

Utmost flexibility and modularity

Add a ROBOKROM® Multimode Sample Preparation and Introduction Autosampler and/or a KONIK MSQ12® Mass Spectrometer

Guarantee sample integrity, improve recovery and quantitation!

The use of LC/HPLC columns to fractionate selectively, out of any sample matrix, the compounds of interest might result in the elimination of tedious, cumbersome, costly and less-friendly extraction (e.g. Soxhlet) and sample preparation methods. Liquid samples (water, viscous or dissolved samples) can be directly introduced into the HPLC even without any prior sample preparation step. This guarantee full protection of the sample integrity while improving quantitation of the analytes.

Unsurpassed flexibility: use any LC/HPLC columns and solvents

The KONIK HPLC+HRGC K2 handles all type of columns and all types of solvents. Both HPLC and LC methods using reversed phase (organic phases and polar solvents) as well as direct phase methods (columns with silica, alumina and the like and apolar solvents) are equally suitable to the System.

Use any trap and trap any analyte!

The limit is the Analytical Chemist imagination. All trapping materials conventionally used in Purge and Trap methods can be used in accordance to the sample, solvents and analytes of interest.

In order to push the "new limits", KONIK-Tech is developing proprietary materials to widen the scope of applications both in the traps and for the LC/HPLC fractionation steps.

KONIK HEADQUARTERS

Europe, BARCELONA:

T (+34) 93 590 28 40 - F (+34) 93 590 28 44

Av. Cerdanyola, 73, 08172 Sant Cugat, Barcelona, Spain

e-mail: sales@konik-group.com

USA, MIAMI:

T (+1) 305 252 0506 - F (+1) 305 252 0809

12221 SW, 129th Ct., Miami, Florida 33186, USA

e-mail: miami@konik-group.com

Agents and Representatives worldwide

Analyse any volatile and many non-volatiles in the HRGC!

All trapped volatile substances can be easily, reproducibly, and quantitatively desorbed. Non-volatile substances can be trapped on suitable adsorbents and derivatised under stopped flow conditions and further eluted to the HRGC column (patent applied for).

Handle a wide range of volumes of polar or non-polar solvents!

Large amounts of solvents namely from a few micro litres to a few ml can be passed through the interface to capture the analytes. The volume to be sampled will be mainly limited by the trap capacity. This sample concentration step lowers detection limits to unforeseen lower levels.

Try it! Contact our R+D Applications Lab:

applications.lab@konik-group.com



KONIK K2 MSQ12® + ROBOKROM®

KONIK-TECH is an
ISO 9001 Certified Company



www.konik-group.com

Technical information in this publication is for reference purposes only and it is subject to change without notice.

K2_BRO_E_0701

KONIK HPLC+HRGC K2 and K2 MSQ12®

Opening new dimensions

The **KONIK HPLC+HRGC K2** opens the innovative world of multidimensional LC/HPLC+HRGC.

Combined hyphenated techniques are always of potential interest to Analytical Chemists. In fact GC-MS and LC-MS are now standard equipment in most laboratories and hundreds of methods (most official) rely on these hyphenated techniques. Their analytic power and convenience are unquestioned. This innovative HRGC+HPLC coupling, that puts together two proven techniques in synergy, will follow suit!

KONIK-Tech has been developing and manufacturing HRGC and HPLC Systems with innovative designs and unmatched performances for the last 25 years. Unique cold septum injectors, high precision ovens, pulse free pumps, multidimensional-multivalve systems, multimode autosamplers, multifunctional mass spectrometers ... are only a few of KONIK-Tech impressive innovation trackrecord. This newly developed **KONIK HPLC+HRGC K2** System, fully developed and manufactured by KONIK-Tech, based in **Patent No.: US 6,402,947 B1** and others, is the next natural step.

KONIK's **HPLC+HRGC K2**, an innovative product from an innovative Company!

A New
Dimension
in Molecular
Analysis



KONIK HPLC+HRGC K2 System

KONIK HPLC+HRGC K2 an Innovative Technology

HPLC+HRGC, a happy marriage!

The innovative KONIK-Tech patented TOTAD® (Through Oven Transfer Adsorption Desorption) interface marries in synergy the separation and fractionation potential of LC and HPLC, to the separation, selective detection and quantitation of HRGC, opening new dimensions... pushing forward borders and limits.

Owing to its unique characteristics and performance the **KONIK HPLC+HRGC K2** offers to the Analytical Chemist a powerful high performance tool to develop innovative methodologies, while handling, with unsurpassed comfort, the most complex matrices to reach far lower detection limits than some official methods... easily.

KONIK-Tech's brake through is paving the road to make equally this innovative HPLC+HRGC patented coupling, an standard in every R&D and QC laboratory around the globe. Its unquestionable and unbiased analytic power is there. It is only up to the imagination of the Professional Analytical Chemist familiar with chromatographic methods to take full advantage of it!

The principle: an innovative well proven technology

The basic problem to overcome in coupling an LC/HPLC to a HRGC is the selective elimination of the HPLC solvent from the analytes of interest that can not enter the HRGC column. The TOTAD® interface achieves both objectives simultaneously while maintaining the HRGC column flow undisturbed.

FIGURE 1 (below)

The flow diagram depicts the TOTAD® interface operating principles. This patented interface allows the trapping of the analytes in the modified PTV injector of the KONIK HRGC 5000 A at the chosen temperature where the trap is held while a digitally controlled continuous flow of Helium maintains the column flow and eliminates the solvent from the trap. The HRGC 5000 A time functions of its Control Module automatically sets the logical valve sequence and the KONIK Mass Flow Controllers accurately regulate the set flows. These can be adjusted as well as the temperature of the trap to the solvents being used.

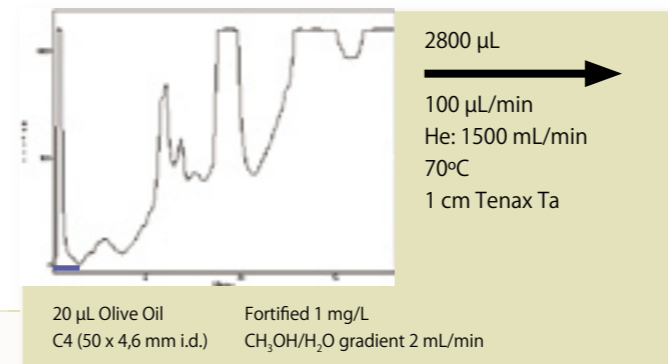
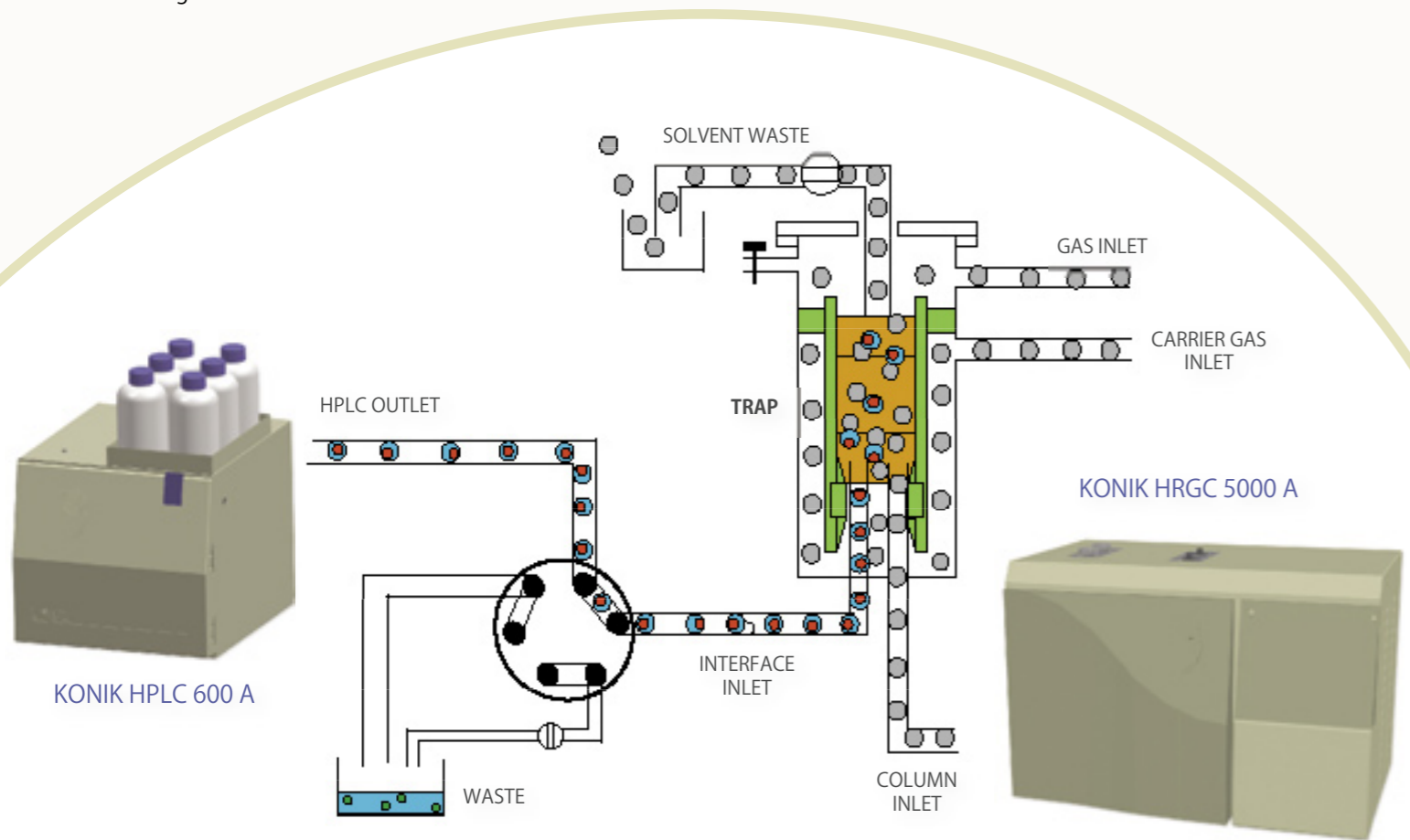
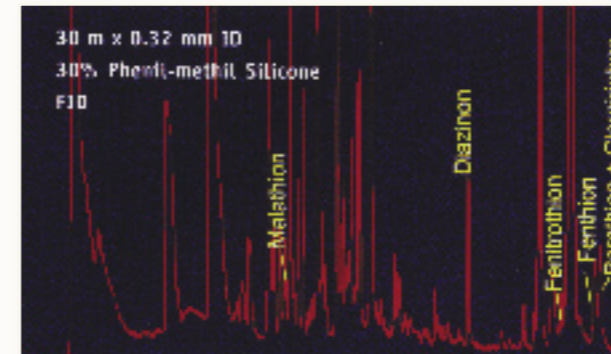


FIGURE 2

Direct injection of 20 µL of Olive Oil without any previous sample preparation step



Simplified sample preparation!

The two stages (LC/HPLC fractionation and trapping), prior to the introduction into the HRGC column, contribute to simplify the sample preparation and its conditioning. The HPLC column and solvents used can contribute totally or partially to the sample clean up depending on the complexity of the matrix. The trap interface will do the rest, selectively or universally, trapping and desorbing the compounds of interest.

Full automation!

The KONIK HPLC+HRGC K2 System is totally automated. After a particular method is developed the KONIK ROBOKROM® Autosampler can inject up to 171 samples (in its original matrix or raw extracts) into the HPLC column. Qualitative and quantitative results can be automatically obtained after the GC run is completed.

Saves time and reduces cost

The KONIK HPLC+HRGC K2 is a rugged workhorse, designed to produce reliable results sample after sample with significant reduction in total analysis time, with maximum operator's comfort. Lower RSD are also obtained that result in better qualitative and quantitative data... at a push of a button, or a click of the mouse.

Simplified method adjustment!... and new methods development

In order to explore and explode the full potential of this innovative technique KONIK-Tech has made sure those method adjustments and innovative method can be developed easily and comfortably. All critical parameters like flows and temperatures are digitally controlled. Traps are easy to change. All parts in the **KONIK HPLC+HRGC K2** are conveniently accessible for easy maintenance.

The potential:

The examples of applications demonstrate the Analytical Power of the innovative HPLC+HRGC K2 System: PCBs, PAHs, phthalates, herbicides, drugs, antibiotics, analgesics, preservatives in water, oil, food, spirits and wines, blood, urine, honey, soft drinks, coffee and tea, juices, biologic fluids... among many others.

The benefits: better qualitative results!

Combined **KONIK HPLC+HRGC K2** System provides dual retention indexes, from both the HPLC fraction chosen and the high precision HRGC retention times. This dual "retention time locking" can routinely provide unequivocal chemical identities of the compounds eluted. The **K2** imposes the selectivity derived of a dual column system and their particular analytical conditions. These combined selectivity's are highly unlikely to be matched by two compounds of different chemical structure with the exception of optical isomers.

Lower detection limits!

As the patented TOTAD® interface uses a trapping and enrichment stage, likewise in Purge and Trap methods, the analytes are concentrated in the trap lowering their detection limits.