

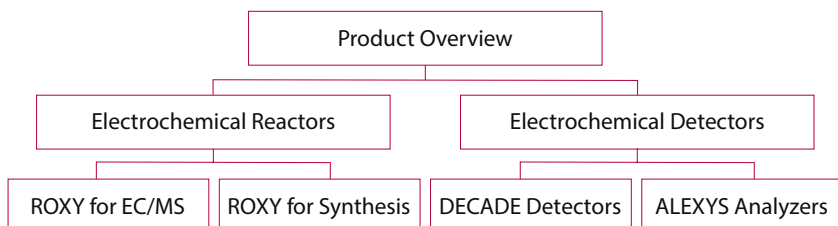
# Corporate Capabilities

Electrochemistry for  
Liquid Chromatography & Mass Spectrometry



# Antec Scientific

For over 31 years Antec Scientific has been the world's leading supplier of analytical instrumentation based on Electrochemistry (EC). Antec's line of instruments include 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 3<sup>rd</sup> party HPLC systems such as: Agilent, Danaher, Thermo Fisher, Shimadzu and Waters. The detector is also available in different OEM versions. Specific IP protected flowcells 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 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 in 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 on-line 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 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 housed in the Antec Scientific headquarters located in Zoeterwoude, The Netherlands. These facilities are dedicated to the continuous development of EC instruments and applications and ensure stringent quality control guidelines. Antec Scientific (USA), a subsidiary located in Boston, MA, provides products and services to both the North American and Canadian marketplaces. A strong distributor network represents Antec Scientific in the global markets.

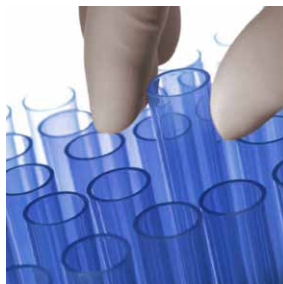
## Markets Served

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### ■ Electrochemical Detectors and Analyzers (DECADE™ & ALEXYS™)



Neurotransmitter analysis  
(brain microdialysates)



Clinical & Diagnostic analysis  
(urine, plasma)



Food & Beverage  
Carbos, Lactose free products

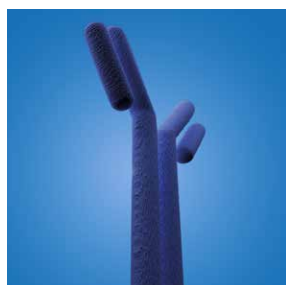


Pharmaceuticals, Antibiotics  
conform USP and EP

The DECADE electrochemical detectors and the ALEXYS Analyzers are successfully used for the analysis of neurotransmitters in brain microdialysates. Additional markets served are in the clinical/diagnostic area and for the quantitative analysis of catecholamines in urine and plasma, or for impurity control of FDG radiotracers. For the sensitive analysis of carbohydrates in food, beverages, or lactose intolerance, etc., high-performance anion exchange chromatography (HPAEC) with pulsed amperometric detection (PAD) is the technique of choice. The QC of pharmaceuticals, e.g., aminoglycoside and macrolide antibiotics, clozapine, olanzapine, etc., is another market served, satisfying all the regulatory requirements.

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### ■ Electrochemical Reactors for MS (ROXY™ Exceed)



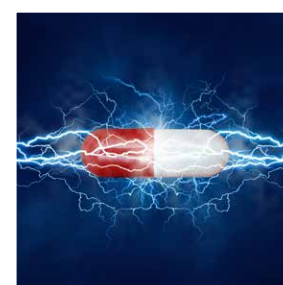
Reduction of disulfide bonds  
biopharmaceuticals, mAbs



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 applied successfully for fast prediction and mimicking of drug metabolism (in-electro vs. in-vivo or in-vitro). Additional markets served are in environmental degradation studies of drugs and pollutants or their persistence (POPs). Drug stability testing by 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

Awarded several patents in both the United States and Europe and with patents pending, Antec Scientific continues to be a ground breaking force in the fields of electrochemical detection and reaction. Our product names, DECADE™, ALEXYS™, ROXY™, SenCell™, SynthesisCell™, are official 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 1<sup>st</sup> 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 57<sup>th</sup> ASMS conference held in Philadelphia, USA.
- 2010** ROXY EC receives the prestigious Innovations Award at Analytica Munich, Germany
- 2015** Antec Scientific celebrates their 25<sup>th</sup> anniversary in the historic town of Zwolle, The Netherlands
- 2016** DECADE Elite the 4<sup>th</sup> 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

## References



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