

## THE MECHANISM OF CYCLOSPORIN-A INDUCED ANTI-INFLAMMATION

**NIMET IZGÜT\*,  
GÜLSEN ÖNER\***

A paper of Kahan appeared in *N. Eng. J. Med.* (32: 1725-38, 1989) reported that an immunosuppressive agent, cyclosporin-A acting selectively on lymphocytes inhibits the transcription of one gene family whose products encode multiple homologous polypeptides secretion from the accessory cells of immunosystem (1). This cyclosporin induced inhibition of protein synthesis is well accepted by many authors (2-4) in explaining its selective immunosuppression. However in our *in vitro* studies new protein synthesis was observed from the phagocytic cells incubated for 16 hrs with cyclosporin-A at 37°C.

One of this new protein with 65 kDa of molecular weight displaying an anti-phospholipase A<sub>2</sub> activity inhibited the release of arachidonic acid from cell membranes. Co-administration of corticosteroids did not prevent the production of this proteins.

Despite its lipocortine like activity measured by HPLC this protein showed no stimulatory effects on T cell proliferation as well as phagocytic activity of macrophages.

Our finding shows that cyclosporin acting like a steroid hormone stimulates cellular protein production rather than inhibition. The anti-inflammatory action of cyclosporin-A as well as its side effects may be attributed to the products of cyclosporin induced protein synthesis during immunosuppressive therapy.

### REFERENCES

1. Kahan BD : *Cyclosporin. N Eng J Med*, 32:1725-1738, 1989.
2. Citterio F, Kahan BD : *The inhibitory effect of cyclosporin on the nuclear proliferative response to a variety of T cell activators. Transplantation*, 47:334-338, 1989.
3. Kronke M, Leonard WJ, Depper JM : *Cyclosporin-A inhibits T cell growth factor gene expression at the level of mRNA transcription. Proc Natl Acad Sci*, 81:5214-5218, USA, 1984.
4. Szamel M, Berger P, Resch K : *Inhibition of T lymphocyte activation by cyclosporin A : Interference with the early activation of plasma membrane phospholipid metabolism. J Immunol*, 136:264-269, 1986.

Correspondence  
Nimet İzgüt  
Akdeniz Üniversitesi,  
Tıp Fakültesi,  
Psikoloji Bölümü,  
Antalya, TÜRKİYE.

---

\* Department of Physiology, Faculty of Medicine, Akdeniz University, Antalya, Türkiye.