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Determination of Major and Minor Elements in Qixue Shuangbu Tincture by ICP-AES with Microwave Digestion

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***SUMMARY*. Inductively coupled plasma atomic emission spectrometry (ICP-AES) was used for the determination of major and minor elements present in Qixue Shuangbu Tincture (QXSBT), the samples were digested with concentrated nitric acid and hydrogen peroxide in a microwave system. The decreasing sequence of the mean metal levels in QXSBT is as follows: K > Na> Mg > Ca > Fe> Al > B > Pb > Ni > V > Ti > Be > Se > Li > Cu > Hg > Sn > Sr > Zn> Cr> Mn. Principal component analysis and cluster analysis were applied to the data matrix to evaluate analytical results. It was found that six principal components account for 94.01% of the total variance in the data. ICP-AES combined with the microwave digestion technology is accurate and precise determination method in determining major and minor elements in QXSBT.**

RESUMEN. La espectrometría de emisión atómica de plasma acoplado inductivamente (ICP-AES) se utilizó para la determinación de elementos mayores y menores presentes en tintura de Qixue Shuangbu (QXSBT). Las muestras se digirieron con ácido nítrico concentrado y peróxido de hidrógeno en un horno de microondas. La secuencia de la disminución de los niveles medios de metal en QXSBT es el siguiente: K> Na> Mg> Ca> Fe> Al> B> Pb> Ni> V> Ti> Sea> SE> Li> Cu> Hg> Sn> Sr> Zn> Cr> Mn. El análisis de los componentes principales y de conglomerados se aplicaron a la matriz de datos para evaluar los resultados analíticos. Se encontró que seis componentes principales representan el 94,01% de la varianza total. ICP-AES combinado con la tecnología de digestión por microondas es el método de determinación exacta y precisa en la determinación de los elementos mayores y menores en QXSBT.

KEY WORDS: ICP-AES, Major and minor elements, Microwave assisted digestion, Multivariate analysis, Qixue Shuangbu tincture.

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