

Blood 'fingerprints' for cancer

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Serum microRNAs (miRNAs) can serve as biomarkers for the detection of diseases including cancer and diabetes, according to research published online this week in *Cell Research*. The findings pave the way for a revolutionary non-invasive diagnostic tool.

miRNAs are a class of naturally occurring small non-coding RNAs that have been linked with cancer development. Recent studies reporting individual miRNAs as diagnostic biomarkers of specific cancers were unable to rule out the possibility that these miRNAs appeared as a result of contamination.

Chen-Yu Zhang and colleagues are the first to comprehensively characterize entire blood miRNA profiles of healthy subjects and patients with lung cancer, colorectal cancer and diabetes, ruling out contamination. They propose that the specific serum miRNA expression profiles they identified constitute 'fingerprints' for cancer and disease.

Although tumour markers greatly improve diagnosis, current diagnostic techniques are prohibitively invasive and therefore have limited clinical application. The new approach is non-invasive and has the potential to transform the clinical management of various cancers and diseases through improving disease diagnosis, cancer classification, prognosis estimation, prediction of therapeutic efficacy, maintenance of surveillance following surgery, and the ability to forecast disease recurrence. The new technique will also be useful to pharmacological companies in identifying population subgroups who are responsive to drugs that have failed in phase III clinical trials.

Source: Nanjing University School of Life Sciences

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