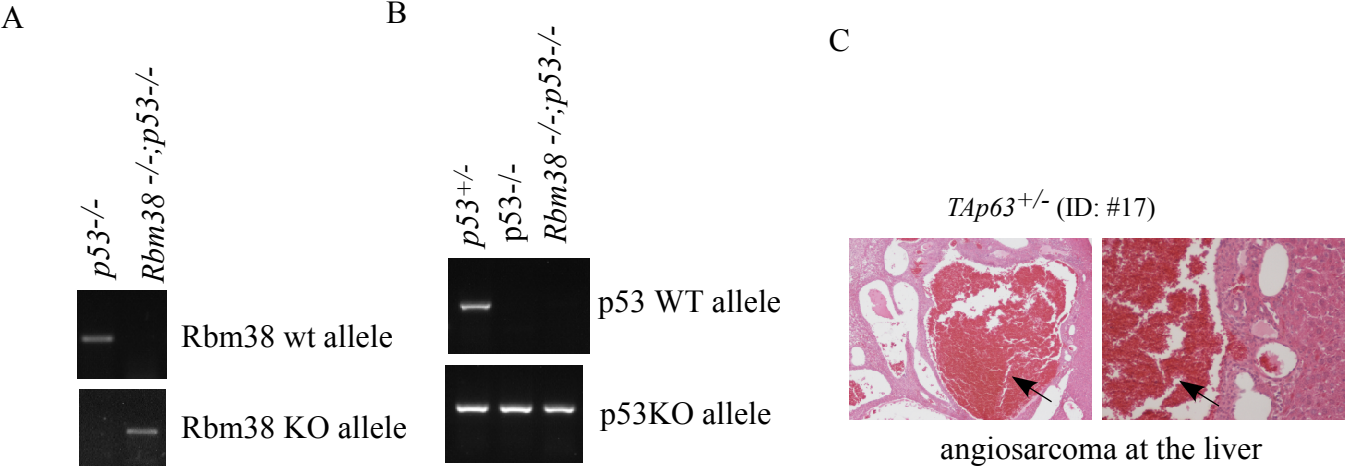
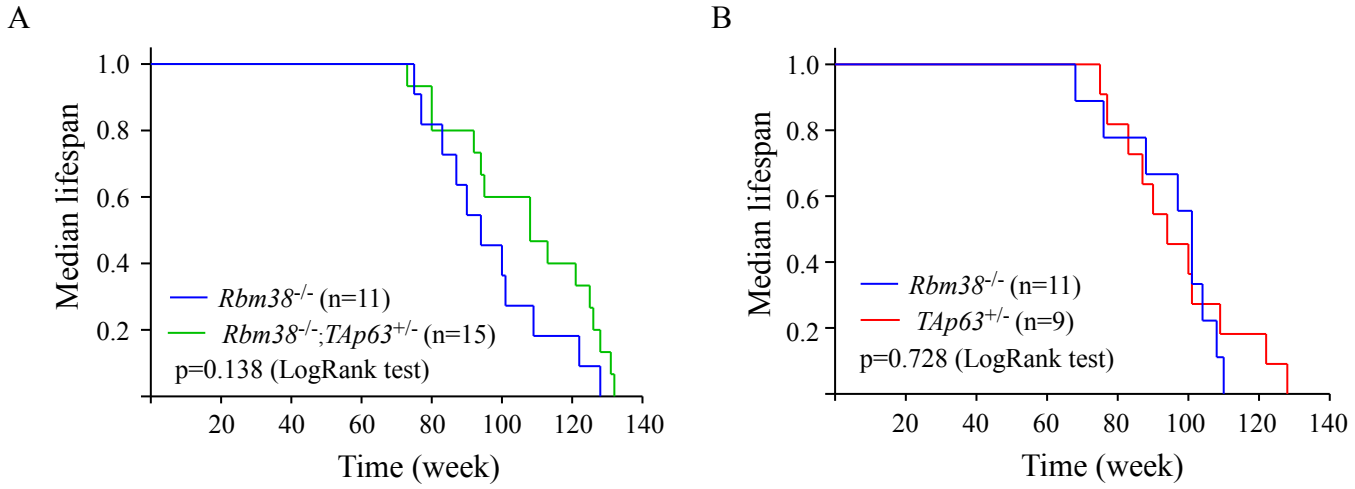


Supplemental Fig. S1



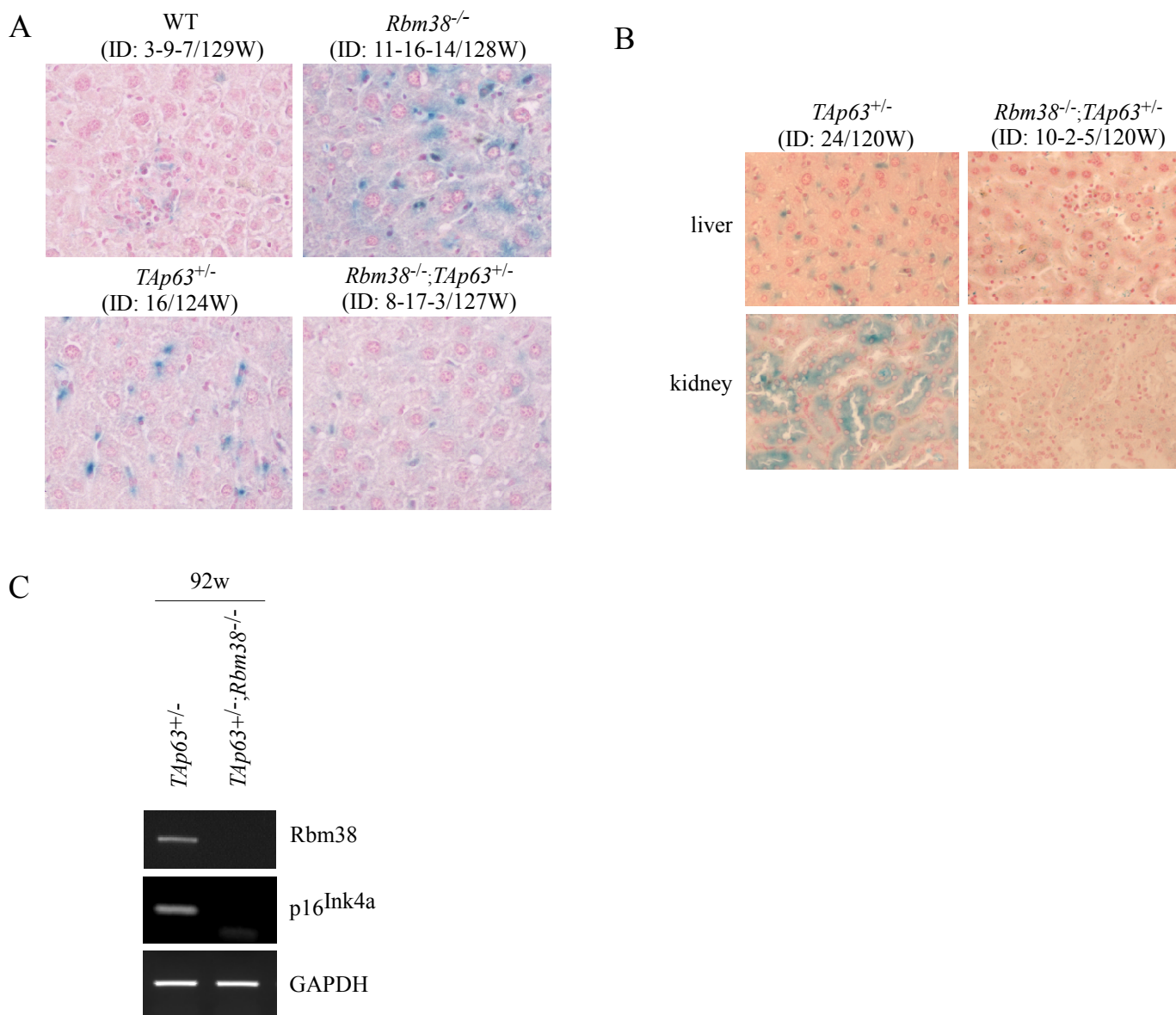
**Supplemental Fig. S1** (A-B) Confirmation of genotype of *p53*<sup>-/-</sup> and *Rbm38*<sup>-/-</sup>; *p53*<sup>-/-</sup> MEFs. (C) H.E.-stained angiosarcoma from the liver of a *TAp63*<sup>+/-</sup> mouse. Arrow indicated the tumor.

Supplemental Fig. S2



**Supplemental Fig. 2** (A) Kaplan-Meier survival curves of tumor-free *Rbm38*<sup>-/-</sup> (n=11) and *Rbm38*<sup>-/-</sup>;*TAp63*<sup>+/-</sup> (n=15) mice. The median survival time is 94 weeks for *Rbm38*<sup>-/-</sup> mice and 108 weeks for *Rbm38*<sup>-/-</sup>;*TAp63*<sup>+/-</sup> mice (p=0.138 by LogRank test). (B) Kaplan-Meier survival curves of tumor-free *Rbm38*<sup>-/-</sup> (n=11) and *TAp63*<sup>+/-</sup> (n=9) mice. The median survival time is 94 weeks for *Rbm38*<sup>-/-</sup> mice and 101 weeks for *TAp63*<sup>+/-</sup> mice (p=0.728 by LogRank test).

Supplemental Fig. S3



**Supplemental Fig. S3** (A) The SA-β-gal-stained liver tissues of WT (ID: 3-9-7/129W), *Rbm38*<sup>-/-</sup> (ID: 11-16-14/128W), *TAp63*<sup>+/-</sup> (ID: 16/124W), and *Rbm38*<sup>-/-</sup>;*TAp63*<sup>+/-</sup> (ID: 8-17-3/127W) were sectioned and counterstained with nuclear fast red. (B) The SA-β-gal-stained liver tissues of *TAp63*<sup>+/-</sup> (ID: 24/120W), and *Rbm38*<sup>-/-</sup>;*TAp63*<sup>+/-</sup> (ID: 10-2-5/120W) were sectioned and counterstained with nuclear fast red. (C) The level of Rbm38, p16<sup>Ink4a</sup> and GAPDH transcripts were examined in the liver tissues of *TAp63*<sup>+/-</sup> (ID: 10-2-1/92W) and *Rbm38*<sup>-/-</sup>;*TAp63*<sup>+/-</sup> (ID: 5-1-3/92W) mice.

Supplemental Table 1: Wild-type mice - survival time\*, tumor spectrum\*, liver steatosis, and other abnormalities\*

<b>ID</b>	<b>Gender</b>	<b>Survival (Weeks)</b>	<b>Tumor</b>	<b>Liver Steatosis</b>	<b>Other abnormalities</b>
1-24-2	M	83	No	Yes	N/A
2-15-2	F	140	Lymphoma	No	EMH in liver
2-19-6	M	132	No	No	EMH in spleen; Pancreatitis
2-19-2	F	143	No	No	EMH in spleen
3-11-3	M	129	No	No	N/A
3-28-5	F	85	No	Yes	EMH in spleen
3-9-7	M	129	No	No	N/A
5-12-3	F	99	Lymphoma	No	EMH in spleen
7-9-9	F	116	No	No	N/A
8-2-6	M	120	No	No	N/A
10-24-7	F	130	No	No	EMH in spleen; Pancreatitis
10-26-6	F	129	Histiocytic sarcoma	No	EMH in spleen and liver
11-10-7	M	121	No	No	N/A
11-7-3	F	121	No	No	N/A
11-29-2	F	144	No	Yes	EMH in spleen
12-2-4	F	113	No	No	N/A
12-20-7	F	115	No	No	EMH in spleen

\*Data adapted from *PNAS*, 111(52):18637-42

Supplemental Table 2: *Rbm38*<sup>-/-</sup> mice - survival time\*, tumor spectrum\*, liver steatosis, and other abnormalities\*

<b>ID</b>	<b>Gender</b>	<b>Survival (Weeks)</b>	<b>Tumor</b>	<b>Liver Steatosis</b>	<b>Other abnormalities</b>
1-12-2	M	100	Lymphoma	No	EMH in spleen
1-24-5	M	83	No	Yes	N/A
1-11-3	M	100	No	No	N/A
1-11-14	F	110	Histiocytic sarcoma	No	EMH in spleen
2-14-2	M	109	No	No	EMH in spleen
2-14-3	M	101	No	No	EMH in spleen
2-25-1	F	107	Lymphoma	No	EMH in spleen
3-7-2	F	101	Lymphoma	No	EMH in spleen
3-7-5	M	129	Lymphoma	No	EMH in liver
3-7-4	M	129	Hepatoma	No	EMH in spleen
6-15-3	F	90	No	Yes	EMH in spleen and liver
8-2-3	F	94	No	No	EMH in spleen
9-30-4	M	102	Hemangiosarcoma	No	EMH in spleen and liver
10-26-3	F	75	No	No	EMH in spleen
11-3-14	M	77	No	No	EMH in spleen
11-10-10	M	124	Lymphoma and hemangiosarcoma	No	EMH in spleen and liver
11-16-14	M	128	No	No	EMH in spleen and liver
11-16-7	F	125	Hepatoma and lymphoma	No	EMH in spleen
12-19-3	M	123	Lymphoma	No	EMH in spleen
12-19-8	M	118	Hepatoma	No	EMH in spleen and liver
12-19-6	F	87	No	No	N/A
12-24-2	M	122	No	Yes	N/A
12-28-5	F	102	Hepatoma and lymphoma	No	EMH in spleen

\*Data adapted from *PNAS*, 111(52):18637-42