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TITLE

# Understanding the Mechanism of Antioxidant Potential of Organochalcogensin Rat's Brain Preparation

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Organoselenium compounds are thought to be the one of the most promising class of compounds which has shown versatile potential for the treatment of various pathological disorders in different experimental models. However little is known about the exact biochemical mechanism of action of these compounds. Taking a step in this regard we have screened a series of organochalcogens for their structural-activity relationship using rat's brain preparation. The compounds were tested against sodium Nitroprusside (SNP) induced lipid peroxidation process. Precisely, rat brain homogenate was incubated under physiological conditions and extent of lipid peroxidation i.e. Thiobarbituric acid-reactive species (TBARS) production was measured. We have found that dichalcogenides are better anti-oxidants than structurally analogues mono- chalcogenides which could be attributed to the number of selenol (SeH) molecule formation. We have proved that the presence of electron donating groups significantly improves the anti-oxidant potential. Furthermore, mesomerically electron donating group i.e. Methoxy ($CH_3O$) group when attached to the parent compound was found to be more active than inductively inducing group i.e. Methyl ($CH_3$), perhaps because of the ease of availability of electrons. While electron withdrawing group i.e. Chlorine (Cl) decreased the anti-oxidant activity. We further analyzed that structural isomerisation does not influence the anti-oxidant activity. The data presented here provides significant information for the synthesis of targeted compound with desired biochemical properties.

## Biography

Waseem Hassan completed his PhD from Universidade Federal De Santa Maria, RS, and Post Doctoral studies from Pontifícia Universidade Católica do Rio de Janeiro - PUC-Rio, Brazil. Dr. Hassan has considerable work experience in different pathological models (Vitro and Vivo) in relation to brain acidosis, free radical induced damage and protective effects of Novel anti-oxidants. His present interest includes the interaction of organochalcogens with biologically significant thiols under different pathophysiological conditions