ESI

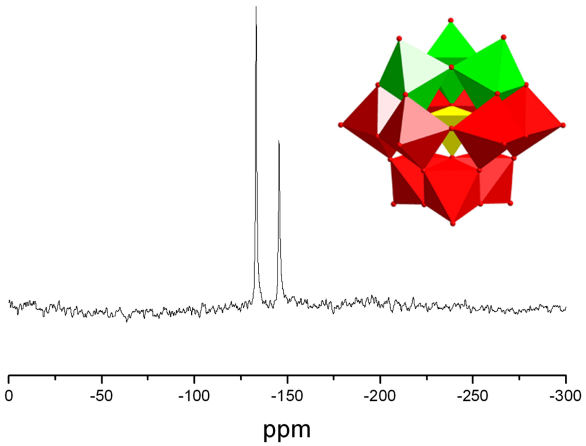

Figure S1. ^{183}W NMR spectroscopy of Ti_3SiW_9 in solution. The insert is polyhedral representation of the cluster structure. Yellow tetrahedron in the center represents SiO_4, while red octahedron and green octahedron stand for WO_6 and TiO_6, respectively.

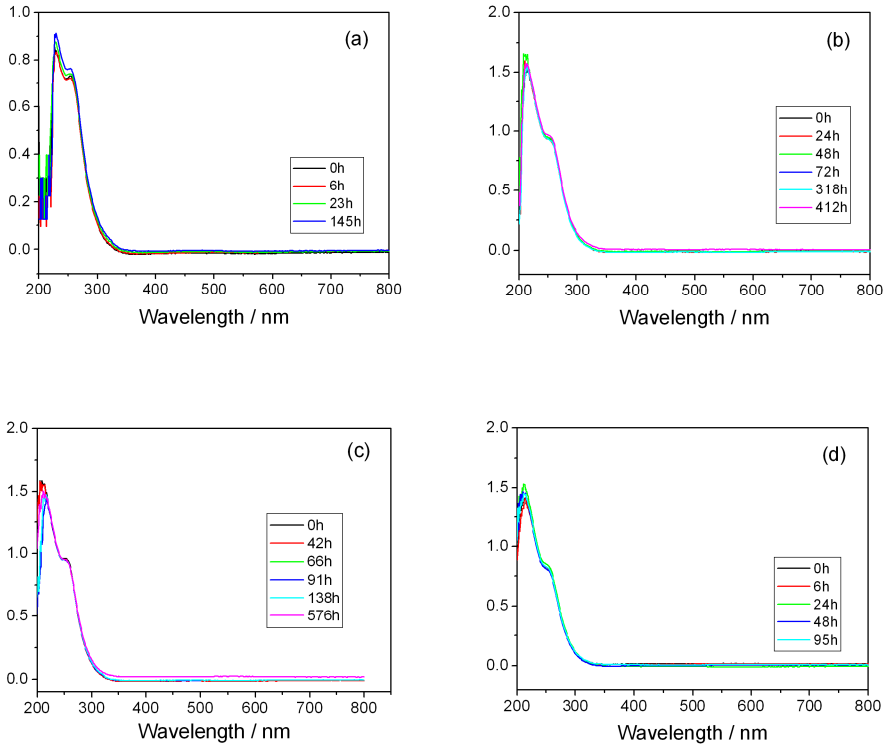

Figure S2. The stability of Ti_3SiW_9 in different buffer solution was investigated by UV-vis spectroscopy: (a) 0.1 M HCl solution (pH 1.0), (b) NaH_2PO_4 - Na_2HPO_4 buffer solution (pH 7.0), (c) boric acid - borate buffer solution (pH 8.0), and (d) boric acid - NaOH buffer solution (pH 9.3).

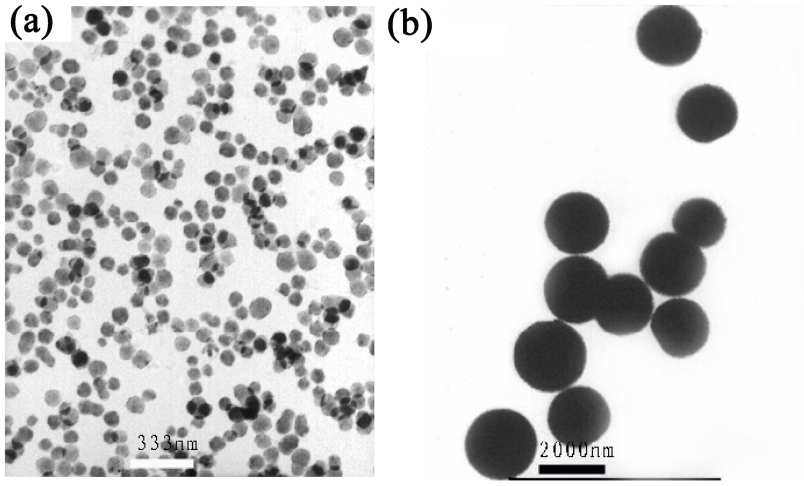

Figure S3. TEM images of (a) MMSN-NH_2, and (b) BMSM-NH_2.

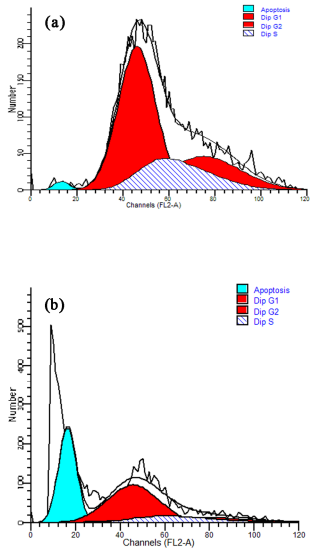

Figure S4. Effect of Ti_3SiW_9 on the cell cycle progression. Ls-174-T cells were cultured with or without 0.8 mg mL^{-1} Ti_3SiW_9 for 24 h, fixed and stained with PI, then the DNA content was analyzed by flow cytometry. The blue peaks in the histograms are sub-G1 peak, representing the percentage of the apoptotic cells.

Effect of Ti_3SiW_9 on Cell Cycle Progression

To examine the mechanism responsible for Ti_3SiW_9-induced inhibition of tumor cell proliferation, we investigated the cell cycle by flow cytometry. The cell cycle phase distribution of the whole population of Ti_3SiW_9-treated colon carcinomas cells exhibited significantly changes compared with the control as shown in Figure 6. A sub-G1 (sub-2N) DNA peak appeared, which has been suggested to be the apoptotic DNA.[1]The percentage of apoptotic Ls-174-T cells after incubation for 24 h was 36.45%. Ls-174-T cells growing in the absence of Ti_3SiW_9 had the following distribution in cell cycle: 53.76 % in G0/G1 phase, 21.40% in S phase, and 24.85 % in G2/M phase. Upon the presence of Ti_3SiW_9, the percentage of cells in G0/G1 phase increase to 65.09%, and the cells in the S phase decrease to 16.98%. These results demonstrated that Ti_3SiW_9-treated Ls-174-T cells accumulated at the G0/G1 phase of the cell cycle and underwent apoptotic cell death.

Table Sl

Sample	N	C	H
MMSN-NH_2	2.38	9.26	2.58
BMSM-NH_2	1.64	5.95	1.59

Table S2. Growth Inhibitory Effect of Ti_3SiW_9 on Human Tumor Cells.

Concentration of Ti_3SiW_9 (mg mL^{-1})	FL	Ls-174-T		Hela		Bel-7402		A-549	
	Survival percentage(%)	Inhibitory effect (%)	IC_{50} (mg mL^{-1})	Inhibitory effect (%)	IC_{50} (mg mL^{-1})	Inhibitory effect (%)	IC_{50} (mg mL^{-1})	Inhibitory effect (%)	IC_{50} (mg mL^{-1})
control	100	0		0		0		0	
1.25	89.6	47.5		52.3		52.0		35.4	
0.625	100	35.6	1.59	48.4	0.75	46.8	1.19	29.6	10.5
0.312	100	33.5		37.9		31.9		24.6	
0.156	100	25.9		31.0		27.9		25.5	
0.078	100	24.4		28.5		24.1		27.2	
0.039	100	17.1		24.9		20.1		23.9	
0.020	100	9.8		10.8		17.9		7.5	

1 C. N. Chen, C. L. Wu, H. S. Shy, J. K. Lin, *J. Nat. Prod.,* 2003, **66**, 503.