PharmaFluidics
The micro-Chip Chromatography Company

Instruction Sheet

PharmaFluidics µPAC™ Toolkit

Accessories

Connect it! with the µPAC™ 1/16" Connecting PEEKsil™ capillary

P/N: 201904TLK

Connecting the µPAC™ column to a normal HPLC 6 or 10-port switching/injection valve is achieved with standard 1/16" HPLC fittings. The µPAC™ column is connected to the HPLC valve with a 25 µm internal diameter (I.D.) × 25 cm PEEKsil™ capillary. One end of the capillary has a 1/16" pre-assembled fitting (to valve) that is compatible with most HPLC systems. The other end of the capillary has a 1/32" pre-assembled fitting (to µPAC™ column).

Connect the PEEKsil™ capillary to the appropriate position in the injection valve. Ensure that the fitting is finger tight only. **Do not overtighten!**

Connect the stainless steel zero-dead-volume (ZDV) inlet union of the µPAC™ column to the PEEKsil™ capillary. Ensure that the fitting is finger tight only. **Do not overtighten!**

Initiate solvent flow (0.5 µL/min) to assess that the connections have been correctly configured (*i.e.*, no leaking). For the 50 cm and 200 cm µPAC™ columns, the column back pressure should be 40 to 80 bar and 100 to 150 bar, respectively. Solvent droplets should appear from the blue PEEK capillary on the outlet side of the µPAC™ column.

Never remove the fittings that are provided on the PEEK tubing extending from the aluminium housing of the µPAC™ column, nor cut the PEEK tubing. This will damage the µPAC™ column and prevent further use.

Click it! with the µPATCH

P/N: 201902TLK

To prevent any inadvertent damage to the µPAC™ column, secure the µPAC™ column in the column heater/compartment of the HPLC system or on top of the HPLC instrument with the µPATCH holder. Clean the surface where the µPATCH will be attached. Remove the tape from the back side of the µPATCH and firmly press the µPATCH onto the chosen surface.

Fix it! with the µPAC™ Spanner

P/N: 201903TLK

The µPAC™ spanner was developed to hold the stainless-steel inlet and outlet unions that are connected to the blue PEEK capillaries of the µPAC™ column. The spanner simplifies the process of creating a perfect leak-free connection and thus obtaining ideal chromatographic performance. With one hand, use spanner 1 to hold the union; with the other hand use spanner 2 to hold the nut. Turn spanner 1 clockwise and spanner 2 anti-clockwise until some resistance can be felt, add another ¼ turn and the connection is complete.

Ground it! with the µPAC™ Grounding Cable

P/N: 201901TLK

If the µPAC™ column is connected to the nanoESI source of a mass spectrometer, the column MUST be correctly grounded!

The µPAC™ column is primarily composed of the semi-conductor silicon. If no precautions are taken to shunt the high voltage to ground, there is a dramatic chromatographic peak broadening effect. Grounding for three different electrospray ionisation configurations is shown in Figure 1.

Before applying high voltage to the nanoESI emitter, ground the µPAC™ column. Attach the clip end of the blue coiled grounding cable to the µPAC™ outlet union (*i.e.*, the stainless-steel union with a shallow groove). Via the swallow tail or crocodile clip, attach the other end of the grounding cable to a grounded point on the mass spectrometer or the chassis of the HPLC.

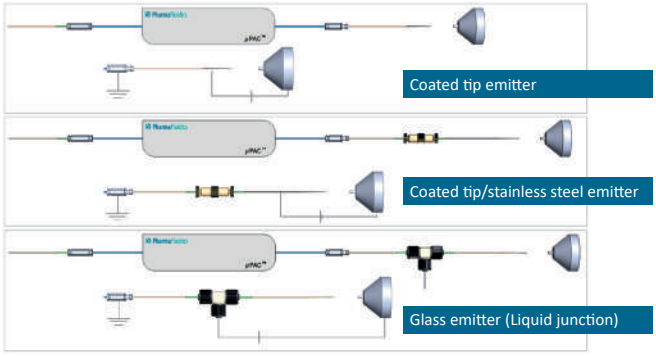

Figure 1: Grounded electrospray ionisation interfaces

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