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LETTER TO THE EDITOR

Does resveratrol inhibit NF- κ B activity?

Dear Editor,

With great interest I have read the paper by Ren and co-workers (Ren et al., 2013) entitled “Resveratrol inhibits NF- κ B signaling through suppression of p65 and I κ B kinase activities” which has recently been published in your journal. In essence, the authors of the study report a decrease of NF- κ B transcriptional activity in the presence of resveratrol. The authors show that this is not associated with diminished DNA binding of the transcription factor and also not caused by altered protein amounts or impaired nuclear translocation of NF- κ B. The conclusion that NF- κ B activity is modulated by resveratrol is based on luciferase reporter assay results which have been generated using a plasmid encoding firefly luciferase under the control of a NF- κ B-responsive promoter. It is well known that resveratrol is a potent inhibitor of the firefly luciferase enzyme (Bakhtiarova et al. 2006; Braeuning and Vetter, 2012). The authors of the latter publications have demonstrated that the IC₅₀ of resveratrol for the inhibition of firefly luciferase is about 1–2 μ M. In their study, Ren et al. used 10–40 μ g/ml resveratrol, corresponding to molar concentrations of approximately 44–175 μ M. Therefore, the observed decrease in NF- κ B-dependent luciferase reporter activities is most likely caused by a direct inhibition of the firefly luciferase enzyme by resveratrol and not by diminished luciferase transcription due to altered transcriptional activity of NF- κ B. Unfortunately, Ren et al. draw their conclusion solely on the luciferase assay and do not present additional lines of evidence to support their hypothesis, for example data on the mRNA expression of endogenous NF- κ B target genes. In the present form, the study by Ren et al. is not suited to prove an influence of resveratrol on NF- κ B transcriptional activity.

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