

Dietary supplementation with selenomethylselenocysteine produces a differential proteomic response

Mahn, Andrea V.

Toledo, Hector M.

Ruz, Manuel

Organic forms of selenium offer important health benefits including cancer prevention. Selenium intake has been traditionally quantified as glutathioneperoxidase activity or selenium concentration in blood or tissues. However, these indexes do not reflect organic selenium intake. Effect of dietary supplementation of rats with selenomethylselenocysteine on the blood plasma proteome was investigated in order to detect protein abundance differences between experimental (supranutritional selenium supplementation) and control [minimum selenium dose and sodium selenate instead of selenomethylselenocysteine (SeMSeCys)] groups. Four experimental groups and six control groups consisting of six rats each were fed with base diet supplemented with SeMSeCys or sodium selenate in different concentrations for different periods of time. A proteomic approach, comprising two-dimensional gel electrophoresis and mass spectrometry, was used to assess protein abundance in blood plasma. Statistically signifi