

## Supplementary data

### Supplemental Tables

#### Supplemental Table 1

Number of cells required to form a xenograft tumor from a human undifferentiated pleomorphic sarcoma infected with a construct expressing a lentivirus expressing an anti- NG2/CSPG4 construct or a control. Knockdown of NG2/CSPG4 does not increase the number of cells required to form a xenograft tumor.

	Cell number injected	Tumors/Sites injected	Percentage
GFP-lentivirus	$1 \times 10^5$	4/4	100%
	$1 \times 10^4$	6/6	100%
	$1 \times 10^3$	6/6	100%
	$1 \times 10^2$	4/4	100%
anti-NG2/CSPG4-lentivirus	$1 \times 10^5$	4/4	100%
	$1 \times 10^4$	6/6	100%
	$1 \times 10^3$	6/6	100%
	$1 \times 10^2$	4/4	100%

#### Supplemental Table 2

Differential expression between tumors in which *Ng2/Cspg4* is depleted after a tumor has formed with those expressing *Ng2/Cspg4*. Statistically significant greater than twofold changes are shown from tumors that developed in *Kras*<sup>FRT-STOP-FRT-G12D/+</sup>; *p53*<sup>FRT/FRT</sup>; *Rosa26*<sup>+/+</sup>; *Ng2/Cspg4*<sup>ff</sup> mice compared to tumors from *Kras*<sup>FRT-STOP-FRT-G12D/+</sup>; *p53*<sup>FRT/FRT</sup>; *Rosa26*<sup>Cre-ER-T2/+</sup>; *Ng2/Cspg4*<sup>ff</sup> mice. The full data set is deposited in the GEO database (GEO: GSE97489).

**Gene Symbol****Fold regulation**

Adm	-7.9357
Casp7	2.2036
Ccl2	-4.8336
Cdc20	2.6256
Cox5a	2.3761
Dkc1	4.199
E2f4	2.9902
Ets2	2.6077
Fgf2	-2.6991
Foxc2	2.3001
Gadd45g	3.3183
Gpd2	2.1287
Hmox1	-3.7693
Igfbp3	-2.4944
Igfbp5	10.1147
Igfbp7	-3.7891
Ldha	-2.0909
Lig4	2.3335
Lpl	-2.6735
Mcm2	2.4923
Pfkl	-2.9899
Pgf	44.0699
Serpinb2	-4.1965
Serpinf1	-3.9415
Sirt1	2.6702
Skp2	3.2384
Stmn1	2.1397
Terf2ip	2.2312
Tnks2	2.0209
Uqcrrs1	2.3196
Vegfc	2.2911
Xrcc4	2.3267
Hsp90ab1	2.5509

### Supplemental Table 3

Differential expression between tumors in which *Ng2/Cspg4* is depleted at the time of tumor initiation with those expressing *Ng2/Cspg4*. Statistically significant greater than twofold changes are shown from tumors that developed in *Kras*<sup>G12D</sup>; *p53*<sup>ff</sup>; *Ng2/Cspg4*<sup>ff</sup> mice compared to tumors from *Kras*<sup>G12D</sup>; *p53*<sup>ff</sup>; *Ng2/Cspg4*<sup>+/+</sup> mice. The full data set is deposited in the GEO database (GEO: GSE97489).

#### Gene Symbol

#### Fold regulation

Acs14	-3.34
Adm	-16.20
Angpt1	5.10
Car9	-2.24
Casp7	-3.12
Casp9	-2.98
Ccl2	-8.94
Ccnd3	-4.26
Cdh2	-2.49
Cflar	-2.80
Ets2	-2.28
Fgf2	-7.50
Gadd45g	-9.00
Gpd2	-2.09
Gsc	-8.12
Hmox1	-5.85
Igfbp3	-358.35
Igfbp5	-233.07
Igfbp7	-16.31
Kdr	-3.26
Lpl	3.95
Map2k1	-3.58
Map2k3	-3.33
Nol3	-19.98
Pfk1	-2.82

Pgf	-20.34
Serpinb2	-37.20
Serpinf1	-2.38
Slc2a1	-3.44
Snail	-2.68
Tek	-3.66
Tep1	-3.71
Vegfc	-11.95

#### Supplemental Table 4

Differential expression between tumors in which *Ng2/Cspg4* is depleted at tumor initiation with tumors in which *Ng2/Cspg4* is depleted after a tumor has formed. Statistically significant greater than twofold changes are shown from tumors that developed in from *Kras*<sup>G12D</sup>; *p53*<sup>ff</sup>; *Ng2/Cspg4*<sup>ff</sup> mice compared to tumors from *Kras*<sup>FRT-STOP-FRT-G12D/+</sup>; *p53*<sup>FRT/FRT</sup>; *Rosa26*<sup>Cre-ER-T2/+</sup>; *Ng2/Cspg4*<sup>ff</sup> mice. The full data set is deposited in the GEO database (GEO: GSE97489).

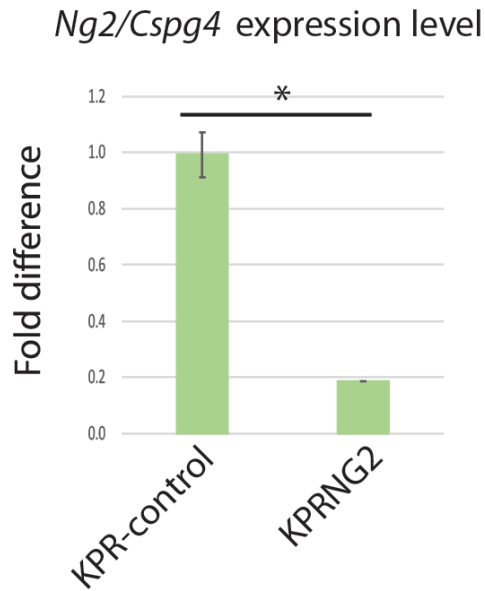
#### Gene Symbol

#### Fold regulation

Acs14	-3.86
Angpt1	4.69
Atp5a1	-2.07
Car9	-4.15
Casp7	-7.19
Casp9	-2.40
Ccl2	-3.14
Ccnd3	-3.79
Cdc20	-2.15
Cdh2	-3.56
Cflar	-2.02
Cox5a	-2.60
Cpt2	-2.01
Dsp	2.47
E2f4	-2.37

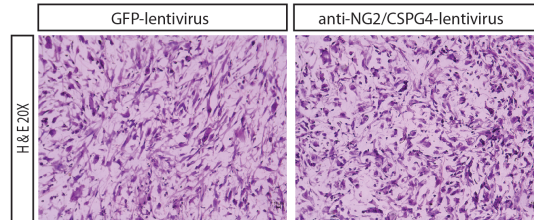
Ercc3	-2.18
Ets2	-2.70
Fgf2	-5.50
Flt1	5.41
Gadd45g	-43.91
Gpd2	-2.44
Gsc	-3.04
Hmox1	-3.06
Igfbp3	-74.02
Igfbp5	-251.18
Igfbp7	-10.01
Lig4	-2.91
Lpl	3.06
Map2k1	-2.81
Map2k3	-3.27
Mcm2	-2.35
Nol3	-48.83
Pgf	-337.10
Serpinb2	-17.75
Sirt1	-3.68
Sirt2	-2.03
Slc2a1	-3.01
Stmn1	-2.91
Terf2ip	-3.64
Vegfc	-13.12
Weel	-2.09
Xrcc4	-2.56
Actb	-2.82
Hsp90ab1	-2.32

## Supplementary figures and legends



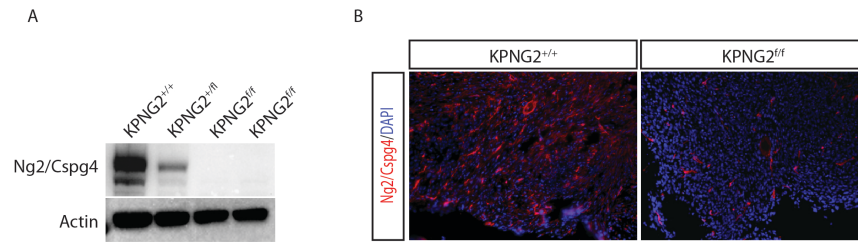
## Supplemental Figure One

**Supplemental Figure 1:** Level of *Ng2/Cspg4* expression in tumors generated from *Kras*<sup>FRT-STOP-FRT-G12D/+</sup>; *p53*<sup>FRT/FRT</sup>; *Rosa26*<sup>Cre-ER-T2/+</sup>; *Ng2/Cspg4*<sup>+/+</sup> (KPR-control) mice or *Kras*<sup>FRT-STOP-FRT-G12D/+</sup>; *p53*<sup>FRT/FRT</sup>; *Rosa26*<sup>Cre-ER-T2/+</sup>; *Ng2/Cspg4*<sup>fl/fl</sup> (KPRNG2) mice.



Supplemental Figure Two

**Supplemental Figure 2:** Histology of tumors that formed from human undifferentiated pleomorphic sarcoma cells established as xenografts infected with anti-NG2/CSPG4 construct or control. No significant difference is observed in cytology between control and NG2/CSPG4 knockdown.



Supplemental Figure Three

**Supplemental Figure 3:** Deletion efficiency for NG2/CSPG4 protein was confirmed by Western blot analysis (Panel A) , and Immunofluorescence staining (panel B) for tumors from *Kras*<sup>G12D</sup>; *p53*<sup>fl/fl</sup>; *Ng2/Cspg4*<sup>fl/fl</sup> (*KPNG2*<sup>fl/fl</sup>) mice.