SUPPLEMENTAL DATA FIGURE LEGENDS

Figure S1. Demethylating agent 5-aza induces MAP2 protein expression. Immunostaining for MAP2 protein expression in 451Lu cells treated with 5-aza. Cells were seeded on glass coverslips and treated with 5-aza and after 72 hours of treatment cells were stained using anti-MAP2 antibody, followed by anti-mouse IgG-FITC and PI and photographed using confocal microscope.

Figure S2. Representative sequencing chromatogram of analyzed *MAP2* CpG island sequences of bisulfite-treated DNA of brain and 451Lu metastatic melanoma cells. CpG nucleotides numbers are given above of 3' proximal region.

Figure S3. Completeness of the MAP2 promoter *in vitro* methylation. *In vitro* methylated and unmethylated *MAP2* promoters were determined by methylation-sensitive (*Hpa*II) and methylation-insensitive (*Msp*I) restriction digestion. Agarose gel electrophoresis and ethidium bromide staining were used to analyze the enzyme digested DNA.

Figure S4. Human melanoma cells exhibit neuronal differentiation. (A) Immunofluorescence analysis of expression of neuronal marker proteins β-III-tubulin, synaptophysin and 70 kDa neurofilament protein in a panel of primary (WM35, WM115) and metastatic (SK-MEL-19, 451Lu and C22). Merged images with antibody staining in green or red and the DAPI stained nuclei (blue) are shown. (B) RT-PCR analysis of transcriptional factors involved in commitment to neuronal differentiation. Total RNA from undifferentiated neuroepithelial cells (NEC), teratocarcinoma cells (NT2/D1), normal primary neonatal human foreskin melanocytes (NMC), primary (WM35, WM115) and metastatic melanoma cells (amelanotic SK-MEL-2, -28, 451Lu and pigmented SK-MEL-19 and-22) was analyzed using primers and PCR conditions described in *Materials & Methods*.

Figure S5. Mutant BRAF expression does not result in non-specific stimulation of gene promoters. (A) Activities of catalase and human tyrosinase related protein 1 (*TYRP1*) promoters in vector control and mBRAF transfected 451Lu melanoma cells. Data shown are relative luciferase activity (RLA, mean ±SEM, from triplicate wells in 2 independent experiments. **(B)** HES1 represses BRAF induced MAP2 promoter activity. 451Lu cells were co-transfected with MAP2.4 promoter plasmid, mBRAF expression plasmid and increasing amount of (150, 325, 650ng) of mouse Hes1 expression plasmid pCI-Hes1. Forty-eight hours after transfection luciferase activity was measured and data (mean ±SEM, $p<0.001$) are represented as percent activity of the empty vector control.

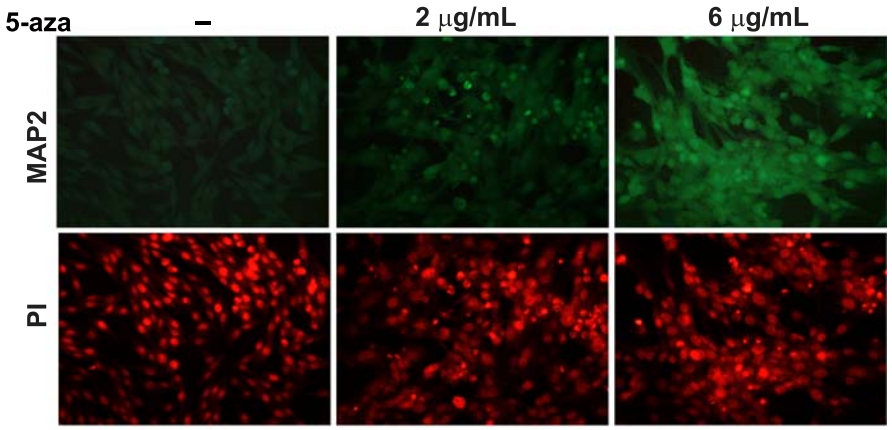


Figure S1.

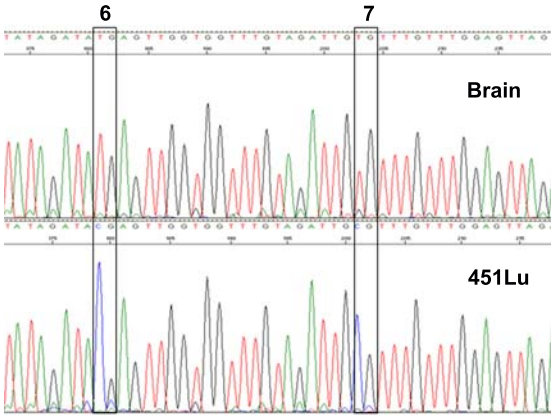
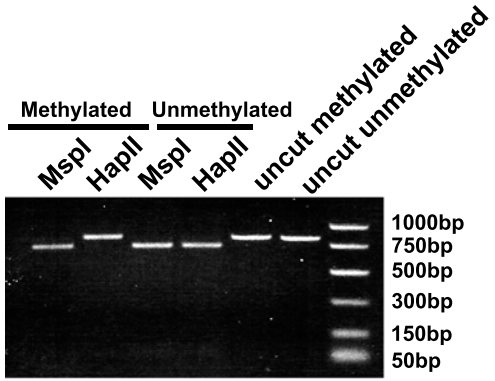


Figure S2


Methylated
Unmethylated
MspI
HapII
MspI
HapII
uncut methylated
uncut unmethylated
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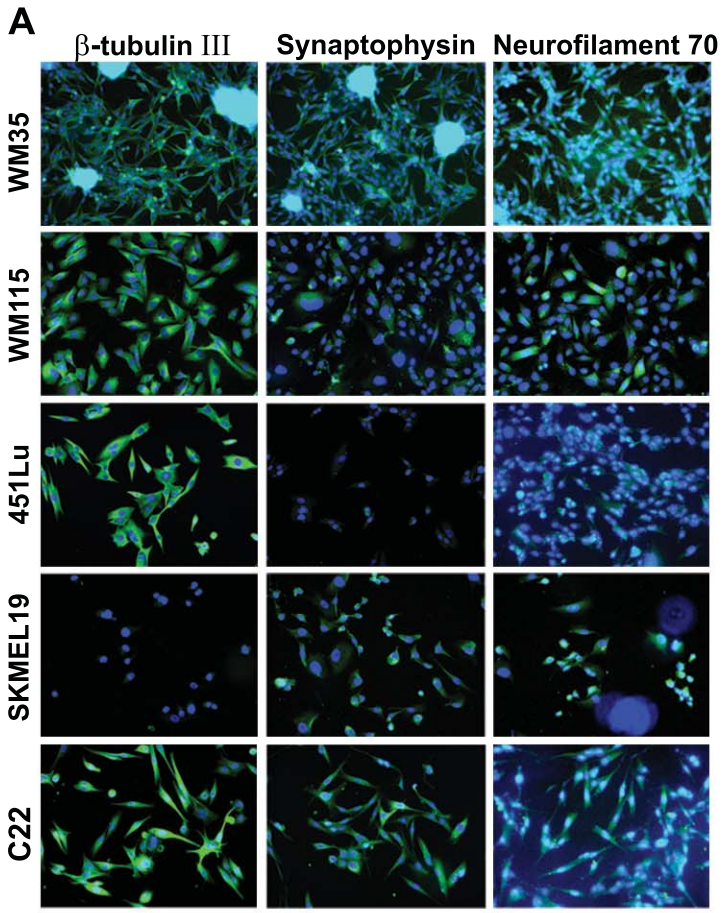
750bp
500bp
300bp
150bp
50bp

Figure S3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Synaptophysin
Neurofilament 70
WM35
WM115
451Lu
SKMEL19
C22
B
Primary
Metastatic
NEC
NT2-D1
NMC
RGP
VGP
Amelanotic
Pigmented
Nkx 2.2
Pax6
Nkx 6.1
Olig2
N-CAM
Actin

Figure S4

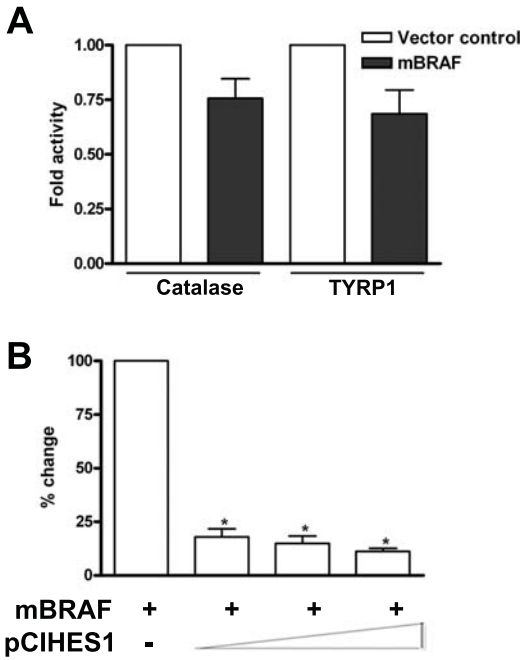
A
Vector control
mBRAF
Fold activity
1.00
0.75
0.50
0.25
0.00
Catalase
TYRP1
B
% change
100
75
50
25
0
mBRAF + + + +
pCIHES1 -

Figure S5