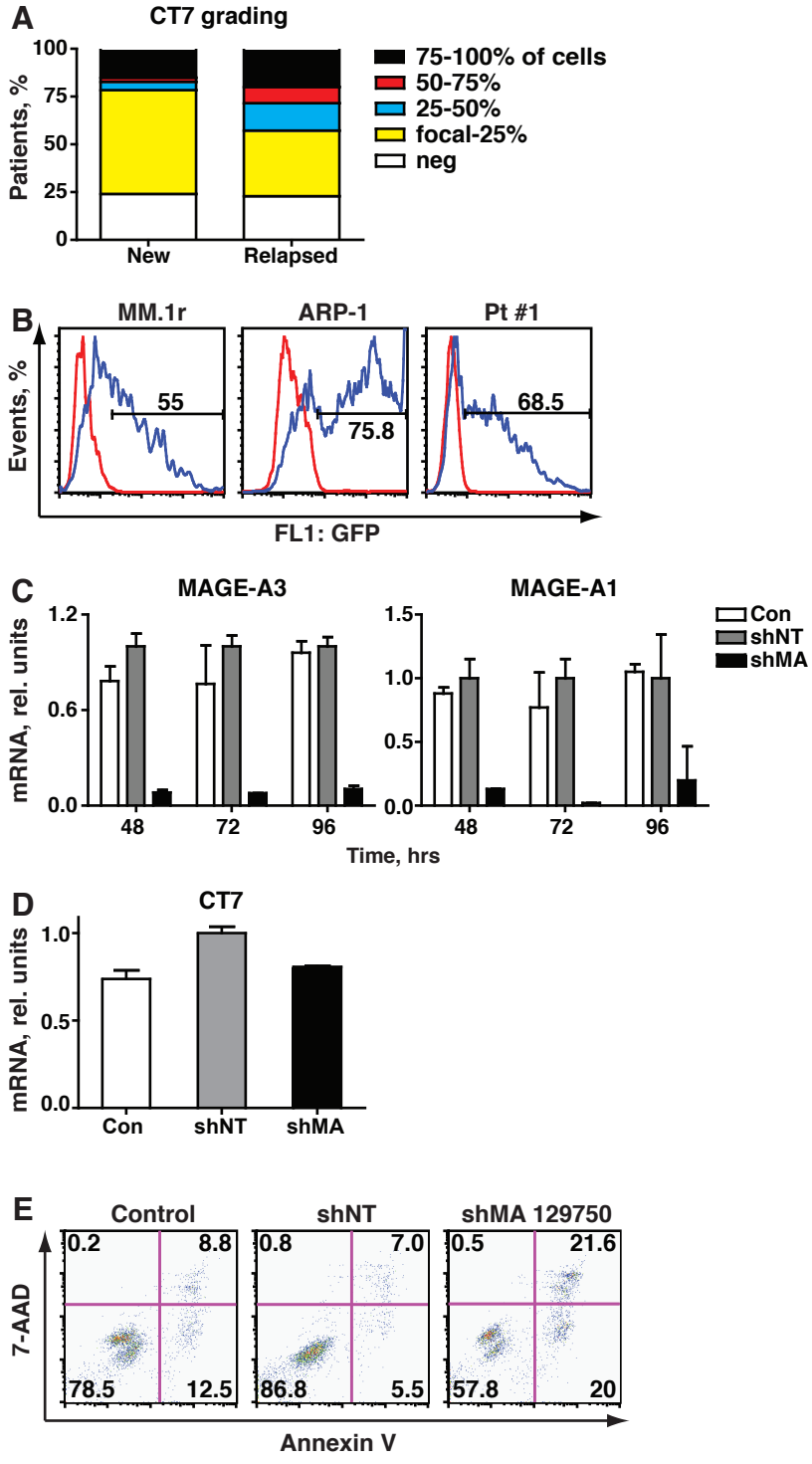
Supplemental figure 1



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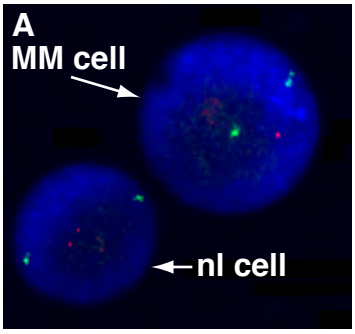
Supplemental Figure 2



TP53 **(17p): red**
ATM **(11q): green**

B

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Exon 7
Codon: 247 248 249
WT:    AAC CGG AGG
Pt #1: AAC GGG AGG
         Arg->Gly
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Supplemental Figure 3