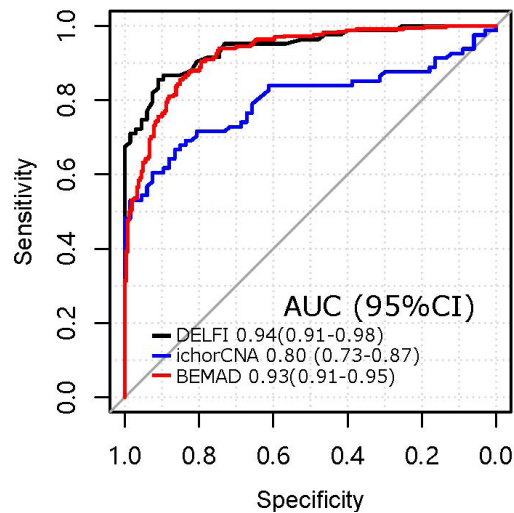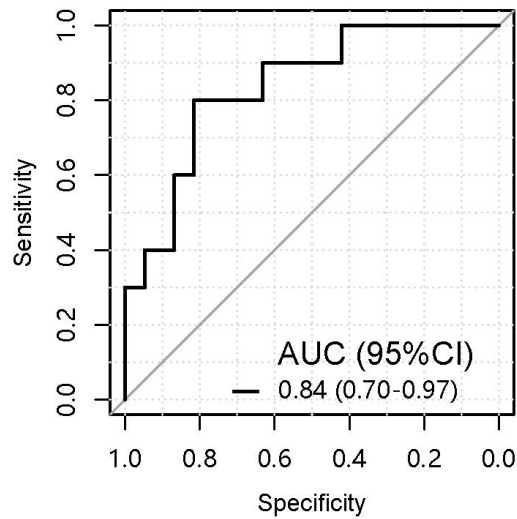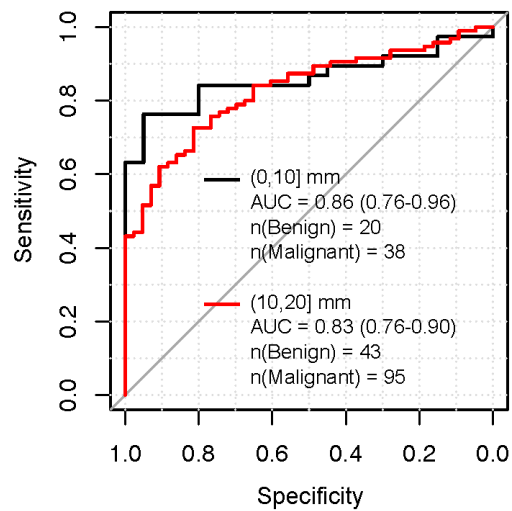**Figure S1** Workflow of this study. CT, computed tomography; WGS, whole-genome sequencing; LD, low-depth.

Figure S2 Comparison between the other two methods (ichorCNA and DELFI) to our method using the LUCAS cohort. AUC, area under the receiver operating characteristic curve; CI, confidence interval; DELFI, DNA evaluation of fragments for early interception; CNA, copy number alteration; BEMAD, benign and malignant diagnostic; LUCAS, Longitudinal Urban Cohort Ageing Study.

Figure S3 An external independent dataset from The CUHK including 38 healthy control and 10 lung cancer patients for validation. AUC, area under the receiver operating characteristic curve; CI, confidence interval; CUHK, Chinese University of Hong Kong.

Figure S4 Performance of the BEMAD model to diagnose pulmonary nodules of 6–20 mm. AUC, area under the receiver operating characteristic curve; BEMAD, benign and malignant diagnostic.