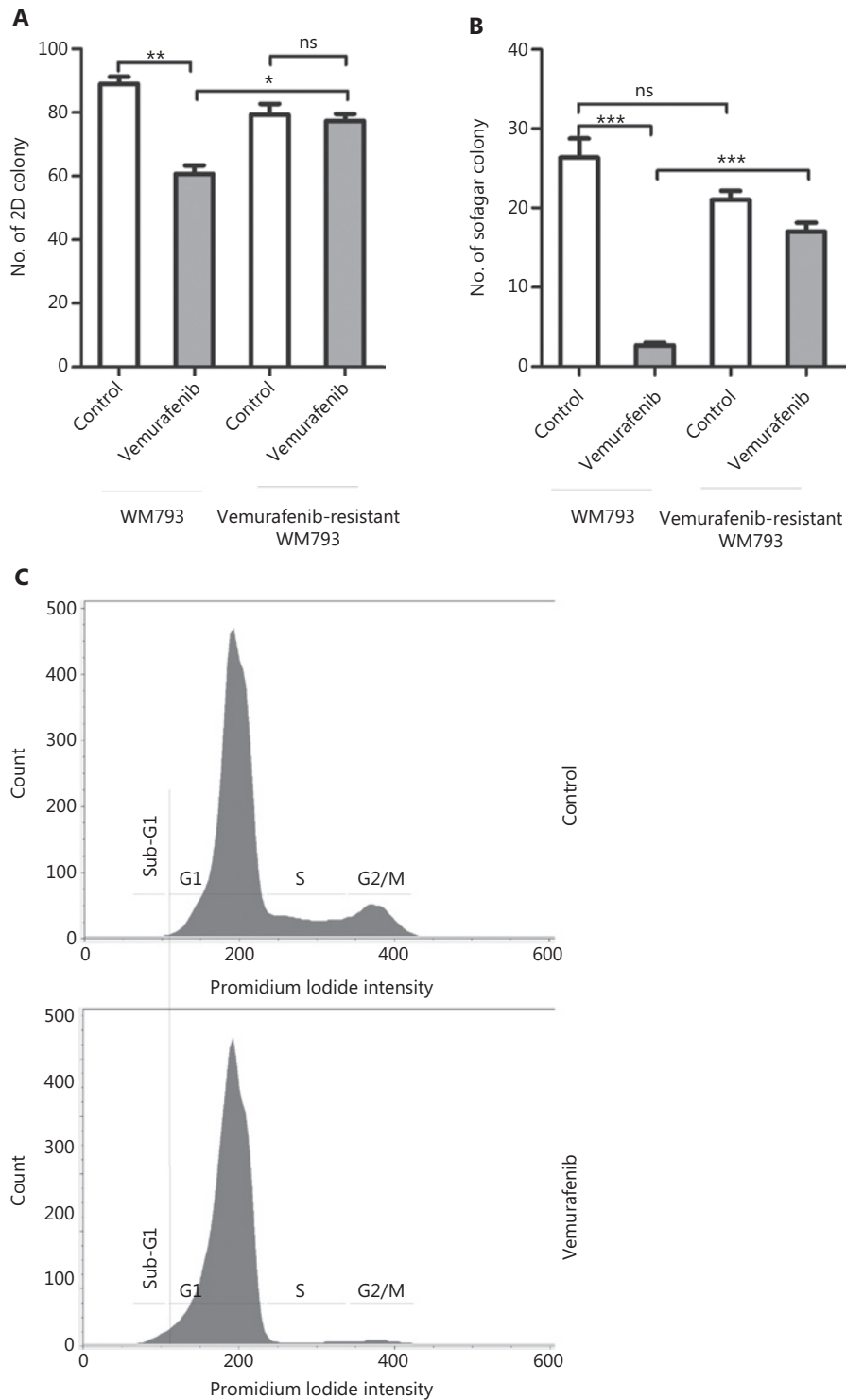
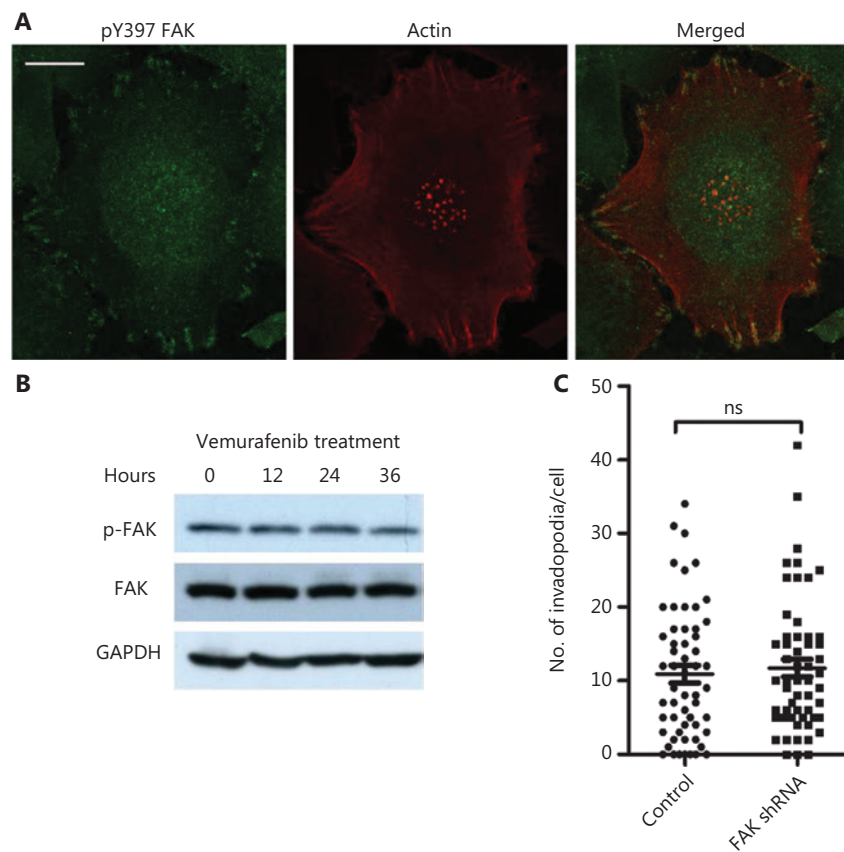


## Supplementary materials



**Figure S1** Effect of vemurafenib on WM793 cell growth. (A) The effects of vemurafenib on colony formation (two-dimensional culture) in naïve and vemurafenib resistant WM793 cells. (B) The effect of vemurafenib on colony formation (soft agar; three-dimensional cultures) in naïve and vemurafenib resistant WM793 cells. (C) The effects of vemurafenib on cell cycle arrest and apoptosis in naïve WM793 cells. \* $P < 0.05$ ; \*\* $P < 0.01$ ; \*\*\* $P < 0.001$ .



**Figure S2** FAK is not activated and is not involved in invadopodia formation. (A) Immunofluorescence staining of p-FAK and invadopodia (actin staining). Scale bars = 10  $\mu$ m. (B) Western blot analysis showed that vemurafenib treatment did not affect FAK or p-FAK levels. (C) The effect of FAK shRNA on invadopodia formation. PYK2, proline-rich tyrosine kinase 2; FAK, focal adhesion kinase; DTIC, dacarbazine; TMA, tissue microarray; OS, overall survival; PFS, progression-free survival; PBS, phosphate-buffered saline; ECM, extracellular matrix.

**Table S1** The relationships between p-Pyk2 expressions and clinicopathological parameters in 115 patients with melanomas

Parameters	<i>n</i>	Mean ± SEM	<i>P</i>
Sex			
Male	69	57.5 ± 3.0	0.285
Female	46	52.2 ± 4.1	
Age (years old)			
< 60	60	56.0 ± 3.7	0.780
≥ 60	55	54.7 ± 3.2	
Tumor site			
Acra	86	54.8 ± 2.8	0.696
Non-acra*	29	57.0 ± 5.3	
Stage			
I and II	81	50.5 ± 3.1	0.002
III and IV	34	66.9 ± 3.1	
Metastasis**			
No	53	44.2 ± 4.0	< 0.001
Yes	62	64.2 ± 2.5	

\*Includes non-acral cutaneous and mucosal melanomas.

\*\*Includes metastasis at diagnosis and during the follow-up.

**Table S2** The COX regression analyses of overall survival and progression-free survival in 115 patients with melanomas

Parameters	OS			PFS		
	<i>P</i>	RR	95% CI for RR	<i>P</i>	RR	95% CI for RR
Sex (female vs. male)	0.805	1.093	0.537–2.224	0.438	1.247	0.714–2.175
Age (≥ 60 vs. < 60 years old)	0.470	1.297	0.640–2.628	0.844	1.058	0.602–1.861
Tumor site (non-acra vs. acra)	0.001	3.406	1.601–7.247	0.078	1.740	0.939–3.224
Stage (III/IV vs. I/II)	0.008	2.573	1.284–5.153	0.033	1.879	1.052–3.354
p-Pyk2 (high vs. low)	0.007	3.304	1.385–7.883	0.001	2.930	1.518–5.657
DTIC treatment (no vs. yes)	0.576	0.794	0.354–1.783	0.716	1.129	0.588–2.168
Biotherapy* (no vs. yes)	0.788	0.883	0.355–2.194	0.808	1.094	0.530–2.258

\*Includes treatments with IFN, IL-2, LAK, and tumor vaccine. OS, overall survival; PFS, progression-free survival; DTIC, dacarbazine.