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A blood tumor marker combination assay produces high sensitivity and specificity for cancer according to the natural history

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Diagnosis using a specific tumor marker is difficult because the sensitivity of this detection method is under 20%. Here in, a Tumor Marker Combination Assay (TMCA), combining growth-related tumor marker and associated tumor marker was employed. This double-blind tumor marker combination assay showed 87.5% sensitivity as the results, but a low specificity, ranging from 30 to 76%. To overcome this low specificity, we exploited complex markers, a multivariate analysis and serum fractionation by biochemical biopsy. Thus, in the present study, a combination of new techniques was used to re-evaluate these serum samples. Three serum panels, containing 90, 120 and 97 samples were obtained from the Mayo Clinic. The final results showed 80-90% sensitivity, 84-85% specificity and 83-88% accuracy. We demonstrated a notable tumor marker combination assay with high accuracy. This TMCA should be applicable for primary cancer detection and recurrence prevention.

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