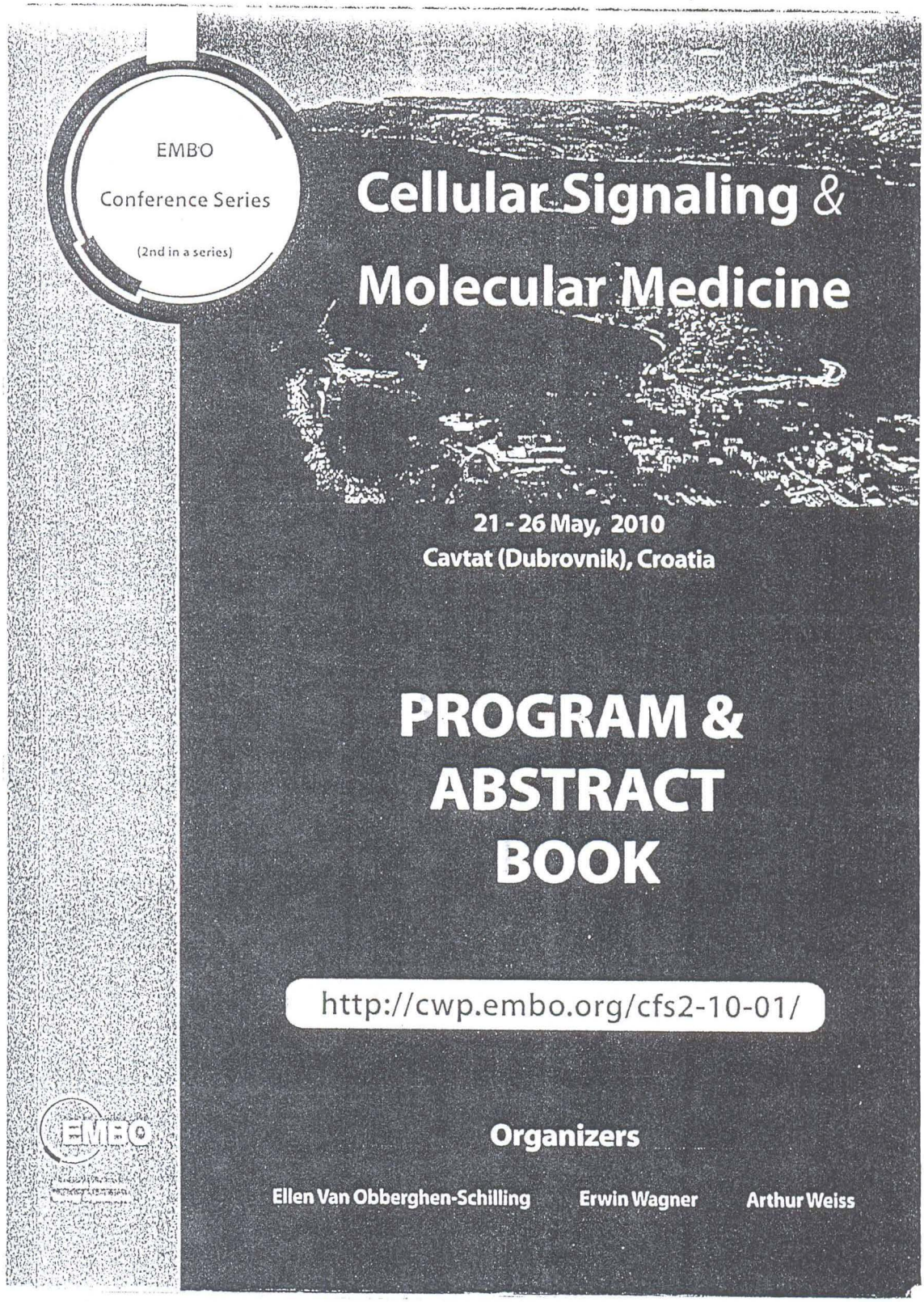

P31

The 2-styrylchromone structure is an effective scaffold for the development of new inhibitors of the NF-κB pathway

Gomes A. [1], *Freitas M.* [1], *Capela J.* [2], *Silva A.* [3], *Pinto D.* [3], *Santos C.* [4], *Cavaleiro J.* [3], *Fernandes E.* [1], *Lima J.* [1]

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2-Styrylchromones (2-SC) are chromone derivatives, vinylogues of flavones (2-phenylchromones). Some compounds from this group have demonstrated to possess biological effects with potential therapeutic applications such as antiallergic, antitumor, antiviral, antioxidant and anti-inflammatory activities. This last point deserves our special interest because we believe that 2-SC backbone is endowed with anti-inflammatory potential due to its similarities with flavonoids, the class of flavones in particular, which have shown interesting results in this field.

The activation of the transcription factor nuclear factor kappa B (NF-κB) is known to trigger a cascade of signalling events, namely the expression of many cytokines, enzymes, chemokines, and adhesion molecules, some of which being potential key targets for intervention in the treatment of inflammatory conditions. Indeed, accepted anti-inflammatory therapeutic options such as glucocorticoids, cyclosporine, tacrolimus, non-steroidal anti-inflammatory drugs (NSAIDs), and sulfasalazine were shown to modulate the NF-κB pathway by several mechanisms.

Thus, the aim of the present work was to study the influence of a group of 2-SC in the activation of the NF-κB pathway in THP-1 cells, a human monocytic cell line. First, we studied the ability of the compounds to inhibit LPS-induced NF-κB activation. Subsequently, we analysed

different stages of the signalling pathway in order to understand the mechanism by which the effective compounds acted. Finally we evaluated the capacity of the most potent NF-κB inhibitors to inhibit the production of pro-inflammatory cytokines.
In this study, new inhibitors of the NF-κB pathway were found, being promising candidates for alternative anti-inflammatory drugs.

Presented by: **Gomes, Ana**