In conclusion, serum TPA values obtained in order to evaluate tissue polypeptide antigen (TPA) as a tumor marker, serum TPA concentrations were measured using RIA systems in 815 patients with various diseases of the digestive system.

Serum TPA values obtained from 83 normal subjects were 52.3 ± 24.4 U/L (mean ± standard deviation) and cut off level was set at 100 U/L. Serum TPA was positive in 53% (21/40) for gastric cancer, 53% (16/30) for colorectal cancer, 64% (7/11) for esophageal cancer, 88% (38/43) for hematopoietic malignancy, 80% (4/5) for gallbladder cancer, 67% (4/6) for bile duct cancer and 83% (35/42) for pancreatic cancer, respectively. In patients with some benign diseases such as gastric ulcer, acute hepatitis and liver cirrhosis, serum TPA concentrations were elevated. Preoperative serum TPA levels were closely related to operative findings in gastric and colorectal cancers and serum TPA concentrations declined markedly after surgical treatment in all but 13 out of 13 patients with pancreatic cancer. There was no correlation between serum TPA and CEA values.

In conclusion, serum TPA determination by using RIA would be useful in patients with malignancy of the digestive system.

Tissue polypeptide antigen (TPA) is regarded as a tumor marker indicating proliferative as well as existent of the malignant neoplasms. We had the opportunity to evaluate TPA RIA KIT used double antibody method fundamentally and clinically. About the basic examinations, the measurable range of serum TPA value was 30-30000 U/L. Dilution test and recovery test showed satisfactory result. Intra-assay variance was 6.3% and Interassay variance was 12.0%. Clinically, the mean value of serum TPA of normal subjects (19 males and 15 females) was 74.9 ± 41.4 U/L, and no difference was found between male and female. In 63 cases of malignant neoplasms, the serum TPA values of 36 cases (57%) were high beyond normal range. Particularly high TPA levels were found in hepatic cell carcinoma, breast cancer and colorectal carcinoma. Only 14% of the patients with benign diseases have high serum TPA values beyond normal range. But in the patients with liver cirrhosis, the TPA values were especially high. TPA RIA KIT was proved to be useful in the measurement of serum TPA values. Serum TPA was with malignant neoplasms were significantly higher than those in normal persons.

Serum concentrations of tissue polypeptide antigen were measured using RIA kits provided through Santec Inc.-Dichi RI research institute. The characteristics of the kit and clinical usefulness were evaluated.

Intra- and interassay variations assessed with 4 control sera ranged from 2.8 to 13.7% and from 3.1 to 10.3% in C.V., respectively. The mean recovery of added TPA was 115.2%. Linear correlation was observed in dilution tests. No significant cross reaction was observed with CEA, AFP, α2-microglobulin and PAP.

Serum TPA levels in 24 healthy volunteers were 54.3 ± 24.0 U/L (M ± 1 S.D.). In patients TPA over 100 U/L was regarded as positive. Serum TPA concentrations were measured in 241 patients with various cancers and in 122 patients with benign diseases. Positive ratio of TPA in cancer patients was 57% in average including hepatoma (86%), biliary tract ca (75%), lung ca (67%), pancreas ca (58%), colorectum ca (58) and gastric ca (46%). False positive ratio in benign diseases was 34% with the highest ratio in liver diseases (76%). Clinical usefulness of TPA when combined with CEA and ferritin was discussed.