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(54) Title: BUFFER FOR ANALYZING SMALL INORGANIC CATIONS BY CAPILLARY ELECTROPHORESIS

(57) Abstract

Disclosed herein is electrophoresis buffer and a buffer kit useful in the analysis of small cations in samples containing simple or complex mixture of ions and/or neutral organic compounds in a short time and to scan unknown samples for the small cations by capillary electrophoresis with indirect optical detection. An embodiment of the disclosed CE buffer comprises complexing agents and chromophore co–ions. One of the complexing agents is a multidentate one of donor atoms of oxygen and nitrogen, particularly nitrilotriacetic acid (NTA). Other complexing agents, if any, can be crown ethers, for example, 18–crown–6. The chromophore co–ions can be produced by introducing nitrogen–containing heterocyclic compounds, in particular pyridine, to the electrophoresis buffer. The desired pH of the buffer kit is between about 2 and 4. In a particularly preferred embodiment, the buffer kit comprises a UV chromophore co–ion of nitrogen–containing heterocyclic compound of pyridine in a range of about 1 mM to about 40 mM, a multidentate complexing agent of donor atoms of oxygen and nitrogen of nitrilotriacetic acid (NTA) in a range of about 0.1 mM to about 5mM and a crown ether of 18–crown–6 in a range of about 0.1 mM to about 50 mM. The desired pH is about 3. Indirect UV detection is made at 254 nm.