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Title: Serum from patients with sarcoidosis promotes the proliferation of epithelial cell lines in vitro

Dr. Iris 1883 Zampira iriszamp_13@yahoo.gr¹, Dr. Athena 1884 Gogali athenagogali@yahoo.com MD², Dr. Petros 1885 Oikonomidis piconomidis@igu.forthnet.gr MD², Dr. Evaggelia 1886 Ntzani entzani@cc.uoi.gr MD³, Dr. Agellos 1887 Evagelou aevaggel@cc.uoi.gr MD⁴, Ms. Fanny 1888 Tachmatzoglou fannytach@yahoo.com⁵, Maria 1889 Matthaiou eprevezi@uoi.gr MD², Prof. Panagiotis 1890 Canavaros pkanavar@cc.uoi.gr MD¹, Prof. Stavros 1891 Constantopoulos eprevezi@uoi.gr MD² and Prof. Yotanna 1892 Dalavanga ydalavan@cc.uoi.gr MD¹. ¹ Department of Anatomy-History-Embryology, University of Ioannina, Medical School, Ioannina, Greece, 45500 ; ² Department of Pneumonology, University of Ioannina, Medical School, Ioannina, Greece, 45500 ; ³ Department of Hygiene and Epidemiology, University of Ioannina, Medical School, Ioannina, Greece, 45500 ; ⁴ Department of Physiology, University of Ioannina, Medical School, Ioannina, Greece, 45500 and ⁵ Neurosurgical Institute, University of Ioannina, Medical School, Ioannina, Greece, 45500 .

Body: INTRODUCTION: Several epidemiological studies have linked sarcoidosis with neoplasia, but this is questioned by many investigators. The present study is an experimental approach to the subject. Our hypothesis was that if sarcoidosis can influence one of the two basic steps of malignancy: cancerous transformation of the cells or out of control cell growth, this could be regarded as an indirect sign of relation to neoplasia. MATERIALS AND METHODS: A549 and SKMES cell lines were treated with serum from patients with sarcoidosis, COPD and healthy individuals. Their effect on cell proliferation was examined. The influence of cytokines and EGFR on cell proliferation was also investigated. RESULTS: When serum from patients with sarcoidosis was added to the culture medium of both epithelial cell lines, there was a statistically significant increase of cell proliferation ($p < 0.05$). By contrast, serum from normal controls or patients with COPD had no impact. This positive influence of serum from patients with sarcoidosis was annulated by EGFR inhibitor. CONCLUSION: Out of control cell growth is a basic step towards malignancy. The increase of epithelial cell proliferation in the presence of sarcoidosis serum, documented in the present study, could represent a link of this disease with neoplasia, under favorable circumstances.