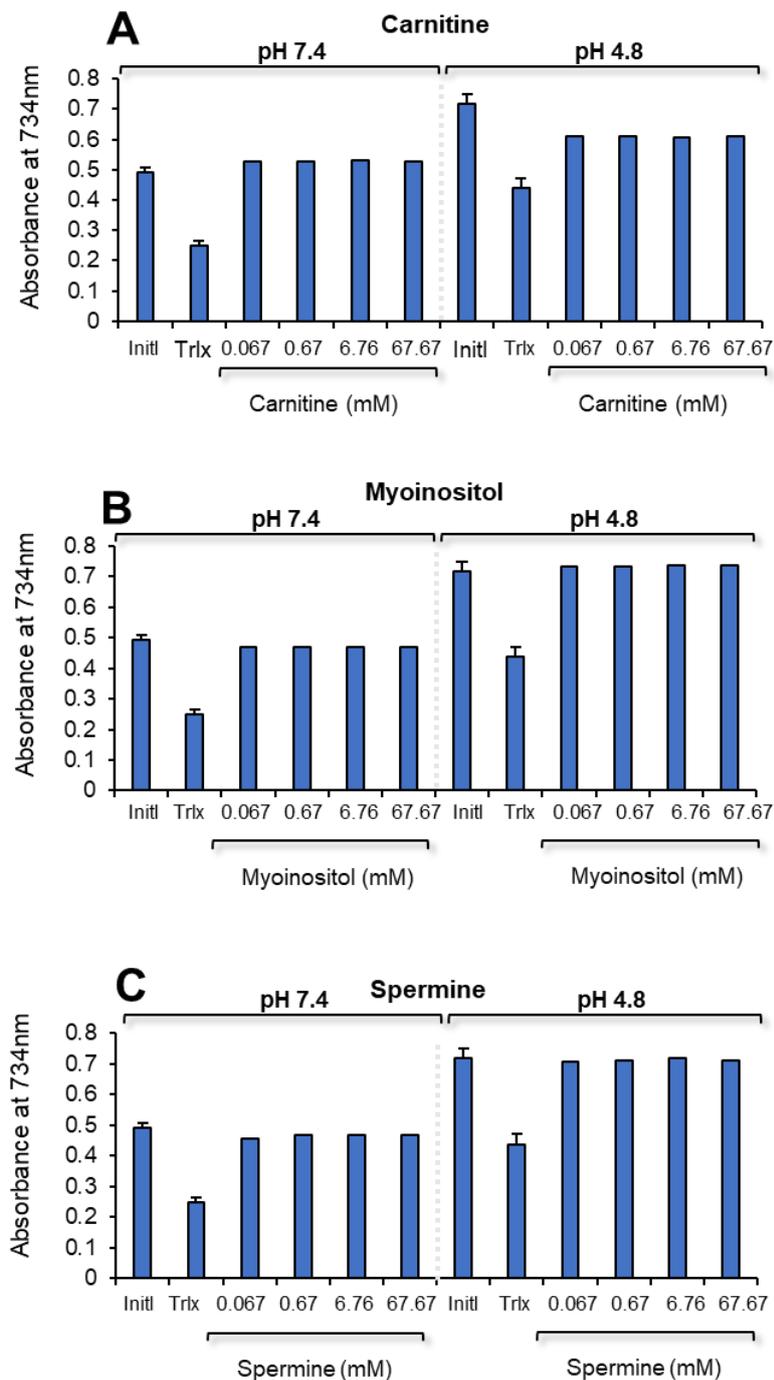
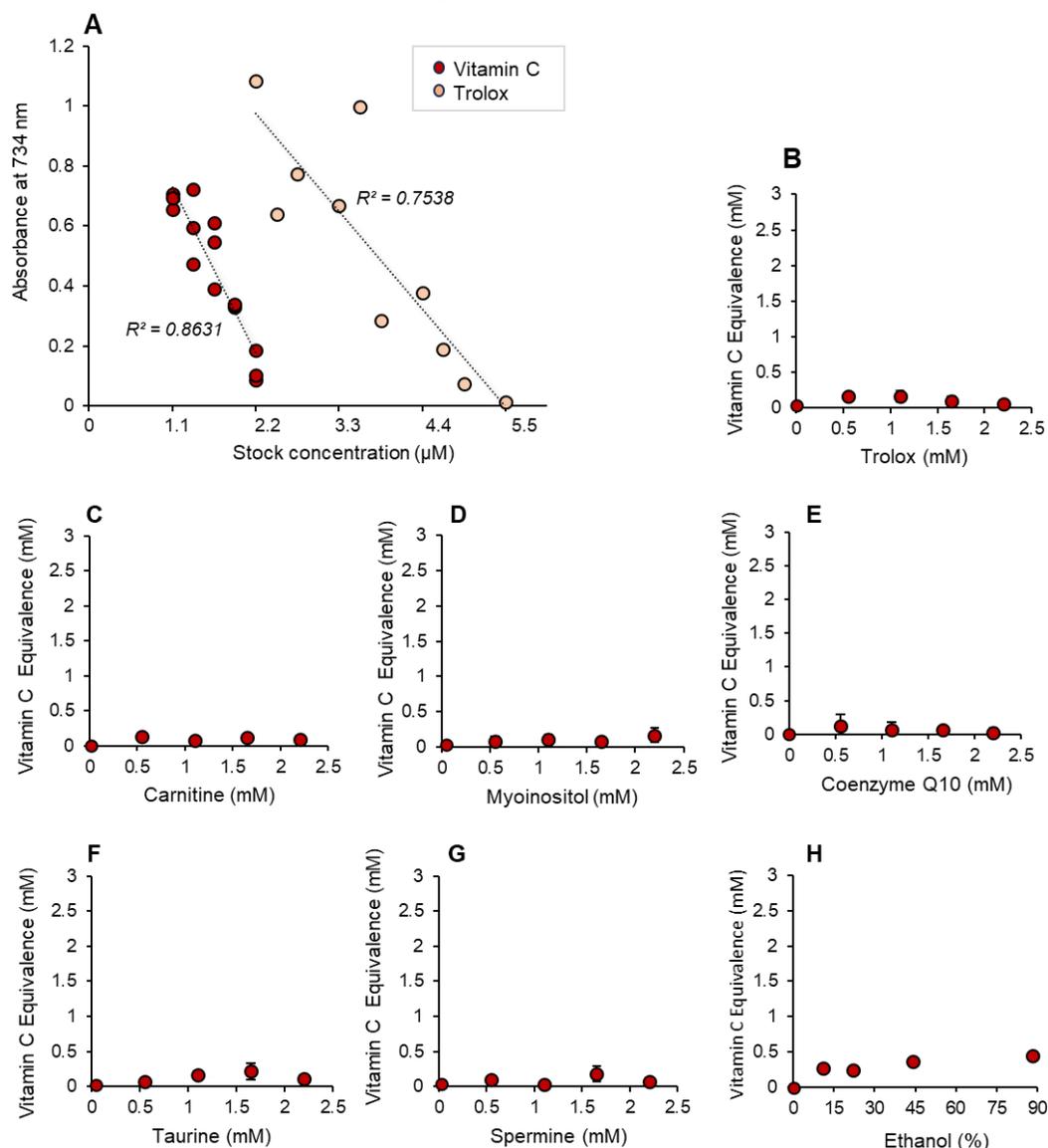


Impact of pH on antioxidant activity



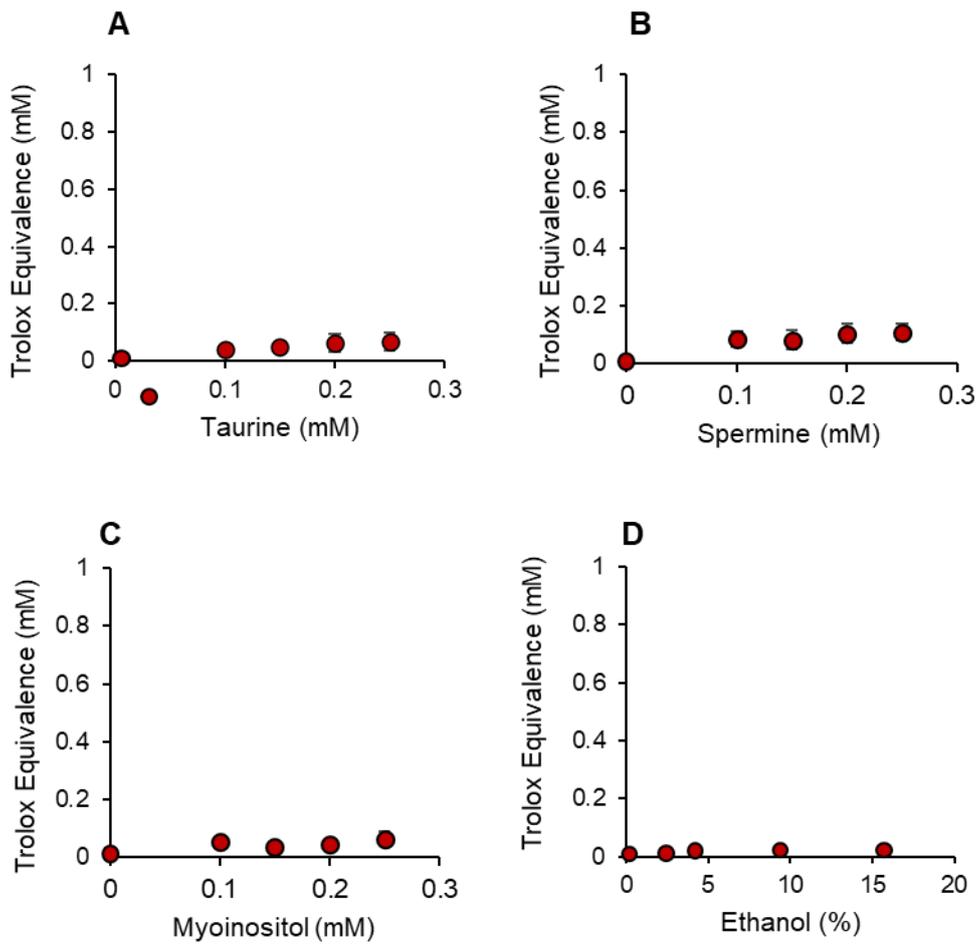
Supplementary Figure S1. Demonstration that elevating the pH at which the post-activation, free radical scavenging assay is conducted, makes no difference to the levels of antioxidant activity observed. Trolox (Trlx) consistently decreased the absorbance associated with the electrochemically generated $ABTS^{*+}$ radical (Initl), however no dose-dependent antioxidant activity was observed at pH 4.8 or 7.4 in response to **(A)** carnitine, **(B)** myoinositol and **(C)** spermine. These compounds therefore appear to possess no significant radical scavenging activity in this antioxidant assay, although the overall rates of absorbance were significantly higher at the lower pH ($p < 0.001$).

Antioxidant activity in pre-activation assay



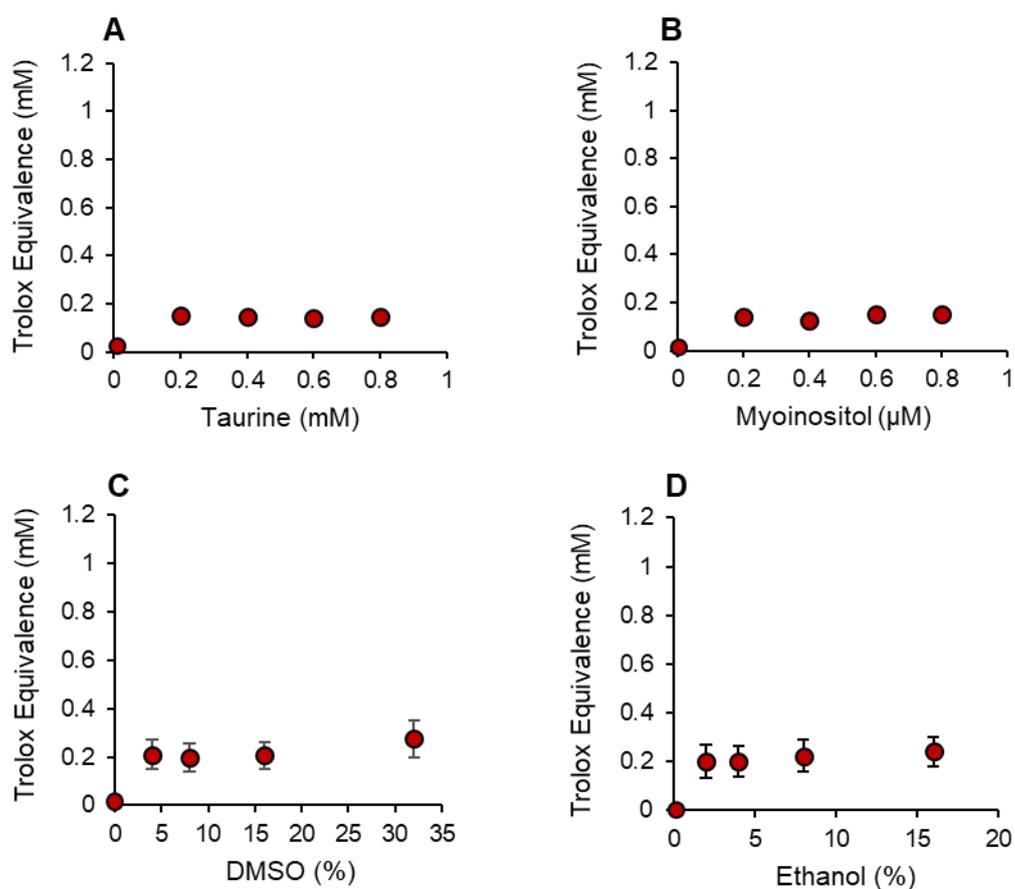
Supplementary Figure S2. Analysis of antioxidant activity with the pre-activation, electrochemical ABTS assay. **(A)** A comparison of vitamin E and Trolox revealed that the pre-activation antioxidant assay is particularly sensitive to vitamin C, whereas Trolox was both less active and gave more variable results. The stock solution was diluted 55-fold in the assay giving a range of final concentrations from 20-100 μM . Given the variability observed with Trolox, vitamin C was selected as the standard for this assay. Comparison of compounds in the antioxidant panel revealed a low level of activity for **(B)** Trolox as well as **(C)** carnitine, **(D)** myoinositol, **(E)** coenzyme Q10, **(F)** taurine, **(G)** spermine, and **(H)** ethanol. **B-H.** Data represent mean \pm SE of 3 independent assessments.

Antioxidant activity in the hydrogen peroxide scavenging assay



Supplementary Figure S3. Analysis of antioxidant activity with the hydrogen peroxide scavenging system. None of the compounds referenced in this figure exhibited significant activity including (A) taurine, (B) spermine, (C) myoinositol and (D) ethanol. Data represent mean \pm SE of 3 independent assessments.

Antioxidant activity in the organic peroxide scavenging assay



Supplementary Figure S4. Analysis of antioxidant activity with the organic peroxide/peroxide radical scavenging system. All of the compounds referenced in this figure exhibited a low level of activity that was not dose dependent including (A) taurine, (B) myoinositol, (C) DMSO and (D) ethanol. Data represent mean \pm SE of 3 independent assessments.