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Effects of quercetin on heart nitric oxide metabolism in L-NAME treated rats

Valeria Calabró[a,b], María C. Litterio[a,b], César G. Fraga[a,b,c], Monica Galleano[a,b], Barbara Piotrkowski[a,b]

[a]Fisicoquímica, Facultad de Farmacia y Bioquímica, Universidad de Buenos Aires, Buenos Aires, Argentina.

[b]Instituto de Bioquímica y Medicina Molecular (IBIMOL), UBA-CONICET, Buenos Aires, Argentina

[c]Department of Nutrition, University of California, Davis, USA.

Corresponding author

Monica Galleano

Fisicoquímica

Facultad de Farmacia y Bioquímica

Universidad de Buenos Aires

Junín 956, 1113-Buenos Aires, Argentina

mgallean@ffyb.uba.ar

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Abstract

This study investigated the effects of a quercetin-supplemented diet on the biochemical changes installed in the heart of NO-deficient rats in terms of oxidants production and NO bioavailability determinants. Sprague-Dawley rats were subjected to N^{ω}-nitro-L-arginine methyl ester (L-NAME) treatment (360 mg/L L-NAME in the drinking water, 4 d) with or without supplementation with quercetin (4 g/kg diet). L-NAME administration led to increased blood pressure (BP) (30%), decreased nitric oxide synthase (NOS) activity (50%), and increases in NADPH oxidase (NOX)-dependent superoxide anion production (60%) and $p47^{phox}$ protein level (65%). The co-administration of quercetin prevented the increase in BP and the activation of NOX but did not modify the decrease in NOS activity caused by L-NAME. In addition, quercetin affected oxidative stress parameters as glutathione oxidation, and the activities of oxidant detoxifying