

Adattamento del TriTEST™ per la raccolta di campioni ematici in studi multicentrici afferenti ad uno stesso laboratorio

T. MAMMONE, S. BIRINDELLI, D. GUARNERI^{***}, A. MESSA, N. SCHIAVULLI^{**}, A. CARRUS^{**}, A. COLOMBI^{***}, L. SOLEO^{**}, C. COLOSIO, M. MARONI

International Centre for Pesticide Safety, Busto Garolfo (Milano)

* Dipartimento di Medicina Interna e Medicina Pubblica, Sezione di Medicina del Lavoro, Università di Bari

** Dipartimento di Medicina del Lavoro, Università degli Studi di Milano

*** Istituti Clinici di Perfezionamento, Milano

KEY WORDS

Immunotoxicology; lymphocyte subpopulations; T-helper; T-suppressor citotossic; natural killer; flow cytometer

SUMMARY

«Modified TriTEST™ method for blood samples collected in multicenter studies». Background: Immunotoxicological studies in humans are usually carried out via the determination of some selected immune parameters in subjects occupationally and/or environmentally exposed to immunotoxic substance. One of the most often measured parameters is the determination of lymphocyte subsets, which needs to be carried out in a very short time (a few hours) after blood collection. This is the major problem limiting the determination of lymphocyte subpopulations in field studies, where samples are usually collected directly at the workplace, and very often at the end of the workshift. Unfortunately, these collection modalities significantly prolong the time between collection and analysis. The problem is more evident in multicentric studies, where a further problem is represented by the time needed to send samples to the laboratory. **Objective:** Since an immune evaluation was planned, including the determination of lymphocyte subpopulations CD4 (T-helper), CD8 (T-suppressor cytotoxic) and CD16/CD56 (natural killer) in the project "Assessing health effects in man from exposure to low doses of inorganic mercury in environmental and occupational settings", a method was developed for performing cytofluorimetric analysis in "field studies". **Methods:** The method is based on commercially-available kits, and involves in loco treatment. Whole blood is labeled with monoclonal antibodies, and fixed samples immediately after collection. After the treatment, the samples are ready for flow cytometric analysis, which may be performed after a two-day period from sample collection. **Results and Conclusion:** The method described is adequate for immunotoxicity testing in field studies because it prolongs the maximum latency time from collection and cytofluorimetric analysis up to 48 hours. A second interesting characteristic of the method is the possibility of using whole blood, without any need of either complex manipulations or particular equipment.

Pervenuto il 6.2.2002 - Accettato il 8.4.2002

Corrispondenza: T. Mammone, via Magenta 25, 20100 Busto Garolfo (Mi)

Tel. 0331/406627 - Fax 0331/568023 - e-mail: teresa.mammone@icps.it