Antioxidant effects of 1,4-dihydropyridine and niitroso aryl derivatives on the Fe+3/ascorbate-stimulated lipid peroxidation in rat brain slices

Díaz-Araya, G.

Godoy, L.

Naranjo, L.

Squella, A.

Letelier, M. E.

Núñez-Vergara, Luis J.

Lipid peroxidation in rat brain slices was induced by Fe+3/ascorbate.Brain lipid peroxidation, as measured by malondialdehyde formation, was inhibited by all the tested nitro aryl 1,4-dihydropyridine derivatives over a wide range of concentrations. The time-course antioxidant effects of the most representative agents were assessed. On the basis of both time-course and IC50 experiments the tentative order of antioxidant activity on rat brain slices could be: nicardipine>nisoldipine>(R,S/S,R)-furnidipine>(R,R/S,S)-furnidipine>nitrendipine>nimodipine>nifedipine.1,4-Dihydropyridine derivatives that lack of a nitro group in the molecule (isradipine, amlodipine) also inhibited lipid peroxidation in rat brain slices but at higher concentrations than that of nitro-substituted derivatives.All the tested nitroso aryl derivatives [2,6-dimethyl-4-(2-nitrosophenyl)-3,5-pyridinedicarboxylic acid dimethyl ester (NTP), nitrosotoluene, nitrosobenzene] were more potent inhibitors of lipid peroxidation t