

**16** **Prevalence of antibodies against p53 protein in various cancers**

**Angelopoulou, K., Diamandis, E.P., Kellen, J., Bunting, P. and Sutherland, D.**

Department of Clinical Biochemistry, The Toronto Hospital and Sunnybrook Medical Centre, Toronto, Ontario, Canada

Patients with cancer sometimes develop antibodies against mutant proteins. We have examined whether cancer patients develop antibodies against the p53 protein, the gene of which is frequently mutated in diverse cancers. For antibody detection we used a recently developed assay which involves solid-phase immobilization of a monoclonal anti-p53 antibody, p53 antigen derived from a cancer cell line, serum sample and an alkaline phosphatase-labeled goat antihuman antibody. The prevalence of anti-p53 antibodies in human serum per group of cancer patients was as follows: 6/77 (7.8%) lung; 16/292 (5.5%) breast; 12/86 (14.0%) ovarian; 2/107 (1.9%) leukemia; 6/165 (3.6%) multiple myeloma; 7/115 (6.1%) lymphoma; 12/82 (14.6%) colon; 0/11 (0%) Kaposi's sarcoma; 0/4 (0%) sticular; 2/148 (1.4%) hepatoma; 0/58 (0%) melanoma; 1/65 (10.8%) prostate; 3/46 (6.5%) pancreatic. Antibody titers varied dramatically from 2 to over 20. Overall positivity for the 1256 samples tested was 5.8%. Only one of 143 sera from normal blood donors (0.7%) gave a positive response, with a titer of 1.8. Our data are in fair agreement with published prevalence for antibody development in breast (7-9%) and lung (13%) cancer, and lymphoma (21%). We here report for the first time the highest prevalence of anti-p53 antibodies in ovarian and colon cancers. We are currently investigating whether the presence of such antibodies constitute a new diagnostic or prognostic test.