Turkish Journal of Medical Sciences

Turkish Journal

of

Medical Sciences

Development of ELISA Systems for Measurement of Human Tumor Necrosis Factor-Alpha (TNF-α)

Ayşegül YÜCEL, Cemalettin AYBAY
Department of Immunology, Faculty of Medicine, Gazi University, Ankara - Turkey

Abstract: The aim of this study was to develop a human tumor necrosis factor alpha (hTNF-α) ELISA system because specific and sensitive measurement of low levels of circulating TNF-a is very important for enlightening the immunopathologial mechanisms associated with TNF-α. Monoclonal antibodies 6A4c and 8A6 were produced against hTNF-α and were used as the capture antibody and the tracer antibody respectively for the first hTNF-α ELISA system (6A4c/biotin-8A6). Murine polyclonal IgG was used as the tracer antibody in the second hTNF-α ELISA system (6A4c/biotin-polyclonal IgG). Both systems could detect both recombinant hTNF-α and native hTNF-α. The detection limits defined as minimal concentration of hTNF-α were less than 4 pg/ml for the first and less than 12 pg/ml for the second ELISA systems. 6A4c/biotin-8A6 system resulted in some non-specific reactions to some extent with human sera; however, 6A4c/biotin-polyclonal IgG system produced acceptable background levels with human sera. A prominent inhibitory effect of TNF receptors-I and -II did not occur in any of the ELISA systems at physiological concentrations. Two different types of ELISA systems with high sensitivity and specificity were developed to measure hTNF-α level both in human serum and cell culture supernatant.

Key Words: TNF-α, ELISA

Keywords
Authors

medsci@tubitak.gov.tr

Scientific Journals Home Page

Turk J Med Sci 2005; **35**(6): 385-393.
Full text: pdf
Other articles published in the same issue: Turk J Med Sci,vol.35,iss.6.