PHYTOCEE®

Interleukin-2 (IL-2) Production Regulation Potential of Ingredient of PHYTOCEE®: *Ocimum sanctum*

OBJECTIVE

To investigate the regulatory effect of aqueous extract of leaves of *Ocimum sanctum* on IL-2 cytokine production.

MATERIALS AND METHODS

Wistar rats (100-120 mg) were used for in-vivo study. The rats were randomly divided into two groups with 10 rats in each group and administered with aqueous leaves extract of *Ocimum sanctum* at 250 mg/kg for 20 days in experimental group. While, in control group equal volume of water was given as placebo. IL-2 cytokine production in splenocytes was quantified by sandwich ELISA as per standard protocol. Furthermore, the level of IL-2 mRNA in the spleen cells was estimated using RT-PCR analysis after 24 hrs culture in the presence of 5 µg/mL Concanavalin-A (ConA). For in-vitro study aqueous *Ocimum sanctum* leaves extract in different concentrations (25-500 µg/mL) was added into culture plates containing ConA stimulated splenocytes.

RESULTS

Groups	Concentration of IL–2 (pg/mL, mean±SEM)	change in IL–2 concentration(%)
ConA control	569.22±120.97	––
ConA+ *O.sanctum* (25 µg/mL)	572.93±122.01	0.65
ConA+ *O.sanctum* (50 µg/mL)	588.64±126.53*	3.41*
ConA+ *O.sanctum* (125 µg/mL)	619.42±129.56**	8.8**
ConA+ *O.sanctum* (250 µg/mL)	655.25±135.54**	15.1**
ConA+ *O.sanctum* (500 µg/mL)	632.78±132.04**	11.2**

* $P<0.05$, ** $P<0.01$.

Table 1. In vitro effect of Ocimum sanctum aqueous leaves extract on IL-2 production from splenocytes

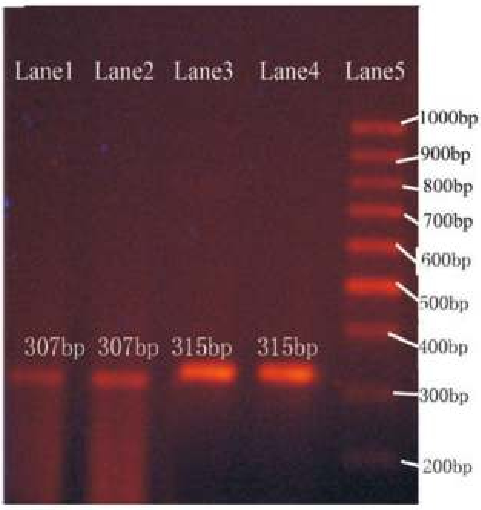

Figure: m-RNA expression of IL-2 cytokine and βactin (control protein) in control and Ocimum sanctum treated rats' splenocytes by RT-PCR

Lane1: IL-2 (control); Lane2: IL-2 (Ocimum sanctum); Lane3: β-actin (control); Lane4: β-actin (Ocimum sanctum); ane5: 100 bp ladder.

CONCLUSIONS

The study results indicated that the rats treated with *Ocimum sanctum* leaves extract had significantly enhanced (p<0.001) ability of spleen cells to secrete IL-2 in both invivo and *in-vitro*.

OUTCOME

Hence, *Ocimum sanctum* may have immunostimulatory effect as evidenced by enhancement in IL-2 production.

Reference:

Goel A, Singh DK, Kumar S *et al*. Immunomodulating property of *Ocimum sanctum* by regulating the IL-2 production and its mRNA expression using rat's splenocytes. Asian Pac. J. Trop. Med. 2010;3(1):8-12.