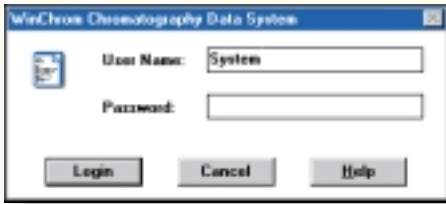


WinChrom Chromatography Data Management System

*Premier Control System for High
Performance Liquid Chromatography*



GLP features for regulatory compliance

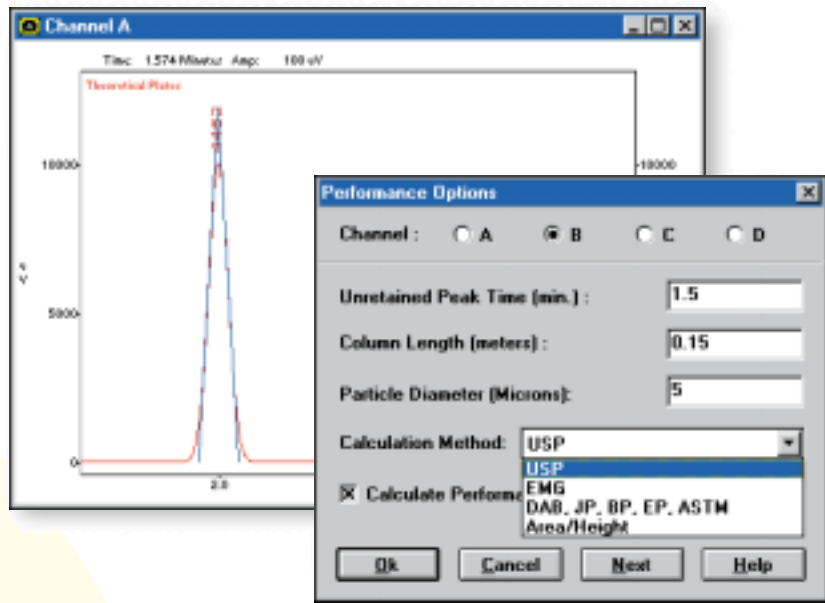


System Security

With WinChrom, your system security is assured. Password protection and multi-level access provides isolation and limits accessibility to chromatographic data and stored methods to authorized individuals. User selectable GLP data over-write protection ensures that your valuable data files will never be accidentally overwritten. WinChrom's on-board electronic system log provides automated tracking of all critical system operations for monitoring of system usage as well as future reference.

Data Integrity and Traceability

Traceability of reported data back to raw data is important for GLP compliance. US FDA GLP regulations have stipulated that "any change in automated data entries shall not obscure the original entry..." (US FDA GLP 58.130 Part e). With WinChrom, data integrity and traceability is assured with its encapsulated data file format. The chromatographic raw data, original method parameters and processed results, user identity, date and time of entry and last modification, as well as other run information are all saved in one file for effective tracking and portability.



WinChrom Performance Calculation facility is supplied as standard. It provides automated calculation of all performance variables with the pharmacopoeia method of your choice.

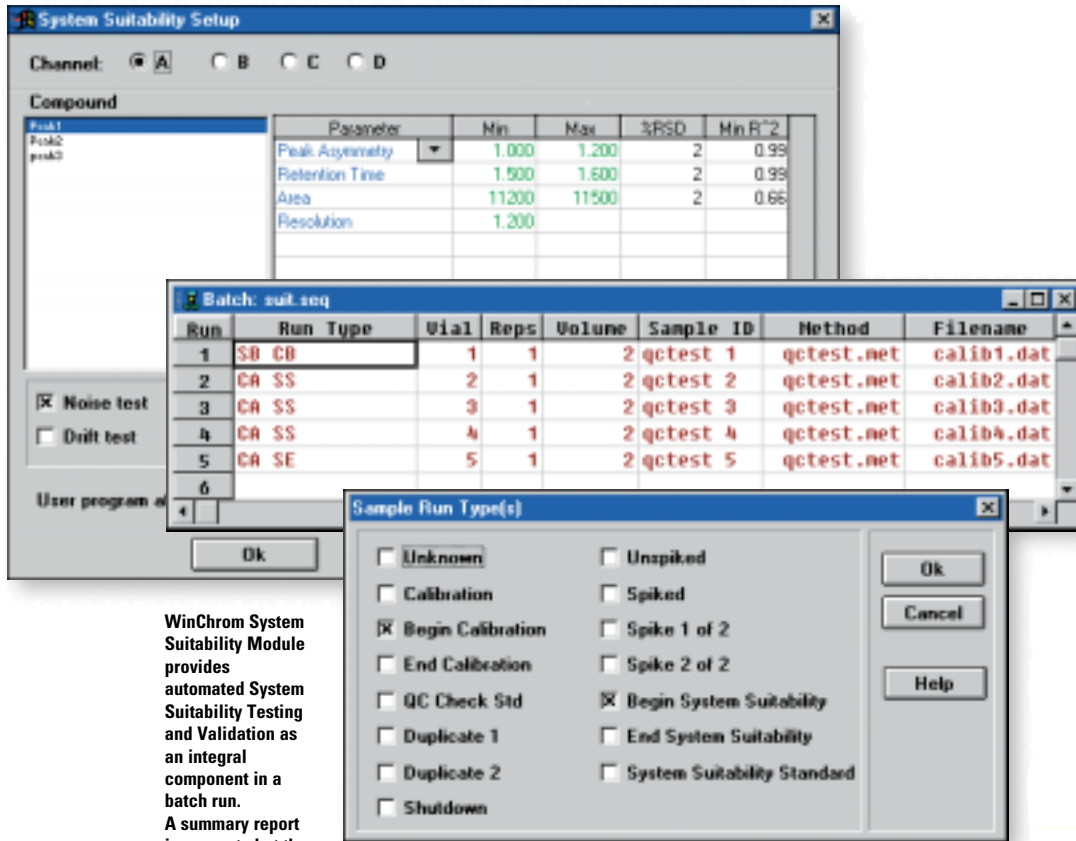
System Suitability Testing and Performance Calculation

The US and other Pharmacopoeias have proposed system suitability tests for chromatographic systems. This involves the calculation of performance variables relating to efficiency, capability, resolution and reproducibility. Manual calculations of these variables are tedious if not impossible. With WinChrom, these calculations are performed and reported automatically for you with activation of the WinChrom Performance Option. Simply select the Pharmacopoeia methods required, and leave the rest to WinChrom.

Additional GLP Features

In addition to the powerful GLP features that are incorporated as standard, WinChrom also provides a System Suitability Module with enhanced testing and reporting capabilities. This module offers customized system suitability parameters for individual components, noise and drift test calculations, suitability test corrective action, and a system-wide System Suitability Summary Report with a signature line for instrument validation.

WinChrom



WinChrom System Suitability Module provides automated System Suitability Testing and Validation as an integral component in a batch run. A summary report is generated at the completion of the testing, indicating the status of the system.



Network

WinChrom on Your Network

Whether you have an existing network such as Novell Netware or DECnet™, or are starting out with Windows for Workgroups™, using WinChrom on a network increases your system security and productivity. You can share disk drives and printers or do method development in your office, using data acquired on your laboratory PC.



Quality and Certificate of Validation

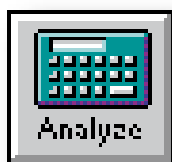
GBC's commitment to quality is reflected by our certification to ISO 9001 for all products manufactured within our facility. All modules controlled by WinChrom are functionally validated, individually and as a system, prior to shipment. Each module is issued with both a Certificate of Conformance and an unique serial number. The same commitment applies to our software development, and a Certificate of Validation is supplied with every installation of WinChrom.

Automated data acquisition and enhanced integration capabilities



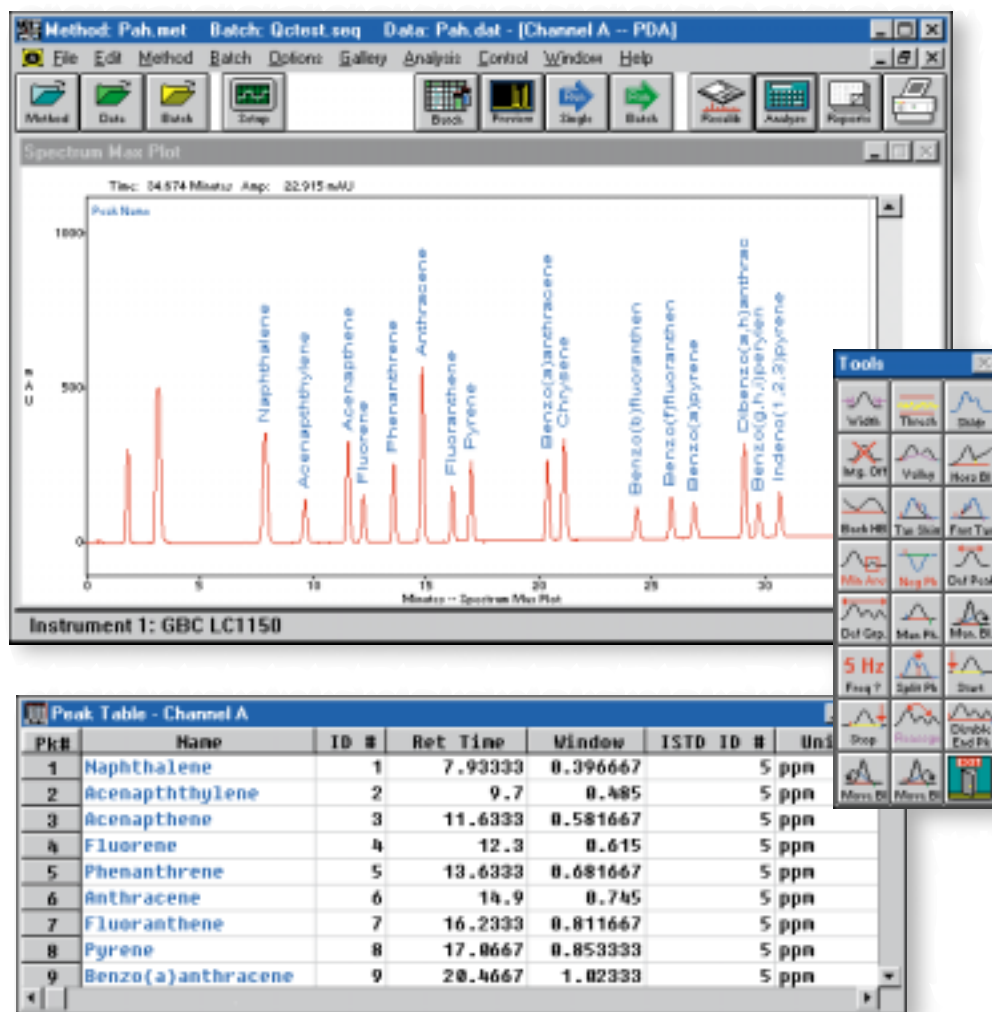
Preview—easy access to preliminary chromatograms

Use the “Preview” function to check your assay baseline and capture chromatograms before defining all method parameters. This saves time and effort in performing essential trial runs. Save these run data and finalize the setting up of your method parameters using WinChrom powerful on-screen tools for method programming.



Analyze—data processing with single-button operation

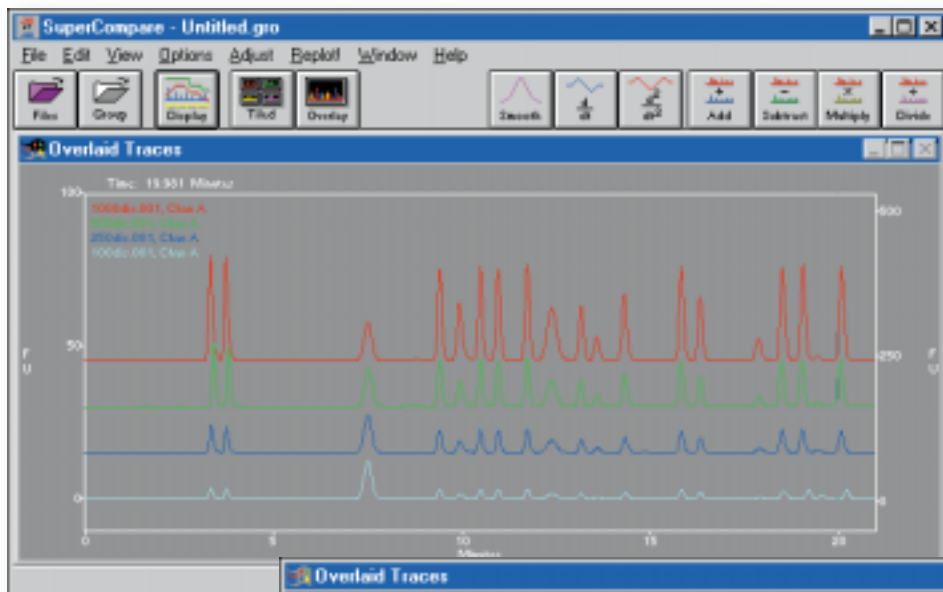
Press the “Analyze” icon to integrate your chromatogram. You can even process your trace in the middle of a run.



Optimize your method parameters using WinChrom integration tools.

Import your retention time data to create the required Peak Table with the pressing of one button.

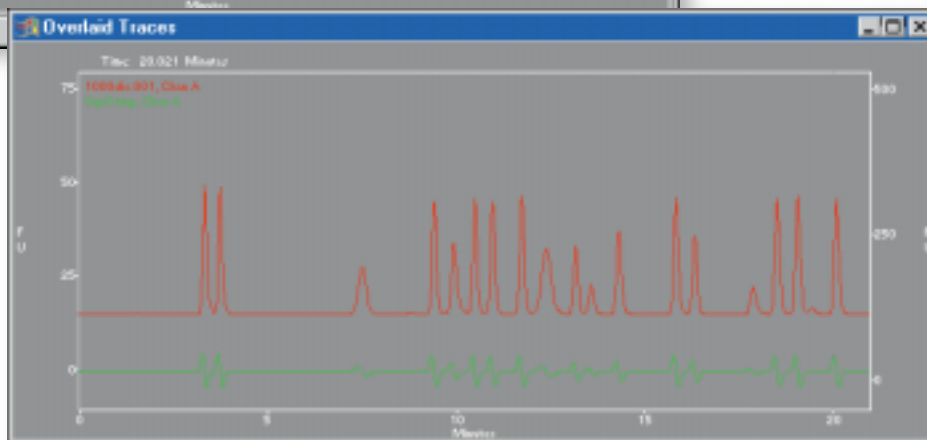
SuperCompare for on-screen chromatogram comparison



Versatile Chromatogram Comparisons with SuperCompare

Compare your chromatograms using WinChrom's powerful SuperCompare. Overlay, tile, align, stretch, and normalize groups of chromatograms using SuperCompare's built-in tools. You can even perform on-screen-mathematical operations on chromatograms (subtraction, addition, multiplication, division, smoothing, 1st and 2nd derivatives) with the press of a single button.

Compare your chromatograms on-screen with WinChrom SuperCompare. Up to 32 traces can be displayed simultaneously.



Print a hardcopy of this comparison for documentation, or copy and paste it via the Clipboard directly into your text document. Save your selection of chromatograms as a Group file for easy retrieval in future reference. With WinChrom, chromatogram comparison is fun.

Customized reporting, easy data export/import features



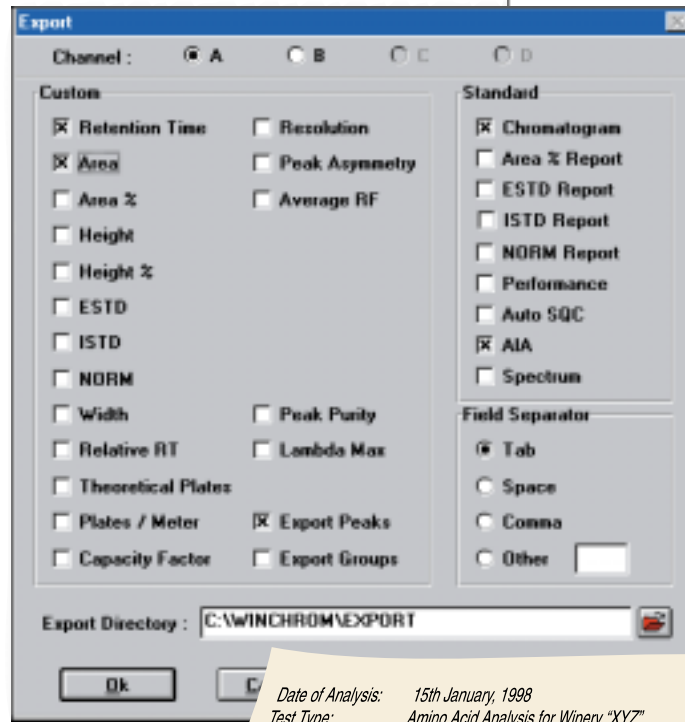
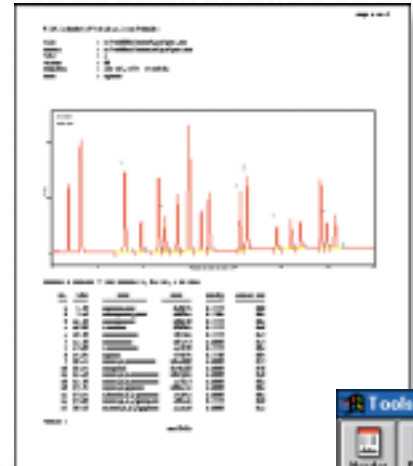
Reports the Way You Want Them

WinChrom provides a complete list of report formats. These include Area %, Internal and External Standard, Normalized, Spike, Duplicate, QC Check, Calibration and Batch Summary. In addition, create your own customized reports to provide the information that is most important to your laboratory with WinChrom Custom Report Generation facility. Add custom headers and footers, include multiple chromatograms sized and placed as you want them, and incorporate result tables with the relevant parameter fields. Preview the report before it is printed, save the format as a template if required, or customize the report with a simple “cut and paste”.

Easy Export/Import of Data to and from Other Applications

Many laboratories use spreadsheets, databases, or other programs to perform specialized tasks. With WinChrom, simply tick the required export data (whether chromatograms or batch results) in the Export Option screen and the task will be automatically performed. Activate WinChrom’s built-in Dynamic Data Exchange (DDE) feature and the required data will be transferred directly to your spreadsheet, saving you time and eliminating potential manual data transfer errors. For inter-laboratory result comparison and publication, take advantage of WinChrom’s data export and import facility which handles files in both ASCII and AIA formats.

Customize the report format with WinChrom Custom Report facility. Layout the format as required by “cut and paste” using the on-screen template tools.



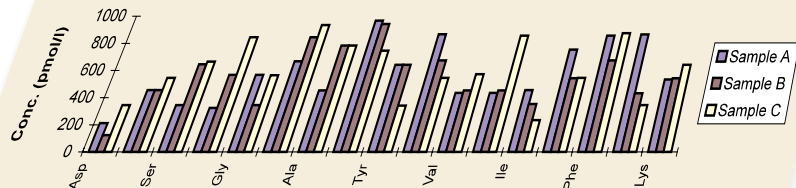
Export the required data from WinChrom simply by checking the relevant boxes in the Export setup screen. For maximum flexibility, WinChrom can export individual run data as well as batch file results.

Date of Analysis: 15th January, 1998
 Test Type: Amino Acid Analysis for Winery "XYZ"

Concentration (pmol/l) of Amino Acid

Sample ID	Asp	Glu	Ser	His	Gly	Thr	Ala	Pro	Tyr	Arg	Val	Met	Ile	Leu	Phe	Cys	Lys
Sample A	213	456	345	324	567	668	453	967	643	867	435	435	456	754	856	865	534
Sample B	124	456	646	567	345	845	784	943	643	675	453	353	543	433	433	543	543
Sample C	345	545	665	845	566	934	784	745	342	546	856	856	234	546	345	345	643

AMINO ACID ANALYSIS



Improve your laboratory throughput
with WinChrom batch facility for
unattended, automated runs

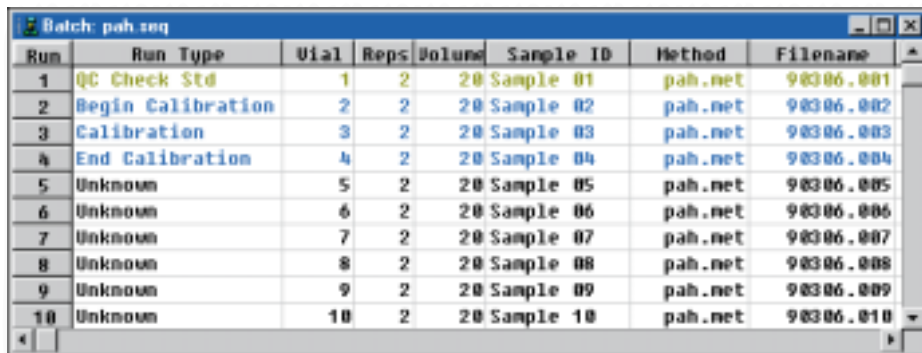


Automated batch runs

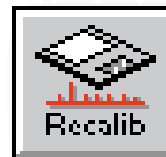
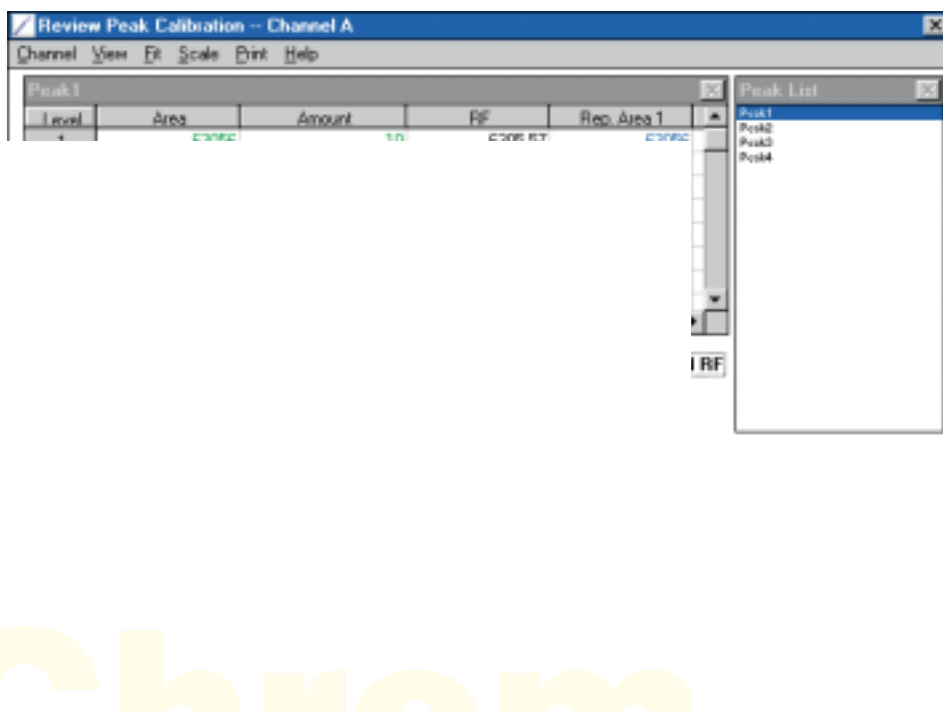
Setup a batch run using WinChrom's "New Batch" facility, or simply modify an existing one. Up to 750 samples can be automatically generated in the Batch table, satisfying your most demanding automated sample throughput requirements.

Start the Batch Run by pressing the "Batch" button, and leave the rest of the sampling task to WinChrom.

If you have requirements for Spike, Duplicate or QC Check experiments, simply specify the Run Type in your Batch and WinChrom will conduct the checks as specified.



Run	Run Type	Vial	Reps	Volume	Sample ID	Method	Filename
1	QC Check Std	1	2	20	Sample 01	pah.net	98306.001
2	Begin Calibration	2	2	20	Sample 02	pah.net	98306.002
3	Calibration	3	2	20	Sample 03	pah.net	98306.003
4	End Calibration	4	2	20	Sample 04	pah.net	98306.004
5	Unknown	5	2	20	Sample 05	pah.net	98306.005
6	Unknown	6	2	20	Sample 06	pah.net	98306.006
7	Unknown	7	2	20	Sample 07	pah.net	98306.007
8	Unknown	8	2	20	Sample 08	pah.net	98306.008
9	Unknown	9	2	20	Sample 09	pah.net	98306.009
10	Unknown	10	2	20	Sample 10	pah.net	98306.010



Powerful calibration

For a new method, create your peak table graphically using the WinChrom on-screen "Peak Definition" tool. Peak retention times will be entered automatically. Complete the table simply with peak names, internal standard ID, standard concentration, and required calibration method.

Whether your calibrations are simple or complex, WinChrom handles them with ease. Review your calibration curves with the press of the "Calibration Review" button, and re-optimize the method settings through on-screen comparison of different fit types and selection of outliers if required.

Review your calibration curves and select the most appropriate fit type and data weighting through simultaneous on-screen display.

GBC WinChrom provides complete system control and true multi-tasking for HPLC

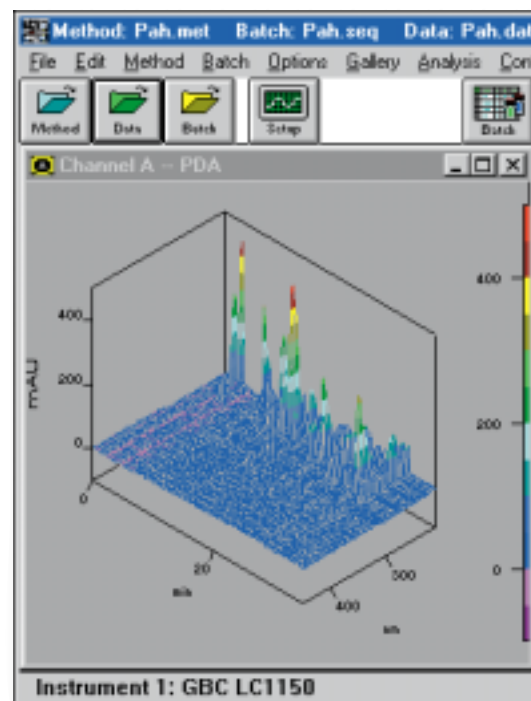
WinChrom provides powerful multi-tasking operation

GBC WinChrom operates within the popular Microsoft Windows® operating environment. It provides reliable multi-tasking for simultaneous instrument control and data acquisition of up to four HPLC systems, even while you re-process previous results, re-optimize your methods, and/or run other software applications.

System control and peace of mind

WinChrom controls a range of GBC HPLC modules. The user-friendly screens enable simple, central control for integrated system operation. With the press of an on-screen button, you can execute a multiple sample batch run from start to finish, including system suitability test, assay calibration, result quantitation, report preparation, LIMS data export, and post-run system shutdown with a specific wash solvent.

WinChrom can also react in emergency situations common in real life operations, such as power failure or abnormal system pulsation. It incorporates a novel Real Time Fault Handling protocol to minimize hazardous situations and costly malfunctions.



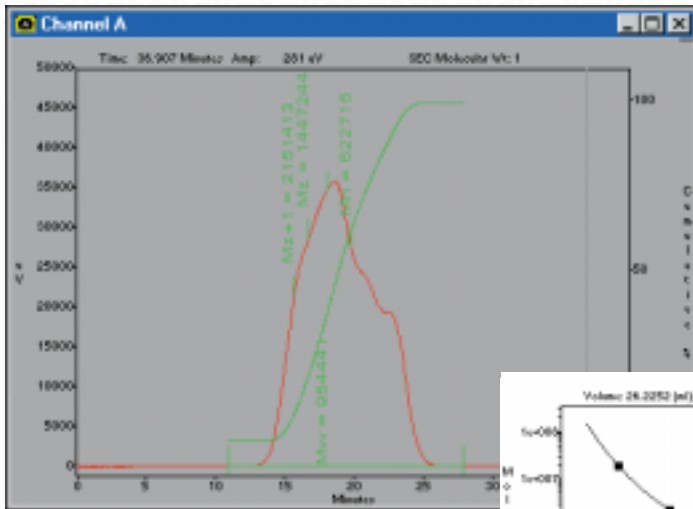
Fully automated error recovery

For non-critical errors such as low solvent level detection, the software error recovery function automatically shuts down the system according to previous user instructions, preventing damage to costly columns. For critical errors, such as under-pressure detection indicating a fluid leak or over-pressure error due to flow blockage, WinChrom shuts down the system immediately to avoid potentially costly repair.

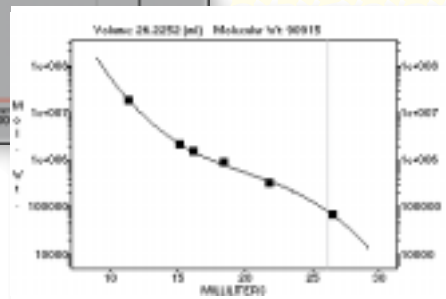
WinChrom provides full system control, with the confidence that comes from precise and accurate sampling and protection for your HPLC investment.

WinChrom

WinChrom



WinChrom SEC Software Module offers both Narrow Range and Universal calibrations, accommodating all your SEC/GPC needs.



Size Exclusion/Gel Permeation Chromatography

Determine the molecular weight distribution of large molecules and polymers using Size Exclusion/Gel Permeation Chromatography (SEC/GPC) with the WinChrom SEC Software Module. The software supports both Narrow Range and Universal calibrations. Curve fit type features both polynomial and spline. Display and print the chromatograms with your required annotation, including points of various molecular weight average results and integral line for cumulative area percent. In addition, the software's extensive reporting facilities ensure the effective analysis and presentation of your results.

Report facilities include:

- Summary Reports with molecular weight distribution calculated values (Mn, Mw, Mz, Mz + 1 and polydispersity)
- Histograms of cumulative weight fraction
- Slice Reports showing elution time/volume, area, molecular weight and other parameters for each time slice
- Calibration Report including goodness of fit, molecular distribution and more.

Why WinChrom is the preferred Chromatography Management System

- Control and data acquisition of up to four complete HPLC systems
- Multi-tasking MS Windows® environment
- Easy-to-use interface with single screen method programming and drop-down menus
- Powerful graphic icon-based integration
- GLP features for regulatory compliance
- System Suitability software module for automated System Suitability testing
- SuperCompare graphic display for chromatographic comparison
- Customized report formatting
- Multiple data export functions including AIA format and DDE (Dynamic Data Exchange)
- Network capabilities and user program facility for LIMS integration
- Advanced photo diode array control and graphics
- SEC/GPC software option for Gel Permeation Chromatography

*Photo Diode Array
detection control and
Gel Permeation Chromatography*

Full PDA Detector Control

WinChrom provides you with complete control of the GBC range of PDA detectors. Its intuitive user interface provides “real time” simultaneous display of contour map, chromatogram and spectrum. Check the chromatogram at any wavelength and/or spectrum at any time slit simply by sliding the contour map cursors to the required positions.

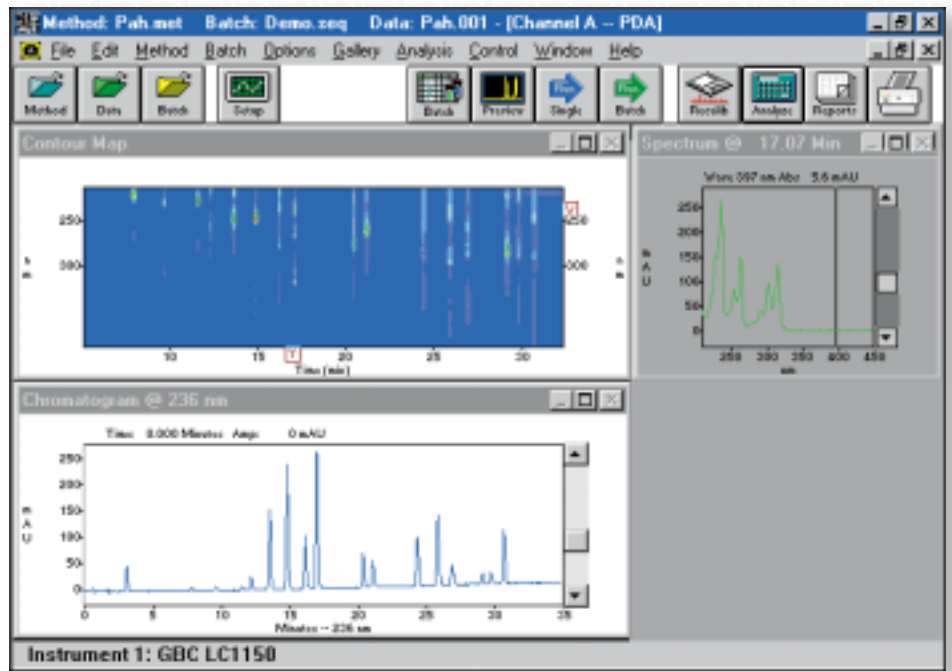
Review your chromatograms with WinChrom 3-dimensional plot, showing absorbance against both time and wavelength data. Rotate the plot to any desired angle using on-screen PDA tools and check for any hidden peaks.

For multi-chromatogram display, the software offers up to nine simultaneous wavelength settings. Increase your assay sensitivity with WinChrom’s powerful Spectrum Max Plot facility, which automatically selects the optimal wavelength settings in “real time”!

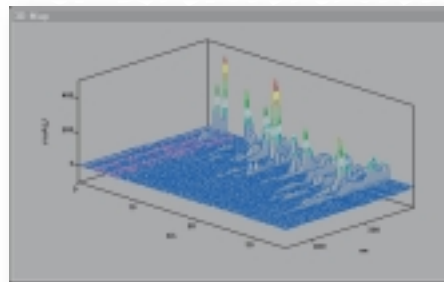
Confirming Your Peak and Its Purity

Confirm the purity of your peaks with Peak Purity Check and Chromatogram Ratio Plot. This helps to identify possible co-eluting components and establish the reliability of area quantitation. Activate the Spectral Library Search function and WinChrom will perform the identity match automatically for you using the selected library.

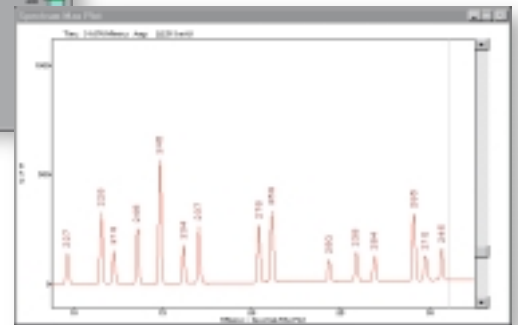
WinChrom Spectral Library Search provides automatic matching for peak identity confirmation.



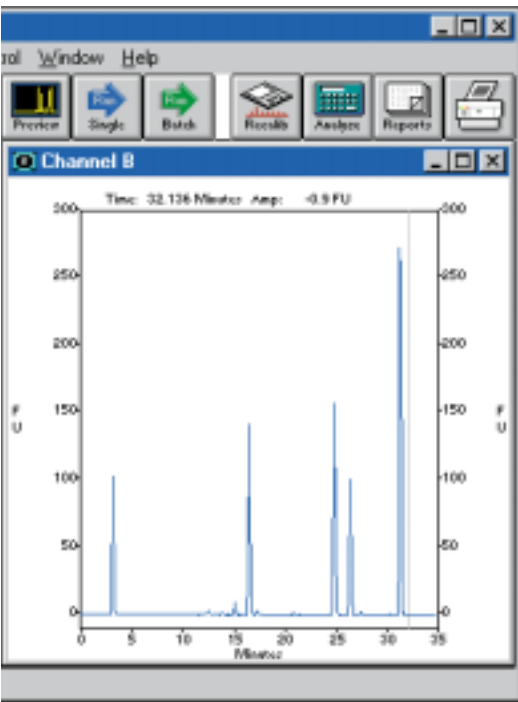
WinChrom's intuitive PDA user interface provides "real time" contour map, chromatogram and spectral display. Its 3-D plot is ideal to check for hidden peaks.



WinChrom's powerful Spectrum Max Plot facility automatically selects the optimal wavelength settings for maximum assay sensitivity.



User-friendly software control of pumps, detectors and autosamplers



WinChrom intuitive, friendly graphical user interface provides "single-button" operations for common tasks.

WinChrom supports a range of GBC HPLC detectors. Set up your required detection parameters as an integrated component of your method file for GLP compliance.

Simplicity and power

The intuitive WinChrom Graphical User Interface (GUI) combines simplicity and power, enabling you to set up methods and execute runs easily using its customized tool bars. Press the "Preview" button for trial runs and baseline stability check. Open the Integration Tool Box to optimize your method parameters. Press the "Report" button to display your results on-screen. With WinChrom, power and simplicity come together.

Channel: A

Acquisition

Run Time: 35 Min

Acquisition Delay: 0 Min

Start Wavelength: 210 nm

End Wavelength: 450 nm

Time Constant (sec): 1

Ref. Wavelength: 350

Analog Output Freq: 1

Library Search

Library: C:\WINCHROM\LIBRARY\PAH.S

Wavelength From: 210 nm To: 450 nm

Similarity Index Threshold: 0.95

Max Number of Hits: 3

Pump Flow Program

#	Time	Flow	A%	B%	C%	D%	Curve	Est. 1	Est. 2
1	0.00	1.00	80.0	40.0	0.0	0.0	0	0	0
2	5.00	1.00	80.0	40.0	0.0	0.0	0	0	0
3	30.00	1.00	0.0	100.0	0.0	0.0	0	0	0
4	25.00	1.00	0.0	100.0	0.0	0.0	0	0	0
5	25.02	1.00	80.0	40.0	0.0	0.0	0	0	0
6	60.00	1.00	80.0	40.0	0.0	0.0	0	0	0
7	60.02	0.20	80.0	40.0	0.0	0.0	0	0	0

Ready

WinChrom provides full programming capabilities for GBC HPLC pumps. Gradient profiles for flow rate and composition changes are displayed with tables and graphics.

AutoSampler Manual Control

Commands

- Trap Temperature
- Move Needle
- Wash Station - Operation
- Sample Handling - Operation
- Sample Handling - Mixing
- Sample Handling - Transfer
- Sample Handling - Dump

Move Needle

Position by: Val Selection

Val: 1

Selection

- Home
- Inject
- Access
- Wash

Status: Down Mode

Buttons: Execute, Close, Abort, Help

WinChrom allows full robotics control of the GBC range of HPLC autosamplers. This enables automatic dilution and pre-column derivatizations, improving assay precision and saving many hours of manual preparation time.



Designed and manufactured by
GBC Scientific Equipment Pty Ltd
A.C.N. 005 472 686

GBC reserves the right to change specifications without
prior notice.

GBC publication number 01-0272-01
April 1998 Australia

GBC Scientific Equipment
Manufacturer of premier instrumentation—
AAS, ICP-OES, ICP-MS, HPLC and UV-Vis

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email: info@gbcseps.com
URL: <http://www.gbcseps.com>



GBC supplies a wide range of HPLC equipment and applications information for almost every aspect of High Performance Liquid Chromatography, including:

- Isocratic and gradient HPLC pumps
- UV-Vis detectors (variable, programmable single- and dual-wavelength, and photo diode array)
- Programmable fluorescence detector
- Electrochemical detector
- Refractive index detector
- Conductivity detector and suppressor for ion chromatography
- Auto-injector (pre-injection derivatization, small volume, variable volume capabilities)
- Chromatography software (Windows® and MS-DOS®)
- HPLC Column ovens
- Columns and accessories

Ordering Information

99-0258-00 WinChrom 1-2 System
Standard system

For information on other configurations
please contact your GBC representative.