SUPPLEMENTARY INFORMATION

Table S1. Optical density and RNA integrity numbers (RIN) measurements for all RNA samples.
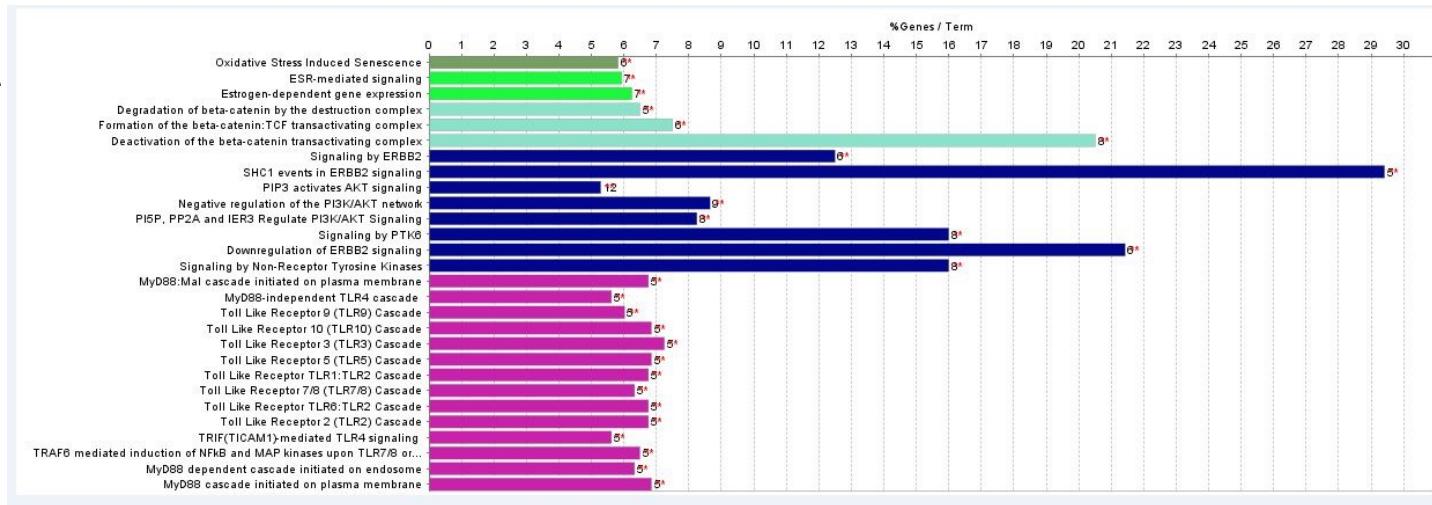
Table S2. Primer sequences used for qPCR.

Fig. S1. Predicted pathways obtained from the 55 (51 up- and 4 downregulated) statistically differentially expressed miRNAs ($P < 0.05$) found comparing 2 Gy irradiated to nonirradiated CD1 mouse lenses, clearly showing the activation of almost all pathways listed in Fig. 1C. Alternatively, among the very low number of statistically differentially expressed miRNAs (n = 13, $P < 0.05$, all downregulated) obtained from C57Bl/6J mouse lenses (2 Gy vs. 0 Gy), the only predicted pathway was the mTOR signaling (panel B), suggesting again a deregulation of cell cycle progression.

TABLE S1
Optical density and RNA integrity numbers (RIN) measurements for all RNA samples

Sample ID	Treatment	Conc. (ng/ml)	RIN
1	$Ptch1^{+/-}$/CD1 0 Gy	14.8	6.3
2	$Ptch1^{+/-}$/CD1 0 Gy	17.4	6.6
3	$Ptch1^{+/-}$/CD1 0 Gy	18.6	6.7
4	$Ptch1^{+/-}$/CD1 2 Gy	16.4	7.2
5	$Ptch1^{+/-}$/CD1 2 Gy	19.4	6.9
6	$Ptch1^{+/-}$/CD1 2 Gy	19.8	6.7
7	$Ptch1^{+/-}$/B6 0 Gy	18.8	6.3
8	$Ptch1^{+/-}$/B6 0 Gy	17.1	7.0
9	$Ptch1^{+/-}$/B6 0 Gy	16.6	7.3
10	$Ptch1^{+/-}$/B6 2 Gy	19	7.3
11	$Ptch1^{+/-}$/B6 2 Gy	17.3	7.4
12	$Ptch1^{+/-}$/B6 2 Gy	12.5	7.4

TABLE S2
Primer sequences used for qPCR

Gene	Forward primer	Reverse primer
Tlr4	5'-TTCAGAACTTCAGTGGCTGGAT -3'	5'-GTCTCCACAGCCACCAGATT-3'
IRAK-4	5'-CTTTTGACGGTTTGGGGAA-3'	5'-CGGCGACGACAGATACAAT-3'
IκBα	5'-TGGAAGTCATTGGTCAGG-3'	5'-ACAGGCAAGATGTAGAGG-3'
p53	5'-TGCATGGACGATCTGTTGCT-3'	5'-TTCACTTGGGCCTTCAAAA-3'
p21	5'-CGAGAACGGTGGAACTTTGAC-3'	5'-CAGGGCTCAGGTAGACCTTG-3'
Smad3	5'-GCCCTCCTAGCTCAGTCTGTCA-3'	5'-ATGCGCGTCAGCTGGTAGA-3'
Gapdh	5'-CATGGCCTTCCGTGTTCCTA-3'	5'-GCGGCACGTCAGATCCA-3'

A

%Genes / Term

Term	Value
Oxidative Stress Induced Senescence	6*
ESR-mediated signaling	7*
Estrogen-dependent gene expression	7*
Degradation of the beta-catenin by the destruction complex	5*
Formation of the beta-catenin:TCF transactivating complex	6*
Deactivation of the beta-catenin transactivating complex	8*
Signaling by ERBB2	6*
SHC1 events in ERBB2 signaling	5*
PIP3 activates AKT signaling	12
Negative regulation of the PI3K/AKT network	9*
PI5P, PP2A and IER3 Regulate PI3K/AKT Signaling	8*
Signaling by PTK6	8*
Downregulation of ERBB2 signaling	6*
Signaling by Non-Receptor Tyrosine Kinases	8*
MyD88:Mal cascade initiated on plasma membrane	5*
MyD88-independent TLR4 cascade	5*
Toll Like Receptor 9 (TLR9) Cascade	5*
Toll Like Receptor 10 (TLR10) Cascade	5*
Toll Like Receptor 3 (TLR3) Cascade	5*
Toll Like Receptor 5 (TLR5) Cascade	5*
Toll Like Receptor TLR1:TLR2 Cascade	5*
Toll Like Receptor 7/8 (TLR7/8) Cascade	5*
Toll Like Receptor TLR6:TLR2 Cascade	5*
Toll Like Receptor 2 (TLR2) Cascade	5*
TRIF(TICAM1)-mediated TLR4 signaling	5*
TRAF6 mediated induction of NFkB and MAP kinases upon TLR7/8 or...	5*
MyD88 dependent cascade initiated on endosome	5*
MyD88 cascade initiated on plasma membrane	5*

B

%Genes / Term

Term	Value
mTOR signalling	2 **
Energy dependent regulation of mTOR by LKB1-AMPK	2 **