Supplementary Data

Effects of the Superoxide Dismutase/Catalase Mimetic EUK-207 in a Mouse Model of Alzheimer’s Disease: Protection Against and Interruption of Progression of Amyloid and Tau Pathology and Cognitive Decline

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Handling Associate Editor: D. Allan Butterfield

Accepted 31 January 2012

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Supplementary Figure 1. Absence of deficit in contextual or cued fear conditioning in 3xTg-AD mice at 7 months of age. Four month-old non-Tg and 3xTg-AD mice were treated for 3 months with EUK-207 and then trained in a contextual and cued fear conditioning paradigm. Mice were tested 24 h after training for the context test (A) and 48 h after training for the cue test (B). Results were calculated as percent time the mouse exhibited freezing behavior during the 8-min observation period for the context test (A) and cue test (B). Shown are means ± SEM of 11-12 mice. One-way ANOVA indicated that there was no significant difference in performance between non-Tg and 3xTg-AD mice in both the context (A) and cue test (B).
Supplementary Figure 2. Correlation between fear conditioning performance, AD associated pathology, and brain levels of lipid peroxidation in 3xTg-AD mice. Individual data for brain levels of detergent soluble Aβ1-42 were plotted against lipid peroxidation (A) or contextual fear conditioning performance (B) for all 3xTg-AD animals in the study (vehicle and EUK-207) and regression lines were plotted and analyzed. Levels of Aβ1-42 were expressed as picogram per microgram of protein (A and B); lipid peroxidation was expressed as nanomolar malondialdehyde equivalent per milligram of protein (A) and contextual fear conditioning performance was calculated as percent time the mouse expressed freezing behavior during the 8-min observation period for context (B). Analysis of plotted regression lines revealed a significant positive correlation between brain levels of lipid peroxidation and detergent soluble Aβ1-42 (A) as well as a significant negative correlation between contextual fear conditioning performance and detergent soluble Aβ1-42 (B). Individual data for Aβ pathology (6E10 staining) in the CA1 region of the dorsal hippocampus was also plotted against contextual fear conditioning performance (C) as well as tau pathology (HT7 staining) in the CA1 region of the dorsal hippocampus (D). Hippocampal 6E10 and HT7 staining was expressed as percentage of vehicle non-Tg (C and D). Regression lines were plotted and analysis indicated a significant negative correlation between 6E10 staining within the CA1 region of the dorsal hippocampus and contextual fear conditioning performance (C) and a significant positive correlation between Aβ and tau accumulation within the CA1 region of the dorsal hippocampus.