用于癌症病人初级临床诊断的化学计量学研究

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摘要   用感应耦合等离子体原子发射光谱及石墨炉原子吸收测定了正常人及癌症病人头发与血清样品中13个元素。将所得数据送入计算机,
分别用化学计量学中PLS及Gram-
Schmidt多元分析方法处理了血清与头发样本。在两种情况下均得到了病人与正常人分类极其清晰的二维判别图。头发样本的判别失误率低于血清样本。头发样品取样、
存储及运输容易, 也宜于进行光谱分析, 因此可将头发用作癌症初级临床诊断中的分析样品。

关键词   诊断   原子吸收分光光度法   癌   头发   石墨化炉   血清   电感耦合等离子体   原子发射光谱   化学计量学

分类号   0657

Chemometrics study on preliminary clinical diagnostics for cancer patients

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Abstract Multielements in normal people's and cancer patient's hair and serum samples were simultaneously determine with inductively coupled plasma-at. emission spectrometry (ICP-AES). The trace amount of Se in hair and serum was determine with a graphite furnace atomic absorption spectrometer (GF-AAS). The experimental results obtained were then studied with the chemometric technique. Both partial least squares (PLS) and Gram-Schmid methods were applied to the classification of normal people and cancer patients. The technique developed is considered to be used as a preliminary clin. diagnostic method for cancer patients. Hair samples are preferred as the analyte due to their easy sampling, treatment, storage as well as transportation.

Key words   DIAGNOSIS   ATOMIC ABSORPTION SPECTROPHOTOMETRY   CARCINOMA   HUMAN HAIR   GRAPHITIZING FURNACES   SERUM   ICP   ATOMIC EMISSION SPECTROMETRY   STOICHIOMETRY

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