

中文題目：以紫外線活化H I V - 1 基因表達之生物定量：甘草酸效應
英文題目：A quantitative bioassay for HIV-1 gene expression based on UV
activation: effect of glycyrrhizic acid

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Background and Purpose: Previous reports have shown that HIV-LTR cat constructs stably transfected in HeLa cells are inducible after exposure to UV light. Based on this system, we exploited for the routine screening of the compounds that interfere with HIV-1 gene expression

Methods and Results: We have optimized this system for studying the effect of drugs on HIV-1 gene expression. The maximum UV response was observed in quiescent stationary cells stimulated with fresh medium for 3 h. Glycyrrhizic acid suppressed UV-induced HIV gene expression in a concentration-dependent manner. The inhibitory effect was strongest when GL was added immediately after UV exposure; it was still evident when GL was added at 5 h, it was completely lost at 10 h, after UV exposure. The inhibitory effect was even more pronounced if the cells were pretreated with sub-effective dose (0.0012 mM) of GL prior to UV exposure. The IC₅₀ values with and without pretreatment were 0.04 and 0.38 mM, respectively. Cell proliferation and viability were not affected by GL at doses as high as 2.4 mM. The inhibitory effect of GL on UV-induced CAT activity correlated with the complete inhibition of binding activities of NF- κ B p65, NF- κ B p50, c-Fos, and c-Rel.

Conclusions: Thus, the UV-based bioassay as proposed here can be exploited for the routine screening of the compounds that interfere with HIV-1 gene expression.