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Genistein and estradiol increase anti-inflammatory proteins in astrocytes in culture.

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Abstract

Estrogens and phytoestrogen such as genistein, have been demonstrated to promote anti-oxidant and anti-inflammatory properties after Aβ cell death induction. We previously published that genistein can induced anti-inflammatory proteins such as PPAR-γ and decrease IL-1 and TNF-α (proinflammatory proteins) producing a decrease in apoptosis in astrocytes in primary culture. To know the molecular mechanism of action, we look for protein expression of MAPkinases, such as ERK, JUN and p-38 and also we determine NFkB and AP-1 protein induction in astrocytes in primary culture. Our data indicate that Aβ compound can trigger signal transduction pathways linked to apoptosis, such as caspases, p53, and bcl-2 genes. This programmed-cell death may be considered actually one of the important targets in a preventive approach against Alzheimer's disease. How estrogens and phytoestrogens do regulate and control the intracellular signaling cascades considered as relevant targets in neurodegenerative preventive approach remains to be elucidated. The results suggest that in neural cells, blocking the cellular signal transduction might trigger the induction of apoptosis and also estrogens can regulate signaling cascades to stop conversion of a normal cell to an affected one by compounds in Alzheimer's disease.

Biography

Pablo Correa Bellido, MD was born in Valencia, Spain. He started studying Medicine at the Faculty of Medicine and Odontology of the University of Valencia. Since 2013 he forms part of a research team together with Dr Soraya Valles in the Physiology Department and collaborates in different research programs in relation with the genetic etiology of cancer. He is also a member of the Organizing Committee from the I Military Health Care and Catastrophes Master, created by MD PhD Frank Albert and which will be running on Spanish Medical Schools during 2014. Currently he overlaps his research activities with the creation of a biomedical project which will constitute the bases of a medical software platform co- financed by various official entities in the European Union.

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