Table 1. Software protocol for assay using micro-Affinity Chromatography

'1) LOAD BEADS
Syringe Pump Valve In
Syringe Pump Flowrate (µL/sec) 200
Syringe Pump Aspirate (µL) 400
Syringe Pump Delay Until Done
Syringe Pump Valve Out
Valve beads
Syringe Pump Flowrate (µL/sec) 50
Syringe Pump Aspirate (µL) 50
Syringe Pump Delay Until Done
Valve micro-column
Syringe Pump Flowrate (µL/sec) 20
Syringe Pump Dispense (µL) 100
Syringe Pump Delay Until Done
Valve waste
Syringe Pump Flowrate (microliter/sec) 200
Syringe Pump Empty
Syringe Pump Delay Until Done

'2) WASH COLUMN AND FLOW CELL, FOLLWED BY REFERENCE SCAN
Syringe Pump Valve In
Syringe Pump Flowrate (µL/sec) 200
Syringe Pump Fill
Syringe Pump Delay Until Done
Syringe Pump Valve Out
Valve micro-column
Syringe Pump Flowrate (µL/sec) 20
Syringe Pump Dispense (microliter) 50
Syringe Pump Delay Until Done
Valve flow cell
Syringe Pump Flowrate (microliter/sec) 80
Syringe Pump Dispense (microliter) 80
Syringe Pump Delay Until Done
Spectrometer Reference Scan

'3) LOAD & MONITOR SAMPLE
Spectrometer Absorbance Scanning
Syringe Pump Valve Out
Valve sample
Syringe Pump Flowrate (µL/sec) 20
Syringe Pump Aspirate (µL) 20
Syringe Pump Delay Until Done
Valve micro-column

Syringe Pump Flowrate (µL/sec) 1
Syringe Pump Dispense (microliter) 100
Syringe Pump Delay Until Done

'4) ELUTION #1
Valve Eluant
Syringe Pump Flowrate (microliter/sec) 20
Syringe Pump Aspirate (microliter) 20
Syringe Pump Delay Until Done
Valve micro-column
Syringe Pump Flowrate (microliter/sec) 1
Syringe Pump Dispense (microliter) 100
Syringe Pump Delay Until Done

'5) ELUTION #2
Valve Eluant
Syringe Pump Flowrate (microliter/sec) 20
Syringe Pump Aspirate (microliter) 20
Syringe Pump Delay Until Done
Valve micro-column
Syringe Pump Flowrate (microliter/sec) 1
Syringe Pump Dispense (microliter) 100
Syringe Pump Delay Until Done
Spectrometer Stop Scanning
Valve waste
Syringe Pump Flowrate (microliter/sec) 100
Syringe Pump Empty
Syringe Pump Delay Until Done

'6) REMOVE BEADS
Syringe Pump Valve In
Syringe Pump Flowrate (microliter/sec) 200
Syringe Pump Aspirate (microliter) 300
Syringe Pump Delay Until Done
Syringe Pump Valve Out
Valve micro-column
Syringe Pump Flowrate (microliter/sec) 20
Syringe Pump Aspirate (microliter) 200
Syringe Pump Delay Until Done
Valve waste
Syringe Pump Flowrate (microliter/sec) 200
Syringe Pump Empty
Syringe Pump Delay Until Done

*Note: "flow cell" refers to port #6 and "micro-column" refers to port #2. For the sake of graphic presentation, the time necessary for loading beads (23 s) has been eliminated from all figures.

Table 2. Software protocol for assay using micro-Bead Injection Spectroscopy

'1) LOAD BEADS
Syringe Pump Valve In
Syringe Pump Flowrate (µL/sec) 200
Syringe Pump Aspirate (µL) 400
Syringe Pump Delay Until Done
Valve beads
Syringe Pump Valve Out
Syringe Pump Flowrate (µL/sec) 5
Syringe Pump Aspirate (µL) 5
Syringe Pump Delay Until Done
Valve flow cell
Syringe Pump Flowrate (µL/sec) 5
Syringe Pump Dispense (µL) 5
Syringe Pump Delay Until Done
Valve waste
Syringe Pump Flowrate (microliter/sec) 200
Syringe Pump Dispense (microliter) 300
Syringe Pump Delay Until Done
Valve flow cell
Syringe Pump Flowrate (microliter/sec) 10
Syringe Pump Empty
Syringe Pump Delay Until Done

'2) WASH FLOW CELL AND PERFORM REFERENCE SCAN DURING FLOW
Syringe pump Valve In
Syringe pump Flowrate (microliter/sec) 200
Syringe pump Fill
Syringe pump Delay Until Done
Syringe pump Valve Out
Valve flow cell
Syringe pump Flowrate (microliter/sec) 1
Syringe pump Dispense (microliter) 20
Delay (sec) 10
Spectrometer Reference Scan
Syringe pump Delay Until Done

'3) LOAD & MONITOR SAMPLE
Valve sample
Syringe pump Flowrate (microliter/sec) 20
Syringe pump Aspirate (microliter) 20
Syringe pump Delay Until Done
Valve flow cell
Spectrometer Absorbance Scanning
Syringe pump Flowrate (microliter/sec) 1
Syringe pump Dispense (microliter) 100

Syringe pump Delay Until Done
Spectrometer Stop Scanning

'4) ELUTION #1
Valve eluant
Syringe pump Flowrate (microliter/sec) 20
Syringe pump Aspirate (microliter) 20
Syringe pump Delay Until Done
Valve flow cell
Spectrometer Absorbance Scanning
Syringe pump Flowrate (microliter/sec) 1
Syringe pump Dispense (microliter) 100
Syringe pump Delay Until Done
Spectrometer Stop Scanning

'5) ELUTION #2
Valve eluant
Syringe pump Flowrate (microliter/sec) 20
Syringe pump Aspirate (microliter) 20
Syringe pump Delay Until Done
Valve flow cell
Spectrometer Absorbance Scanning
Syringe pump Flowrate (microliter/sec) 1
Syringe pump Dispense (microliter) 100
Syringe pump Delay Until Done
Spectrometer Stop Scanning
Valve waste
Syringe pump Flowrate (microliter/sec) 100
Syringe pump Empty
Syringe pump Delay Until Done

'6) REMOVE BEADS
Syringe Pump Valve In
Syringe Pump Flowrate (microliter/sec) 200
Syringe Pump Aspirate (microliter) 300
Syringe Pump Delay Until Done
Syringe Pump Valve Out
Valve flow cell
Syringe Pump Flowrate (microliter/sec) 20
Syringe Pump Aspirate (microliter) 100
Syringe Pump Delay Until Done
Valve waste
Syringe Pump Flowrate (microliter/sec) 200
Syringe Pump Empty
Syringe Pump Delay Until Done

*Note: "flow cell" refers to port #2. For the sake of graphic presentation, the time necessary for loading beads (33 s) has been eliminated from all figures.