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# United States Patent [19]

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[54] **PROCESS FOR IN VITRO ANALYSIS OF TOXIC AND ALLERGENIC SUBSTANCES**

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[58] **Field of Search** ..... 435/7.1, 7.2, 7.21, 435/325, 326, 372, 372.3, 373, 375.35, 375; 530/351, 35

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[57] **ABSTRACT**

The invention concerns a process for in vitro evaluation of a potentially allergenic or tissue irritating substances, characterized in that blood cells are cultivated in the presence of serial dilutions of the substance whereby the highest concentration of the substance being non toxic to the cells is serial diluted, cell proliferation is measured and the presence of cytokines is measured whereby: the presence of one or more of the alarm cytokines of class 0 only is an indication of tissue damage and chemical toxic effects; the presence of one or more alarm cytokines of class 0 and possibly one or more cytokines of class IV type but not neopterin is an indication of delayed type hypersensitivity such as cellular immunity, delayed allergy and contact eczema; and the presence of one or more alarm cytokines of class 0 and at least neopterin and possibly one or more cytokines of class I is an indication of immediate type hypersensitivity such as asthma, hay fever, urticaria and rhinitis. The invention also concerns use of neopterin and IL-8 as analytic substances for distinguishing between the immune reactions type I and IV and a kit for analysis.

**8 Claims, No Drawings**