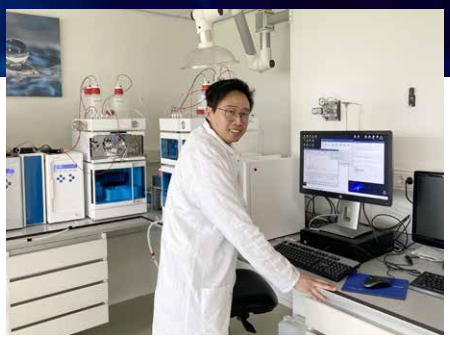
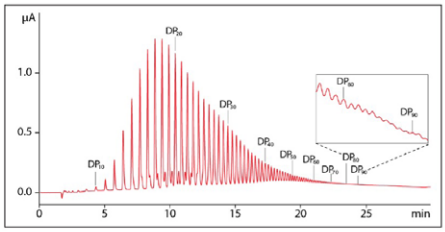




Corporate Capabilities

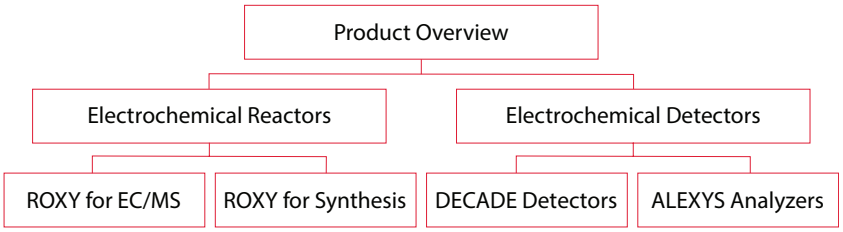
Electrochemistry for Liquid Chromatography & Mass Spectrometry



Antec® Scientific

Antec Scientific

For more than 35 years Antec Scientific has been the world's leading supplier of analytical instrumentation based on Electrochemistry (EC). Antec's line of instruments includes Electrochemical Detectors (ECD), analyzers built on High Performance Liquid Chromatography (HPLC) with ECD, and electrochemical reactors for use with Mass Spectrometry (EC/MS) and for electrochemical synthesis.



Electrochemical Detectors for HPLC

The DECADE™ line of ECDs (Elite™ and Lite™) has become the benchmark in detection and can be used with 3rd party HPLC systems such as: Agilent, Danaher, Thermo Fisher, Shimadzu and Waters. The detector is also available in different OEM versions. Specific IP protected flow cells are available to cover a broad range of applications from the analysis of antibiotics to sugars and pharmaceuticals.



DECADE Elite and Lite Electrochemical Detector with SenCell

Dedicated Analyzers

The ALEXYS™ Analyzers, based on HPLC or HPAEC with ECD, are turnkey instruments built for the highest performance and to ensure ease-of-use. Guaranteed applications have been developed for neurotransmitter analyses in brain microdialysates. Other application areas are clinical/diagnostic, food/beverage, environmental, and drug/pharmaceutical analyses.



ALEXYS Analyzer based on HPLC-ECD

Electrochemical Reactors for MS and Synthesis

With the ROXY™ Exceed system, REDOX reactions can be monitored directly by Mass Spectrometry (MS). The online coupling of electrochemical reactors with MS (EC/MS) is a promising new analytical technique with broad applications ranging from proteomics, drug metabolism to environmental degradation testing. Another application is in flow chemistry for the rapid synthesis of drugs, metabolites, and degradants.



Electrochemical reactors for on- and off-line EC/MS

R&D, Production, and Distribution

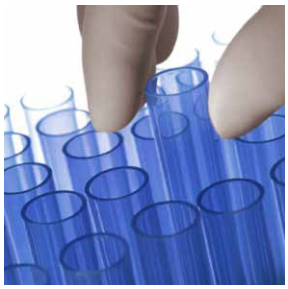
R&D and production facilities are located at the Antec Scientific headquarters in Alphen a/d Rijn, The Netherlands. These facilities focus on ongoing enhancement of EC instruments and applications, maintaining rigorous quality control guidelines. Antec Scientific (USA), a subsidiary based in Boston, MA, supplies products and services to both the North American and Canadian marketplaces. A robust distributor network represents Antec Scientific in the global markets.

Markets Served

Electrochemical Detectors and Analyzers (DECADE™ & ALEXYS™)



Neurotransmitter analysis
(brain microdialysates)



Clinical & Diagnostic analysis
(urine, plasma)



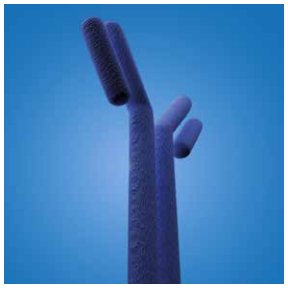
Food & Beverage
Carbos, Lactose free products



Pharmaceuticals, Antibiotics
conform USP and EP

The DECADE electrochemical detectors and the ALEXYS Analyzers are successfully used for analyzing neurotransmitters in brain microdialysates. Additional markets served include the clinical and diagnostic fields, focusing on the quantitative analysis of catecholamines in urine and plasma, as well as purity control of FDG radiotracers. For the sensitive analysis of carbohydrates in food and beverages, such as lactose testing in dairy products, high-performance anion exchange chromatography (HPAEC) with pulsed amperometric detection (PAD) is the preferred method. The quality control of pharmaceuticals, such as aminoglycoside and macrolide antibiotics, clozapine, olanzapine, and others, is another market served, meeting all regulatory requirements.

Electrochemical Reactors for MS (ROXY™ Exceed)



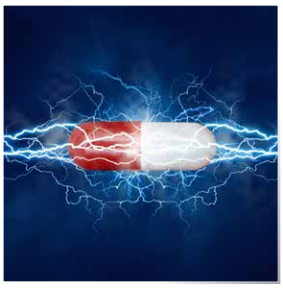
Reduction of disulfide bonds
biopharmaceuticals, mAbs



Rapid synthesis of of drugs,
metabolites



Fast mimicking of drug
metabolism (CYP 450)



Drug stability testing using
electrochemical degradation

The ROXY Exceed system proves successful in the MS proteomics market for superior characterization of immunotherapeutics (monoclonal antibodies, mAbs) and other biopharmaceuticals. In drug metabolism studies, EC/MS has been successfully applied for fast prediction and mimicking of drug metabolism (in-electro vs. in-vivo or in-vitro). Additional markets served include environmental degradation studies of drugs and pollutants or their persistence (POPs). Drug stability testing using electrochemical rather than forced chemical degradation (peroxide/radical initiators) is another emerging market in addition to the cost-effective electrochemical synthesis.

Corporate Capabilities

Patents and Trademarks

After earning numerous patents in the United States and Europe, with more patents pending, Antec Scientific continues to be a pioneering force in the fields of electrochemical detection and reaction. Our product names – DECADE, ALEXYS, ROXY, SenCell, SynthesisCell, and SweetSep – are registered trademarks of Antec Scientific.

History & Milestones

1990 Antec Leyden BV founded as spin-off of the University of Leiden, The Netherlands
1992 Introduction of the 1st generation DECADE electrochemical detector
1994 OEM with Thermo Scientific for EC2000 electrochemical detector
2002 OEM with Waters Inc. for WA2465 electrochemical detector
2005 Introduction of the ALEXYS Analyzers to assure successful use of LC-ECD with guaranteed application and ease-of-use
2008 Antec opens their offices in Boston, MA, USA, under the name Antec Scientific (USA)
2009 Introduction of the ROXY EC system at the 57th ASMS conference held in Philadelphia, USA.
2010 ROXY EC receives the prestigious Innovations Award at Analytica Munich, Germany
2015 Antec Scientific celebrates their 25th anniversary in the historic town of Zwolle, The Netherlands
2016 DECADE Elite the 4th generation of ECD detectors is introduced
2016 US Patent granted for SenCell, US 9310330 B2
2018 Carbohydrate analysis using HPAEC-PAD with DECADE Elite (lactose intolerance, FDG)
2018 Use of ROXY Exceed for electrochemical synthesis of metabolite of new antimalarial drug Cipargamin at Novartis
2019 DECADE Elite software drivers for OpenLab CDS (Agilent) and Chromeleon (Thermo Fisher)
2020 Software drivers for ChemStation (Agilent) and Empower (Waters Corp.)
2021 Launch of ALEXYS Carbohydrate Analyzer
2022 Move to new and larger headquarters in Alphen a/d Rijn (The Netherlands)
2023 Introduction of SweetSep HPAEC columns for the fast and superior separation of carbohydrates at HPLC 2023, Düsseldorf, Germany
2024 Successful use of the ALEXYS Carbohydrate Analyzer for neutral sugars and uronic acids analysis in biomass samples
2025 Extension of SweetSep column line with new chemistries (AEX20) and new geometries (IDs and lengths)
2026 Introduction of high-throughput ALEXYS Carbohydrate Analyzer and high-resolution 30 cm SweetSep columns

References



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