

Rapid Microbiological Methods Rapid Automated Bacterial Impedance Technique



don whitley
scientific
excellence in microbiology



The way forward for automation in the microbiology laboratory. Direct and indirect impedance measurements and modular design provide a totally flexible screening system with Windows™-based software.

Don Whitley Scientific Limited has taken the measurement of impedance – widely accepted as the most versatile yet least expensive of all rapid bacterial detection methods – and produced an instrument which combines ease of use with leading edge electronic technology.

Two specific techniques offer the user considerable scope.

In the direct technique, metabolising micro-organisms increase the electrical conductance of the culture medium in the system. Rapid Automated Bacterial Impedance Technique (RABIT) for Windows™ measures these changes and provides results faster than by the use of traditional methods.

The indirect technique provides a flexible impedance method which monitors the amount of carbon dioxide produced by growing organisms. This technique is particularly suitable for detecting organisms which do not produce highly charged metabolites, for example yeasts and moulds.

The benefits of RABIT

Four simple steps



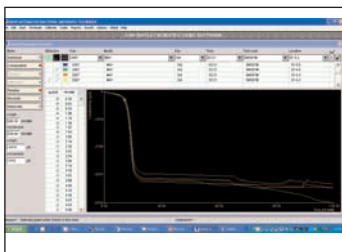
1. Sample preparation



2. One step sample inoculation



3. Place in RABIT



4. Results

RABIT for Windows™ is a compact and versatile system for rapid microbial testing. The modular design enables a laboratory to enter the field of rapid testing with an initial system which comprises a PC fitted with a special data logging facility and a single 32 channel incubator module.

The system can be expanded to provide a total of 512 channels by adding more incubator modules. No further expenditure on computer hardware or software is necessary.

The system is designed to allow tests to be carried out over a range of incubation temperatures to provide maximum flexibility for microbiological testing.

The Windows™-based software provides an easy to operate environment for sample entry and analysis of results. The impressive data handling capabilities are further enhanced by a facility to export generated data for use in various spreadsheet/database software programmes.

RABIT combines high technical specifications with low consumable costs – preserving the major financial advantage of rapid microbial detection. The test cells are durable, re-usable and easy to clean and maintain.

Laboratories in the food, pharmaceutical, petrochemical, public health and dairy industries, in addition to many universities, are using RABIT with excellent results. All Don Whitley Scientific customers have access to our team of engineering, electronics, software and microbiology staff. Any special needs are considered by microbiologists working in our own GLP-compliant laboratories.

Should any development work be necessary to match a RABIT system to your requirements this can be carried out quickly to ensure that you benefit from our considerable experience of impedance microbiology.

RABIT features

- Flexible modular design
- Fast detection times
- Increased test throughput
- Simple to use
- Re-usable test cell
- Low cost per test
- Direct and indirect techniques
- Variable sample volume
- Access to culture during tests
- Optional extras include racks to house incubator modules and bar code readers to speed up sample entry.

don whitley scientific

Methods used in RABIT - Direct

Direct Impedance Technique

- Electrodes in direct contact with the growth medium and sample
- Metabolising micro-organisms increases the electrical conductance of the culture medium in the system
- These changes are detected by the software and plotted on a graph


Direct Impedance Technique

don whitley scientific

Methods used in RABIT - Direct

Indirect Impedance Technique

- The sample is contained in a glass tube, separated from the electrodes
- This method detects carbon dioxide produced by growing bacteria & fungi. This is converted to a conductivity reading
- The indirect method is suitable for detecting organisms such as yeast and moulds, which do not produce highly charged metabolites



Indirect Impedance Technique

don whitley scientific

Who are our potential customers?

- Quality assurance on
 - Raw materials (high counts)
 - Finished products (low counts)
 - Water testing
- Challenge testing / preserve efficacy (Bioburden)
- Product performance
- Antibacterial studies
- Screening of groups:

• TVC (Total viable counts)	• Anaerobes
• Coliforms	• Gram negatives
• Enterobacteriaceae	• Spore formers
• Salmonella sp	• Yeast and moulds

Applications

Standard Features

Up to the minute CPU with pre-loaded software and data-logging facility.
All necessary training will be provided by a DWS microbiologist.
Each CPU will control between 1 - 16 incubator modules.

Options

R01020 32 Channel Incubator Module

Accessories

R01052 Two Drawer Module Racking Unit for four RABIT Modules & CPU Module
Units may be linked either back-to-back or fixed to a load-bearing wall

Consumables

R00995 RABIT Impedance Cells (pack of 8)
G50001 Whitley Impedance Broth (500g)
G50003 Whitley Enterobacteriaceae Broth (500g)
G50004 Whitley Gram Negative Broth (500g)
G50006 Whitley Anaerobe Broth (500g)
G50007 Whitley MacConkey Broth (500g)
G50010 Wort Broth (500g)
G50011 Maximum Recovery Diluent (500g)
G50013 Buffered Peptone Water (500g)

Specification

R02000 RABIT for Windows™

Includes RABIT computer, keyboard and mouse, colour monitor, laser printer, one ream of white paper, 500g Whitley Impedance Broth and a comprehensive range of accessories including sufficient cleaning aids for the first year of use.

R01020 RABIT 32 Channel Incubator Module

Includes 96 x Impedance Cells, 2 x cell racks, 2 x tube baskets, 1000 x borosilicate tubes and 100 x pressure seal caps complete with silicone inserts for indirect method usage.

Dimensions of Incubator Module: 400mm x 600mm x 400mm (w x d x h)

Weight of Incubator Module: 35kg

Operating Temperature Range: 25°C to 45°C*

Power supply: 230V~ ± 10% - 50/60Hz **

Test Cell Volume: 2-10ml

* *Use of the equipment outside the normal operating temperature range is possible. Consult DWS Technical Department.*

** *Other voltages available on request.*

Windows is a registered trademark of Microsoft Corporation

In the interests of a policy of continuous product improvement the company reserves the right to alter product specifications without prior notice. All rights reserved.
© 2008 Don Whitley Scientific Limited.

Don Whitley Scientific Limited

14 Otley Road, Shipley, West Yorkshire, BD17 7SE, England.

Telephone: +44 (0)1274 595728 Fax: +44 (0)1274 531197

Website: www.dwsscientific.co.uk Email: info@dwsscientific.co.uk