

Figure S1.

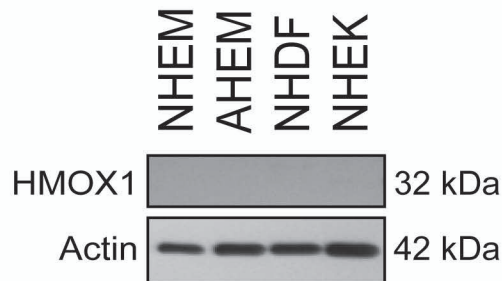


Figure S1. HMOX1 protein is not expressed at baseline in primary cutaneous cell lines. Protein levels of HMOX1 and Actin (loading control) were measured by Western blot analysis in untreated neonatal human epidermal melanocytes (NHEM), adult human epidermal melanocytes (AHEM), neonatal human dermal fibroblasts (NHDF), and neonatal human epidermal keratinocytes (NHEK).

Figure S2.

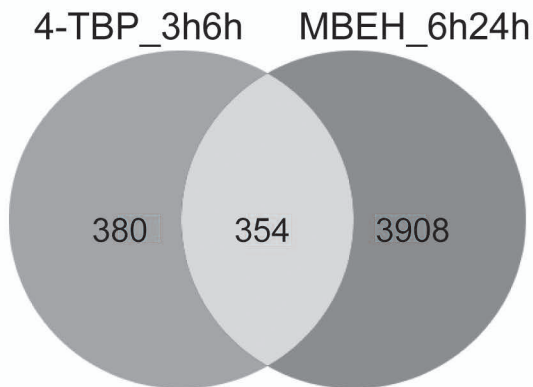


Figure S2. 354 genes are commonly upregulated in melanocytes upon exposure to 4TBP and MBEH. Melanocytes were dosed with 4-TBP (250 μ M) or MBEH (300 μ M) for 3, 6, and/or 24 hours as indicated and total RNA hybridized to Affymetrix Gene Chip Human Genome U133 Plus.2. Results were analyzed using GenePattern. Fold Change > 2.0; False Discovery Rate \leq 0.01

Figure S3.

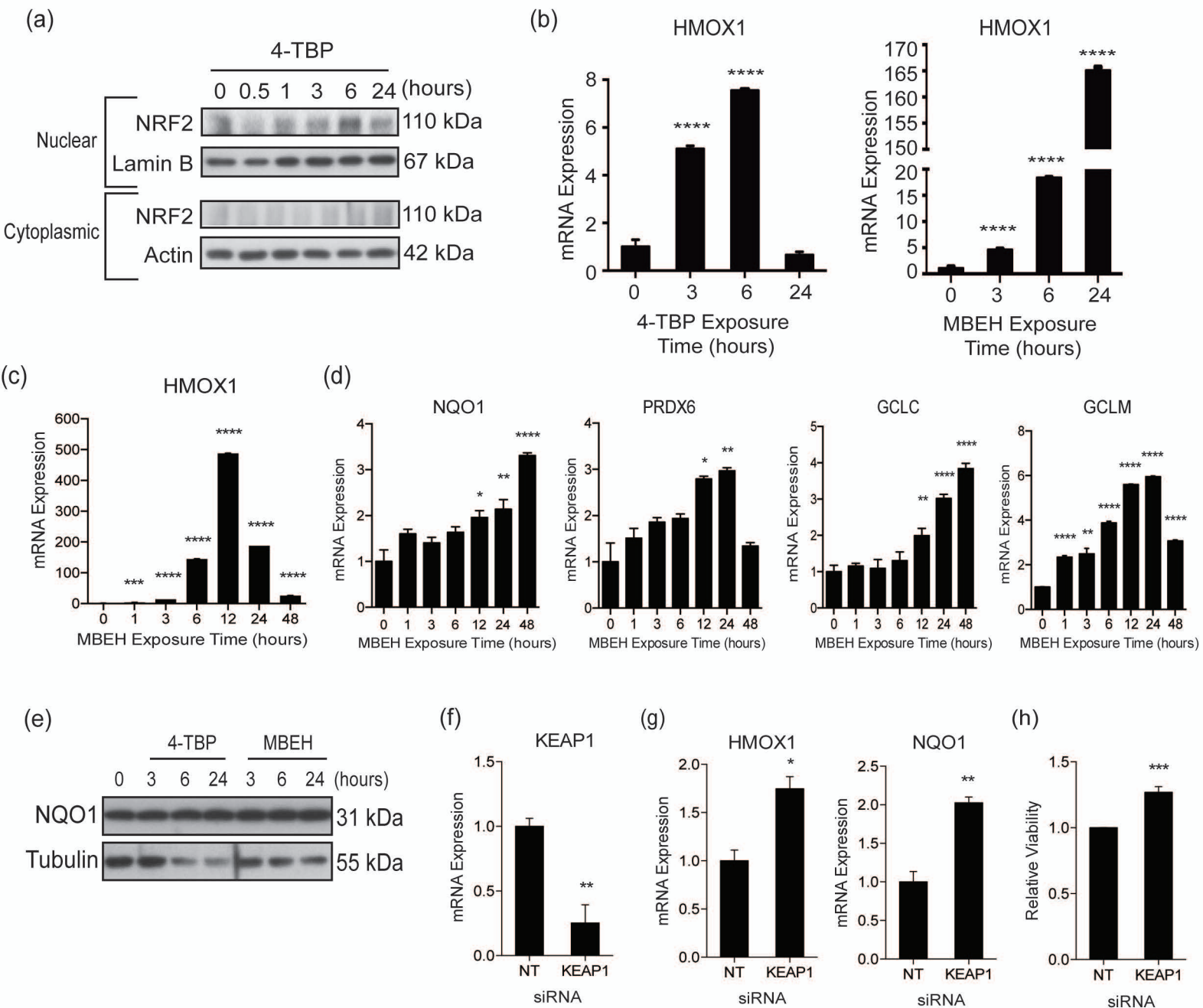


Figure S3. VIP exposure activates the NRF2 response and NQO1 is constitutively expressed.

Normal melanocytes were stimulated with 4-TBP (250 μ M) or MBEH (300 μ M) for increasing periods up to 24 hours. (a) Nuclear and cytoplasmic fractions were extracted and NRF2 protein expression measured with Western blot analysis. (b) mRNA expression of NRF2 target, HMOX1, was measured relative to housekeeping gene RPLP0 using quantitative RT-PCR. (c-d) mRNA expression of NRF2 targets, HMOX1, NQO1, PRDX6, GCLC, and GCLM was measured over 48 hours relative to housekeeping gene RPLP0 using quantitative RT-PCR. (e) Total protein lysate was extracted for Western blot analysis of NQO1 protein expression. Melanocytes were transfected with KEAP1 siRNA or NT control siRNA for 48 hours and mRNA expression of (f) KEAP1 and (g) NRF2 targets, HMOX1 and NQO1 measured. (h) Melanocytes were transfected with KEAP1 siRNA and relative viability measured, compared to NT siRNA. The data is presented as mean \pm SEM, n=3 * p < 0.05; ** p < 0.01; *** p < 0.001; **** p < 0.0001.

Figure S4

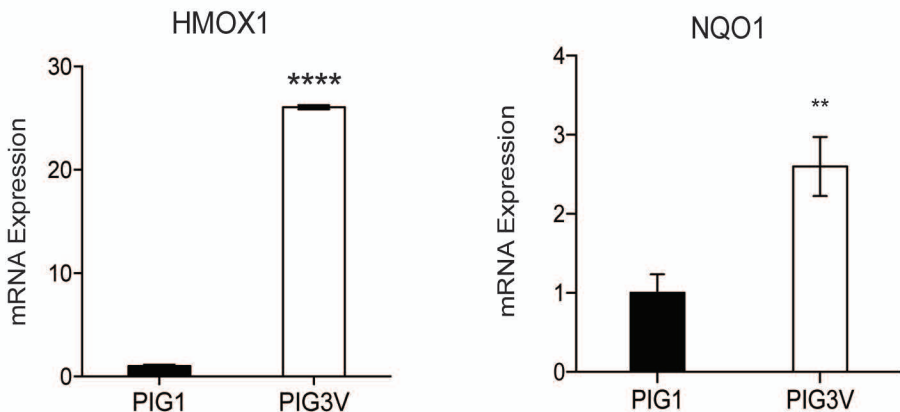


Figure S4. Untreated vitiligo melanocytes express high levels of HMOX1 and NQO1. mRNA expression of HMOX1 and NQO1 were compared in untreated normal (PIG1) and vitiligo (PIG3V) immortalized melanocyte lines. The data is presented as mean \pm SEM, $n=3$, ** $p < 0.01$; **** $p < 0.0001$

Figure S5.

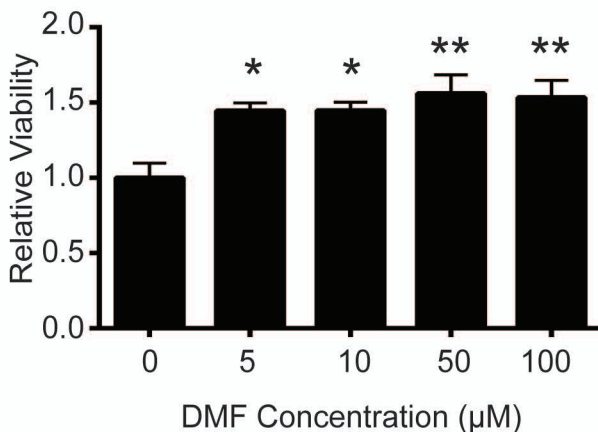


Figure S5. DMF is non-toxic to melanocytes at high doses.

Melanocytes were treated with increasing concentrations of DMF as in Fig. 4a-b and relative viability measured after 24 hours. The data is presented as mean \pm SD n=3, * p < 0.05; ** p < 0.01.