



**Supplementary Figure S1.** Hierarchical clustering analysis of serum metabolites from the RA patients with ILD or without CLD. Each column and raw indicate a sample from an RA patient and a metabolite, respectively. The normalized levels of the metabolites were listed in Supplementary Table S2. RA: rheumatoid arthritis, ILD: interstitial lung disease, CLD: chronic lung disease, ILD(+)RA: RA patients with ILD, CLD(-)RA: RA patients without CLD.