

THE SERCON GROUP

ABCA2

AUTOMATED BREATH
 $^{13}\text{CO}_2$ ANALYSER



sercon
The *Stable* Isotope Company



ABCA2 AUTOMATED BREATH ¹³CO₂ ANALYSER

Sercon are dedicated to the design, manufacture and support of **Isotope Ratio Mass Spectrometers** and their associated **sample preparation systems**.

The ABCA2 is the high performance, high sample throughput isotope ratio mass spectrometer for breath analysis. The outstanding performance and versatility, combined with user friendly software, make the ABCA2 the only choice for ¹³C breath tests. Superior performance, high sample throughput and unlimited sample capacity ensure that this is the ultimate instrument for Helicobacter pylori detection.

Other demonstrated ¹³C applications include: fat malabsorption, pancreatic function, lactose intolerance, bile acid circulation, gastric emptying, liver function and metabolic turnover rate measurements.

ABCA2 - AUTOMATED BREATH ¹³CO₂ ANALYSER

The ABCA2 is the high performance, high sample throughput Isotope Ratio Mass Spectrometer for breath analysis.

Providing 0.1‰ Precision for ¹³C Samples from 0.1% to 10% CO₂

Multiple Sampling, High Sample Tube Capacity, Bar Code Reader, Automated Sample Pairing, Internal Reference Gas

12ml Sample size using either Vacutainers or Exetainers provided with test kits

The outstanding performance and versatility of the ABCA2 makes it the only choice for ¹³C breath tests, now and in the future.



THE ABCA2 IS THE ULTIMATE INSTRUMENT FOR HELICOBACTER PYLORI DETECTION

Other demonstrated ¹³C applications include: Fat malabsorption, Pancreatic Function, Lactose Intolerance, Bile Acid Circulation, Gastric Emptying, Liver Function and Metabolic turnover rate measurements

¹³C is a non-radioactive, naturally occurring stable isotope which is used to label a specific metabolic substrate. The patient ingests and metabolises the substance, such as urea, in such a way that the ¹³C is released as ¹³CO₂ and expelled in the patient's breath. The level of ¹³CO₂ measured in the breath is used to determine a particular metabolic disorder.

The ABCA2 provides a rapid, accurate and sensitive analysis of the metabolic product so providing an unparalleled level of precision, accuracy and reliability while combining automated analysis and a highly efficient sample throughput.

Based on the high performance 20-22 stable isotope analyser the ABCA2 is a fully integrated breath CO₂ purification and ¹³C measurement system. Breath samples in convenient septum capped containers are purified by a simple permeable membrane water trap and gas chromatograph before flowing directly to the mass spectrometer analyser for measurement of ¹³C enrichment. The software integrated 240 position autosampler and bar code reader ensure that the whole process of measuring ¹³C breath tests is completely automated.

¹³ C	Sample	Specification (Standard Deviation)	ABCA2 Typical Data (From Test Records)
Ref Gas Injection Precision	100% CO ₂ (n=5)	≤0.1‰	0.04
Ref gas in tubes precision	10ml 5% CO ₂ (n=5)	≤0.1‰	0.04
Breath Precision	Breath in Exetainer (n=5)	≤0.2‰	0.08
Linearity	10 to 2ml 5% CO ₂ in Exetainer	≤0.5 % change	0.19



THE KEY FEATURES OF THE ABCA2 INCLUDES:

- Full PC control of all system via Windows based software.
- Compatible with LIMS systems.
- Optional Bar code reader for secure patient identification and GLP compliance
- Sercon XYZ sampler with five 48 place racks for 12ml vials meaning a total of 240 vials can be loaded at a time. With the bar code reader installed samples positions can be reloaded providing a high number of consecutive analyses.
- A breath container may be analysed up to 5 times i.e. a stored sample may be re-analysed if a further measurement is requested.
- Internal Reference Gas Injection for ease of calibration and laboratory quality control tests e.g. instrument linearity checks. Mimics a real sample by traveling through the complete sample flow path.
- High quality regulator for gas control, digital flow sensor, normally closed valves configured to save gas and preserve consumables in the event of a power failure.
- Total software control of the instrument system and data processing. Allows storage of sample analysis protocols and mass spectrometer tuning conditions to comply with good laboratory practice
- Standby mode to preserve consumable life during periods of low use.
- Inter-file import / export facility from instrument PC to laboratory server or internet (allows rapid updating of software or transfer to common spreadsheet packages).

Power and Gas Requirements

Power	100-240 VAC
Helium	99.999%
Compressed Air	50 psi





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