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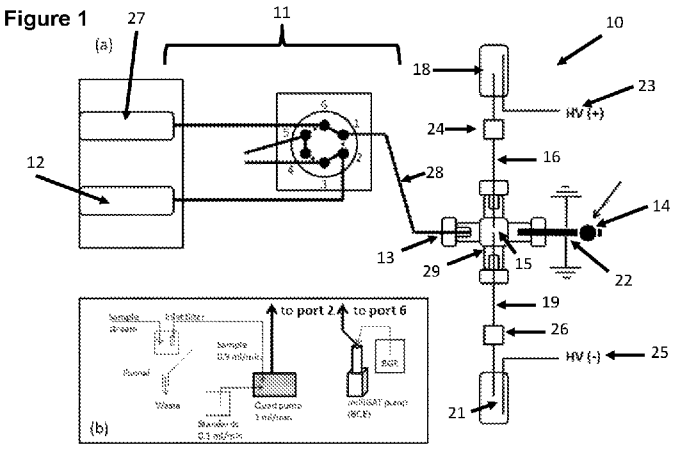
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(54) Title: ELECTROPHORETIC SEPARATION OF ANALYTES

Figure 1



(57) Abstract: Disclosed are methods and systems for the simultaneous separation and detection of analytes such as anions and cations in a sample using electrophoresis, the method comprising injecting the sample into an electrophoresis system comprising two separation channels through a single sample injection port which is in fluid communication with the two separation channels, separating analytes such as the cations in a first of the two separation channels and simultaneously separation analytes such as the anions in a second of the two separation channels, and detecting the analytes separated in each of the separation channels. Methods and systems are also disclosed that allow the separation and detection of analytes in a sample using electrophoresis in the presence of two or more different electrolytes concurrently, the method comprising providing an electrophoresis system comprising a single sample injection port in fluid communication with two or more separation channels, priming the separation channels with different background electrolytes, injecting the sample through the single sample injection port and into each of the separation channels, applying a voltage potential across each of the separation channels to effect a separation of the analytes in the respective channels during the flow of a different background electrolyte composition through each of the separation channels, and detecting the presence of the analytes in the sample.

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