**Supplemental Figure 1**

Resveratrol mediated effects on CNV are Sirt1 independent. **A:** Sirt1 activity *in vitro* was assessed by incubating recombinant Sirt1 with substrate (*Flour de Lys*$^{TM}$-Sirt1 + $NAD^{+}$) with or without resveratrol or Sirt1 inh III or suramin, a known inhibitor of Sirt1. Readings were taken by a microplate reader capable of excitation at 360 and emission at 460. **B:** Sirt1 activity *in vivo* was assessed on lysates of lasered eyes from mice treated with vehicle, resveratrol, or sirt1 inh III. Values are averages $\pm$ SE and * indicates that the $p \leq 0.05$.

**Supplemental Figure 2**

Resveratrol inhibits proliferation and migration of HMVECs in a sirt1 independent manner. **A:** HMVECs were cultured to confluence and pretreated with sirt1 inh III for 2 hrs. Cell migration was assessed in the scratch assay as described in the Methods. **B:** Ability of HMVECs to form tubes on matrigel and the effects of resveratrol were measured in a tube assay. **C:** Cells from scratch assay were lysed and RNA was isolated and evaluated for Sirt1 expression by RTPCR and real time PCR. **D:** HMVECs were transfected with Sirt1 siRNA or control siRNA (60 pmols) for 24hrs. Cells were then treated with resveratrol (4$\mu$g/ml) and scratch assay was performed.

**Supplemental Figure 3**

PCB, TGM2 and eEF2 were identified on the basis of peptide sequences. HMVECs were stimulated with resveratrol (4$\mu$g/ml) for various time points (0, 15, 30 and 60 mins). Cells were lysed and lysates were evaluated for **A:** pSerine and **B:** pThreonine. Beta-actin was used as a loading control. **C:** Immunoprecipitates were resolved by 10% SDS-PAGE and the gel was stained with Commassie blue stain. Visible bands of 130 kd & 75 kd (pSerine) and 130 kd & 95 kd (pThreonine) were excised and evaluated by mass spectrometry. **D:** HMVECs were pretreated with either cystamine (Cys-1mM) or phenyl acetic acid (PAA- 5mM) for 2 hrs prior to treatment with resveratrol (4$\mu$g/ml) and performing a

scratch assay. **E:** Cells were counted in four random fields to assess the migration of cells into the scratched area. **F:** Proliferation assay was performed on HMVECs treated with vehicle or resveratrol (4 μg/ml) and the effect of cystamine (Cys-1mM) and PAA (PAA- 5mM) examined. Values are averages $\pm$ SE. and * indicates that p values are $\leq$ 0.05.

**Supplemental Figure 4**

Resveratrol induced effects on endothelial cells migration and proliferation are mediated by eEF2K. **A:** HMVECs were transfected with eEF2 or eEF2K siRNA for 24 hrs. Cells were then treated with resveratrol (4μg/ml) for 20 hrs and a scratch assay was performed. **B:** Cells from the scratch assay were lysed and analyzed for eEF2 protein expression by western blotting. **C:** Lysates were also analyzed for eEF2K protein expression.

**Supplemental Figure 5**

AMPK mediates the effect of resveratrol on eEF2 and eEF2 kinase activity. **A:** HMVECs were transfected with AMPK siRNA for 24 hrs and then treated with resveratrol (4μg/ml) prior to performing a scratch assay. **B**: Cells from the scratch assay were lysed and analyzed for AMPK protein expression by western blotting.