

## PubMed Results

Item 1 of 1

1. Free Radic Biol Med. 2010 May 15;48(10):1388-98. Epub 2010 Feb 24.

## **HIV proteins (gp120 and Tat) and methamphetamine in oxidative stress-induced damage in the brain: potential role of the thiol antioxidant N-acetylcysteine amide.**

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### **Abstract**

An increased risk of HIV-1 associated dementia (HAD) has been observed in patients abusing methamphetamine (METH). Since both HIV viral proteins (gp120, Tat) and METH induce oxidative stress, drug abusing patients are at a greater risk of oxidative stress-induced damage. The objective of this study was to determine if N-acetylcysteine amide (NACA) protects the blood brain barrier (BBB) from oxidative stress-induced damage in animals exposed to gp120, Tat and METH. To study this, CD-1 mice pre-treated with NACA/saline, received injections of gp120, Tat, gp120+Tat or saline for 5days, followed by three injections of METH/saline on the fifth day, and sacrificed 24h after the final injection. Various oxidative stress parameters were measured, and animals treated with gp120+Tat+Meth were found to be the most challenged group, as indicated by their GSH and MDA levels. Treatment with NACA significantly rescued the animals from oxidative stress. Further, NACA-treated animals had significantly higher expression of TJ proteins and BBB permeability as compared to the group treated with gp120+Tat+METH alone, indicating that NACA can protect the BBB from oxidative stress-induced damage in gp120, Tat and METH exposed animals, and thus could be a viable therapeutic option for patients with HAD.

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