IDENTIFICATION OF COLORECTAL CANCER BIOMARKERS FROM **MALDI-TOF** DATA

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With the advent of clinical proteomics, a large amount of complex mass spectra are being generated. It is often of interest to find patterns hidden within such data that can be used to distinguish different sets of spectra. The main objective is to find new plasma protein biomarkers for diagnosis and prognosis of colorectal cancer.

Plasma samples from 405 patients diagnosed of colorectal cancer during 1996-98 and 344 controls recruited simultaneously at the Bellvitge's hospital, Barcelona, are available frozen at -80ºC together with detailed epidemiological, clinical and pathological information, including more than 5 years active follow-up.

Proteomic spectra was measured in these plasma with matrix-assisted laser desorption ionization time-of-flight (MALDI-TOF) mass spectrometry, after purification with solid-phase extraction disks.

Bioinformatics and biostatistical tools based on pattern classification techniques have been used to identify the profile that best predictive accuracy shows for diagnosis (all patients compared to controls) and for prognosis (time-to-event analysis for cases without disseminated disease).

The profiles identified will be validated internally using resampling statistical procedures and in an external sample of 200 new cases.

To correctly estimate specificity, a sample of 200 healthy individuals that participated in a pilot population screening study with a negative endoscopic examination will be used.