

Project proposal

Objective: To validate biomarkers for cancer screening and early diagnosis among urban population in China, with focus on the top cancers in urban China including lung cancer, breast cancer, colorectal cancer, upper digestive tract cancers (esophageal cancer and stomach cancer) and liver cancer.

Resource available: In 2012, the Chinese government initiated a national cancer screening program in urban China (Cans PUC). Since then, this program has extended to 16 provinces. In each province, the identified high-risk populations are screened for lung cancer with low-dose spiral CT (LDCT), breast cancer with ultrasound and mammography, colorectal cancer with colonoscopy plus biopsy-directed pathology, upper digestive tract cancers (esophageal cancer and stomach cancer) with endoscopy plus biopsy-directed pathology, and liver cancer with ultrasound.

the potential cancer screening biomarkers in urban China included six provinces: Heilongjiang (Northeast), Hebei (Middle), Hunan (South-middle), Zhejiang (Southeast), Gansu (West) and Chongqing (Southwest). In each province, the following high-risk populations were screened according to the protocol of Cans PUC and their blood samples (5 ml anticoagulant blood and 5 ml non-anticoagulant blood from each subject) were collected from the following high risk populations: 3000 for lung cancer, 2000 for breast cancer, 2000 for liver cancer, 1500 for colorectal cancer, and 1500 for upper digestive tract cancer. All the recruited subjects will eventually be followed-up yearly when blood samples will be collected, centralized in a biobank center and further diagnosis and treatment recorded. The potential biomarkers for the above listed cancers will be validated on both baseline samples and follow-up samples. It is anticipated that the follow-up will take at least 3 years.

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