Figure S1. miRNA sequencing analysis and identification of miRNAs in exosomes of bone marrow samples from patients with MM. RNA expression data from patients with MM were downloaded from Gene Expression Omnibus (GEO). Differentially expressed miRNAs/mRNAs between normal plasma exosomes and MM plasma exosomes were screened. Twenty-five miRNAs were significantly differentially expressed in patients with MM. Among these differentially expressed miRNAs, 13 were significantly upregulated, and 12 were significantly downregulated.MM, multiple myeloma.

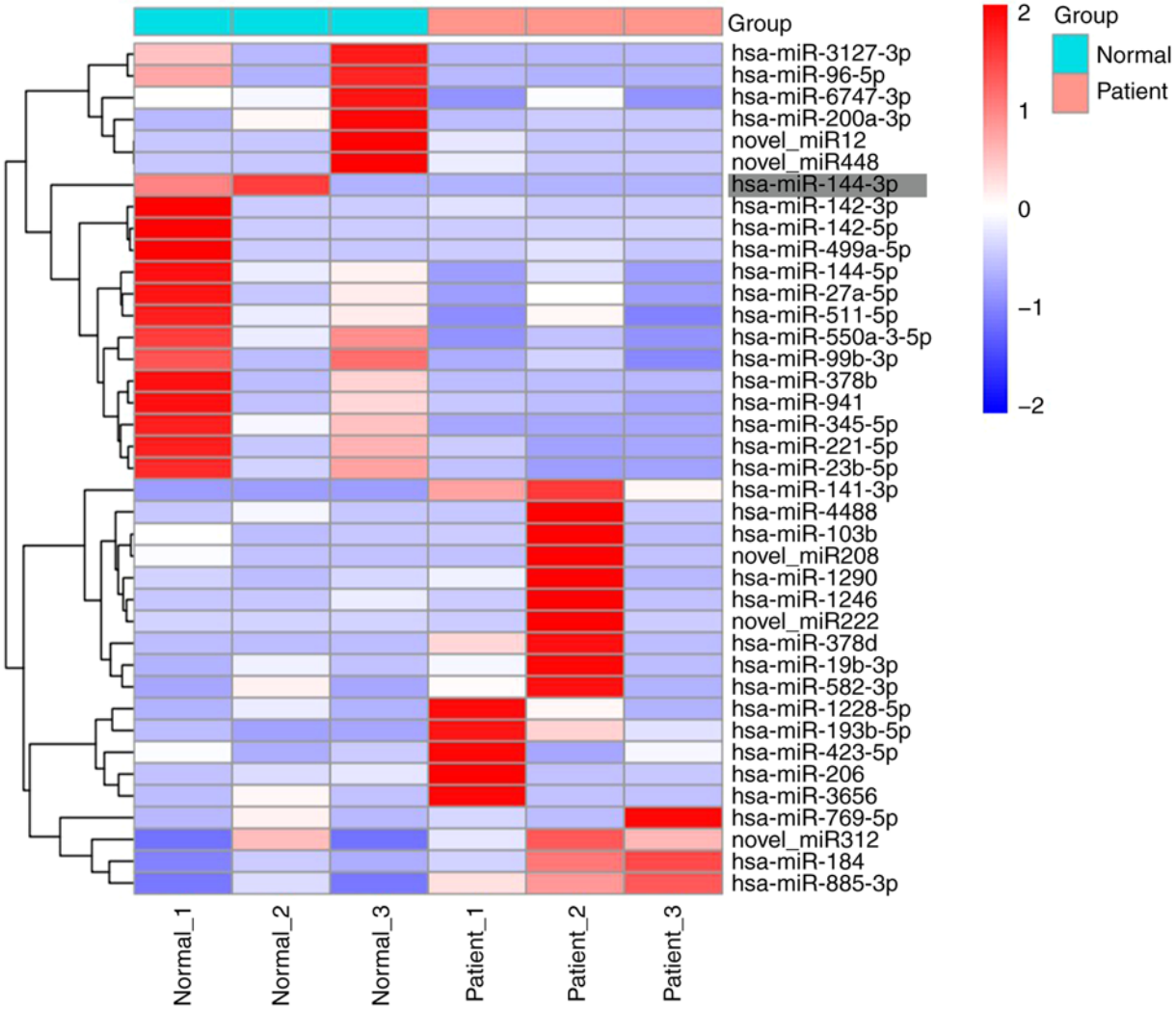

Figure S2. Overexpression of *miR-144-3p* in MM cells by gene transfection. (A and B) Transfection efficacy was assessed by RT-qPCR 48 h following transfection. $^{***}P<0.001$ vs. negative control. MM, multiple myeloma.

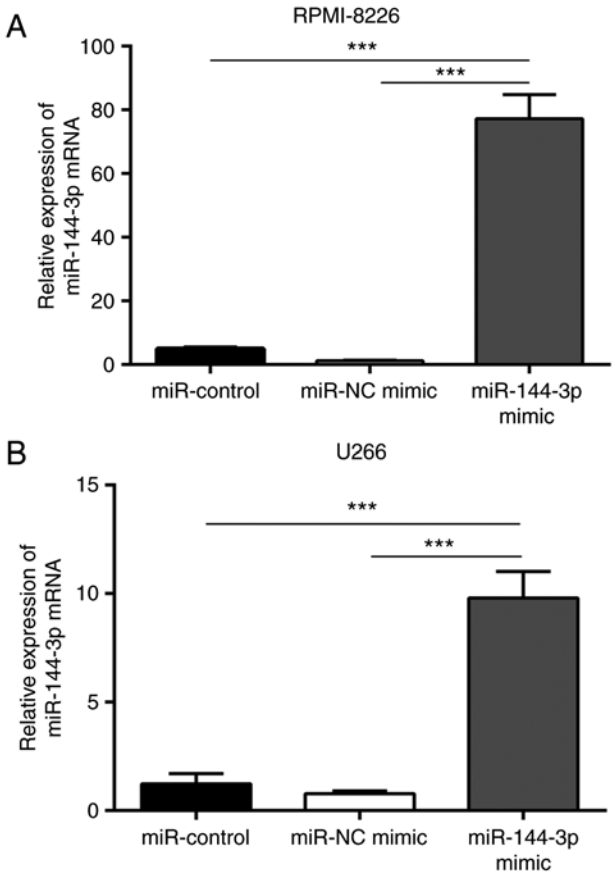

Figure S3. Recovery of *miR-144-3p* expression induced cell cycle arrest and induces apoptosis of MM cells. (A) Flow cytometric analysis of cell cycle expression in RPMI-8226 and U266 cells transfected with miR-144-3p mimic and miR-NC. *P<0.05 vs. negative control. (B) Cell apoptosis was assessed in RPMI-8226 and U266 cells transfected with miR-144-3p mimic or miR-NC. *P<0.05 vs. negative control.

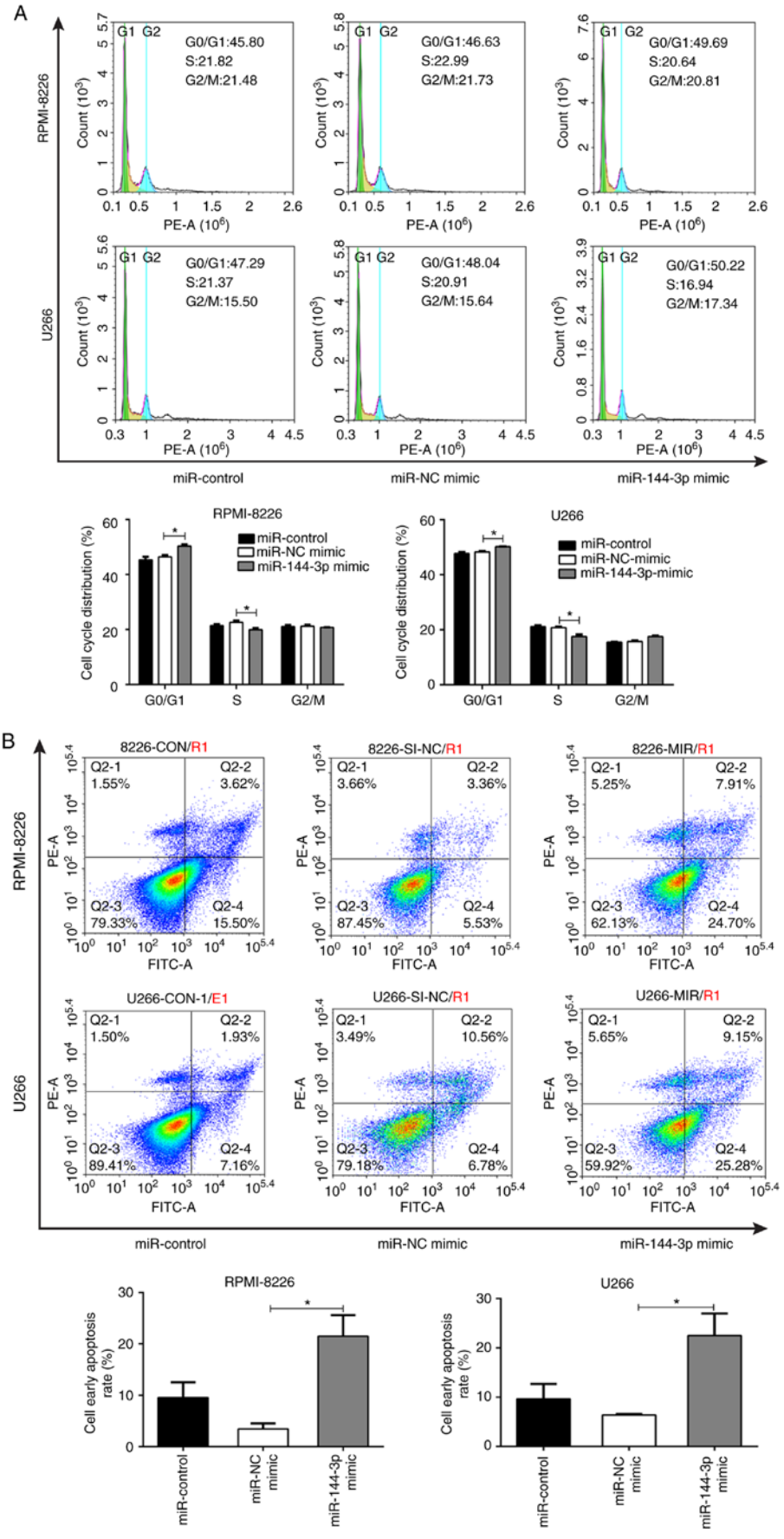

Figure S4. Knockdown efficiency of MEF2A in MM cells. (A and B) MEF2A was knocked down using specific siRNAs (si-MEF2A#1/2/3), and MEF2A expression was evaluated in U266 cells using RT-qPCR and western blot analysis.**P<0.01, ***P<0.001 vs. negative control. MM, multiple myeloma.

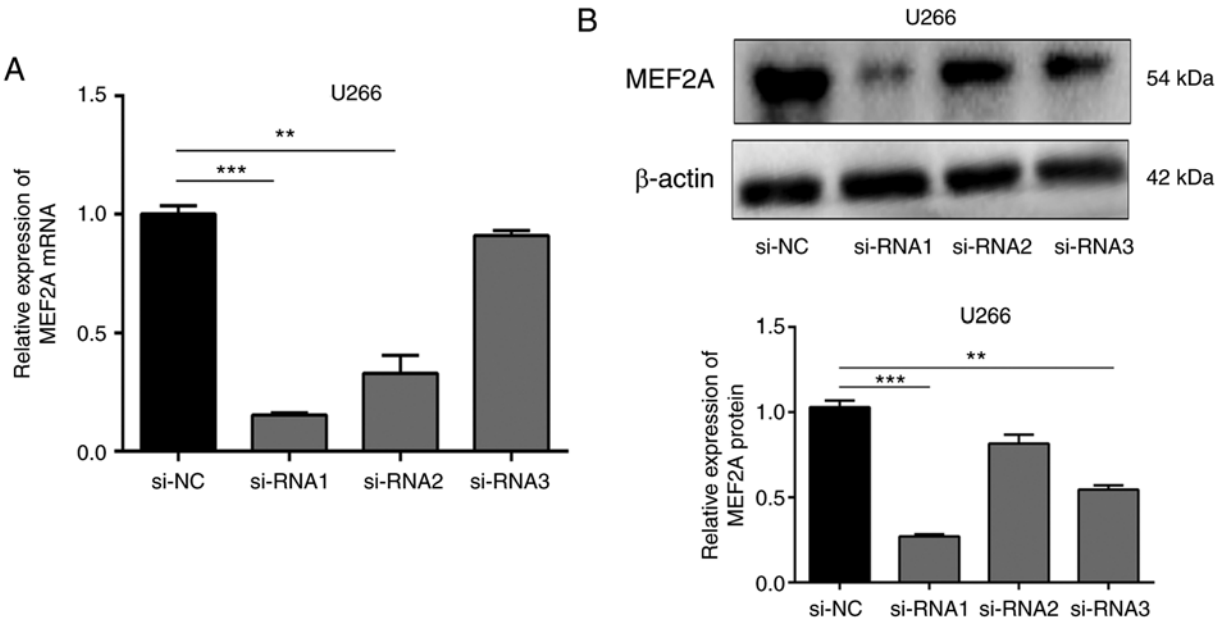

Figure S5. Knockdown of MEF2A inhibits MM cell proliferation, induced cell cycle arrest, and promotes cell apoptosis. (A) Cell cycle distribution of RPMI-8226 and U266 cells transfected with si-NC or si-MEF2A, as determined by flow cytometry. *P<0.05 vs. negative control. (B) Apoptotic rates of RPMI-8226 and U266 cells transfected with si-NC or si-MEF2A, as determined by flow cytometry. *P<0.01, **P<0.01, vs. negative control.MM, multiple myeloma.

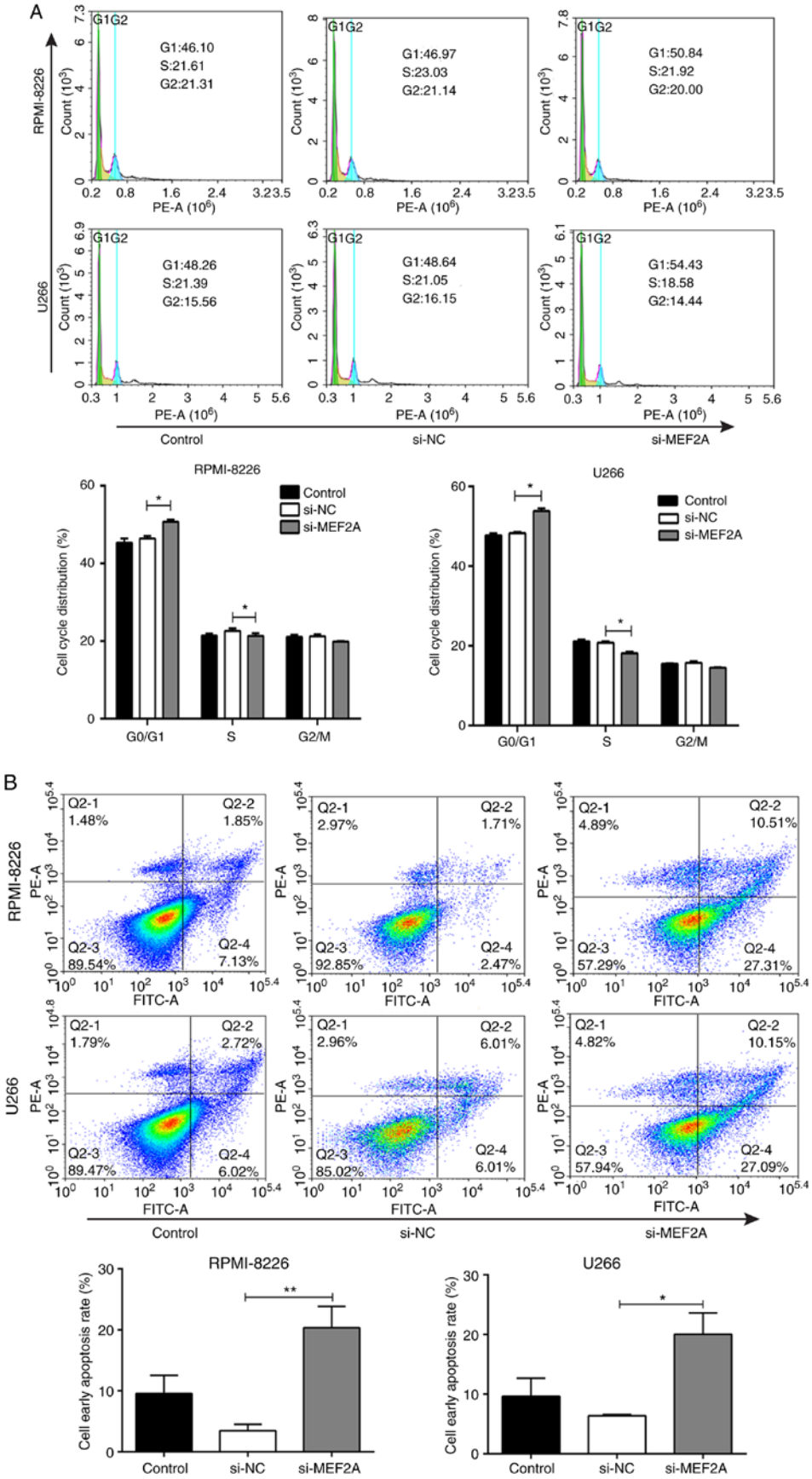

Figure S6. Overexpression of MEF2A reverses the effects of *miR-144-3p* on cell cycle arrest and apoptosis of MM cells. (A and B) *miR-144-3p* mimics and MEF2A plasmids were co-transfected into MM cells, and the effects of MEF2A on the cell cycle and apoptosis were detected by flow cytometry. *P<0.01, **P<0.01. MM, multiple myeloma.

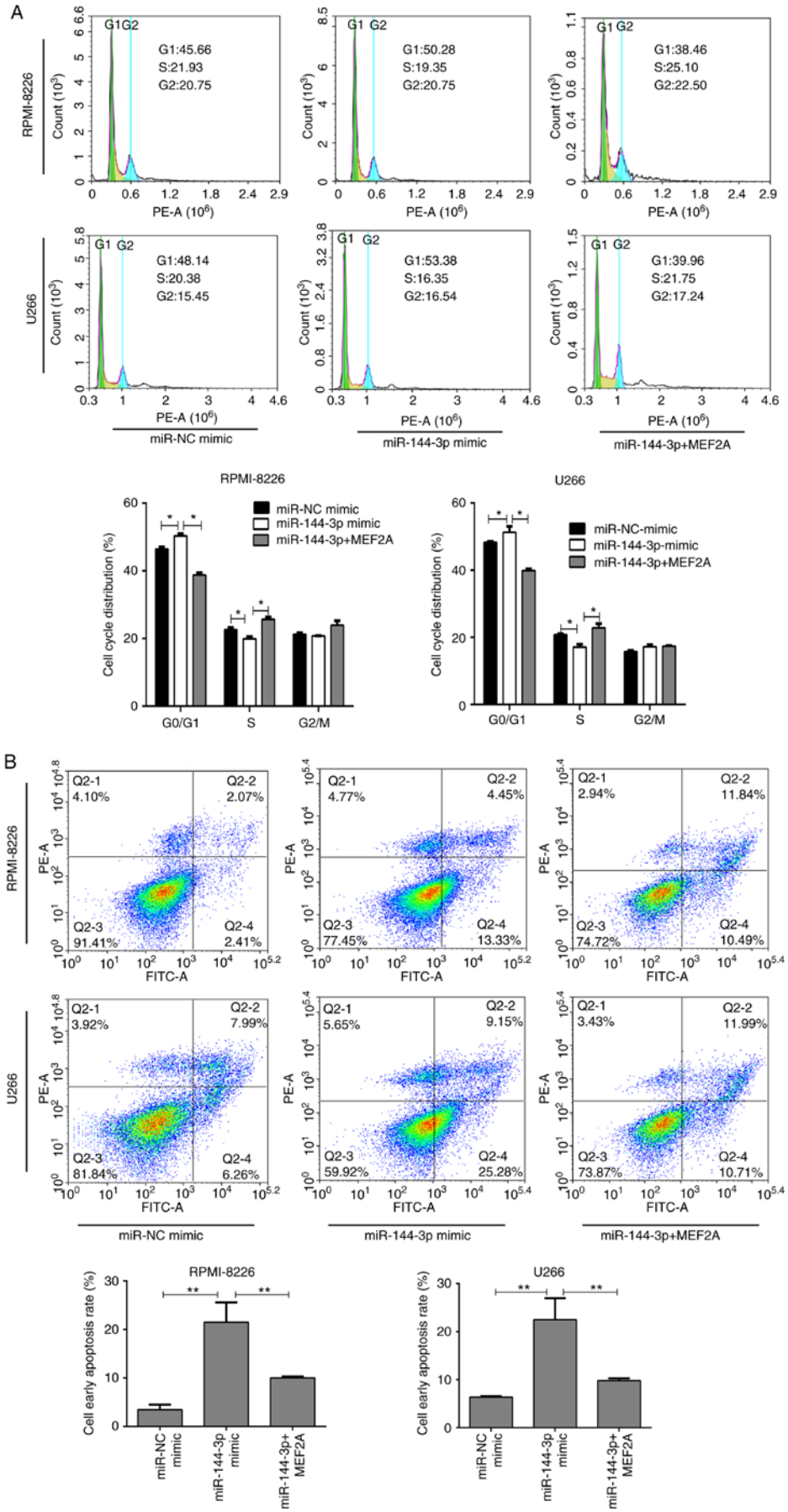

Table SI. Basic clinical information of the patients used for bone marrow sample collection.

Clinical characteristics	MM (n=15)	Control (n=10)	P-value
Sex			0.999
Male	9	6	
Female	6	4	
Age range (mean ± SD)	62.2±12.11	59.2±12.2	0.428
Clinical classification of MM			
Newly diagnosed patient (n)	8		
Relapse/refractory patient (n)	7		
Stage			
Durie-Salmon Plus (A/B)			
I/II phase	1	3	
III phase	7	4	
ISS			
I/II phase	1	5	
III phase	7	2	
Immunoglobulin			
IgG	6	4	
IgA	2	3	

MM, multiple myeloma; Control, normal donor; ISS, International Staging System.