

## **INFLUENCE OF PH ON THE REACTIVITY OF DIPHENYL DISELENIDE WITH THIOLS OF BIOLOGICAL AND PHARMACOLOGICAL SIGNIFICANCE**

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### **Abstract**

Organic compounds containing Se and Te have been considered potential antioxidant. During ischemia, the intracellular pH can fall to values as low as 6.0 and this can decrease the cell capacity to overcome the extreme pathological situation. The present project was designed to study the effect of pH on the reactivity of Diphenyl Diselenide with low molecular weight mono (cysteine, GSH) and dithiols (DTT, DMPS and DMSA). In the absence of Diphenyl Diselenide, the rate of thiol oxidation increased with pH. The reactivity of Diphenyl Diselenide with cysteine, GSH, DMSA and DMPS was not modified by pH (5.0-8.0). However, the reactivity with DTT was increased considerably at acidic pH values (mainly at pH 5 and 5.5). The antioxidant effects of organic selenium compounds depend on their ability to reduce peroxides using thiols as reducing equivalent. However, an excessive consumption of thiols without a concomitant degradation of peroxides can be toxic. Thus, additional studies will be necessary to determine the capacity of diphenyl diselenide to decompose peroxide at different pH values. The results of the present investigation indicated that the reactivity of low molecular weight thiols with diphenyl diselenide varies considerably depending on thiol compound used.

**Keywords:** Diphenyl Diselenide, Thiols, pH and Oxidation

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