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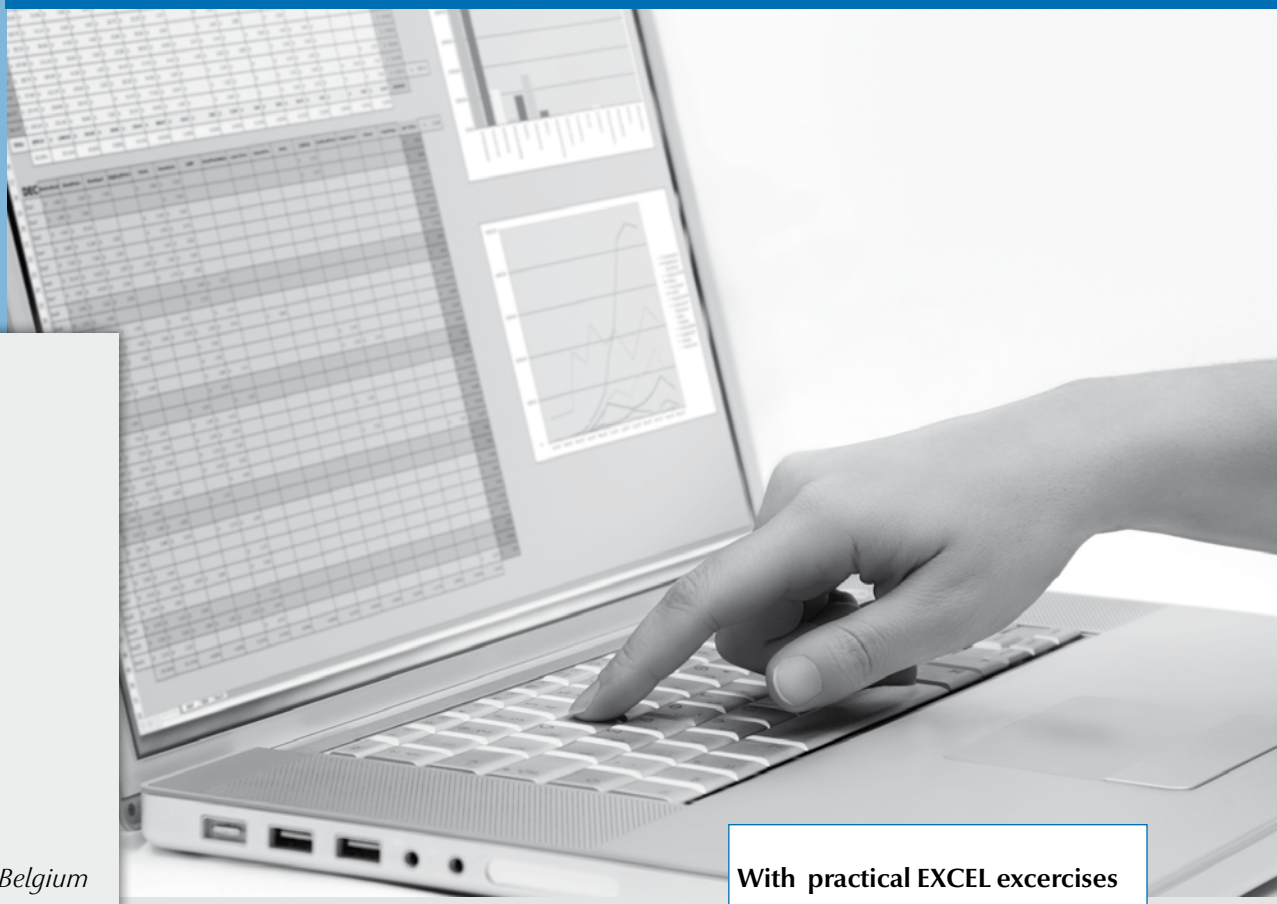
# Analytical Methods for Cleaning Validation

## Development, Validation & Control



SPEAKERS:

**Dr Raphael Bar**
*BR Consulting, Israel*

**Walid El Azab**
*STERIS Cooperation, Belgium*

**With practical EXCEL excercises**

10/11 September 2019, Heidelberg, Germany

PROGRAMME:

- Cleaning Method Characteristics
- Calculation of MAC
- Sampling Techniques of Cleaning Residues
- Method Validation for Cleaning Residues
- Documentation of Method Validation

This education course is recognised for the ECA GMP Certification Programme „Certified Quality Control Manager".
Please find details at www.gmp-certification.eu

# Analytical Methods for Cleaning Validation

10/11 September 2019, Heidelberg, Germany

## Objectives

This course consists of two parts.

The **first part** revolves around the development of suitable analytical methods. The characteristics of these methods (HPLC, HPTLC, TOC, conductometry, pH, total protein, visual inspection etc...) will be discussed in the light of their capability of detection and quantitation of residues. In particular, the advantages of the TOC method in accurately detecting and quantifying low levels of non-specific residues (such as detergents, drug excipients and active ingredients) which may not be determined by HPLC, will be highlighted. Prior to this, setting Maximal Carry Over (MAC) limits according to PIC/S, FDA and WHO guides will be presented along with the new EMA approach based on toxicity thresholds. Finally, a pre-requisite requirement for a well-developed method is an efficient recovery and therefore, the first part of the course will highlight the various techniques of sample recovery.

The **second part** of the course will address a systematic validation of the analytical method for cleaning residues. Performance characteristics of the analytical method will be systematically presented, discussed in parallel to guided calculations of examples with Excel.

## Background

Initiating the manufacturing of a pharmaceutical in shared equipment requires demonstrating that no cross-contamination from previous product takes place. Optimally, residues from a previously manufactured product or API or residues from the cleaning agent itself should be absent or very low. However, here lies the challenge facing an analytical chemist: the need to develop and validate an analytical method that is sensitive enough to detect and reliably quantify well recovered trace amounts of chemicals and practical enough to rapidly deliver results.

## Target Group

The addressees of the event are analytical chemists testing the residues, quality control personnel, quality assurance personnel, regulatory affairs professionals and validation personnel also involved in cleaning validation.

**The participants should bring a laptop with Excel.**

## Moderator

Dr Raphael Bar

## Programme

### Introduction

- Regulations (FDA, EU, PIC/S, APIC, WHO)
- Types of analytical methods
- Preparing a method to a validation process
- Life cycle approach to analytical methods
- Roadmap to development of analytical methods for cleaning residues

### Cleaning Method Characteristics

- Cleaning procedures in pharmaceutical processes
- Types of cleaning residues and their identification
- Development of method for cleaning residues
- Analytical methods for cleaning residues (HPLC, HPTLC, TOC, Conductometry, pH, total protein, visual inspection etc...)
- Testing methods for cleaning agents
- What should you know about a Cleaning Agent

### Sampling Techniques of Cleaning Residues

- Swab and Wipe Sampling
- Requirements from Swab
- Rinse Sampling
- Solvent Sampling
- Placebo Sampling
- Product Sampling
- Visual examination of cleaned equipment

### Calculation of Allowable Carryover (MAC)

- Common MAC limits (PIC/S, FDA and WHO guides)
- New approach of EMA guide (NOAEL and PDE)
- Residues limits on swab and rinse samples and in analytical samples
- Formulas for calculating MAC

### Workshop

- Exercises in calculations of API or drug product residues
- Exercises in calculations of cleaning agent residues

### Specifity of measurement method

- Interference with excipient residues, degradation product, and cleaning residue
- Interference with swab extractables
- Interferences in analytical samples
- Quantitative aspect of specificity

### Accuracy (incl. exercises with Excel)
- Swab Recovery Studies on coupons
- Rinse Recovery Studies on coupons
- Solvent Sampling from hoses
- Accuracy of the Measurement Method

### Precision of measurement method (incl. exercises with Excel)
- Method Repeatability
- Intermediate Precision
- Combined analysis of *Repeatability/Intermediate Precision* with One-way ANOVA

### Detection and Quantitation Limits of measurement methods (incl. exercises with Excel)
- By ICH, EP and USP methods
  - Of TOC method
  - Of HPLC method
- Visual detection Limit (VDL)

### Linearity of measurement method (incl. exercises with Excel)
- ICH requirements (Correlation coefficient, residual SS, residuals plot)
- Considerations (number of data points, of repeats, quality of fit to linearity, etc..)
- Analysis of plot of measured vs. actual concentrations
- Correlation between Cleaning Validation and Monitoring: Relative TOC response factor of Target Residue/ Reference Standard in TOC method

### Range
- Range on swab and rinse samples
- Range of analytical samples

### Robustness
- Robustness factors for sampling recovery
- Robustness factors for measurement method
- by DOE matrix Solvent Sampling from hoses

### Documentation of method validation
- Writing a protocol
- Writing a report

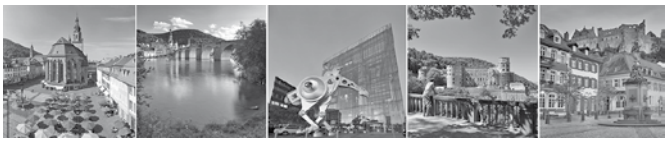
## Speakers

**Dr Raphael Bar**
*BR Consulting, Israel*
Dr Bar headed the Analytical R&D Laboratories at Teva Pharmaceuticals and the analytical QC Laboratory at Pharmos. For the last ten years, Raphael Bar has been a pharmaceutical consultant for the Pharma and Bio-Pharma industries.

**Walid El Azab**
*STERIS Cooperation, Belgium*
*Technical Service Manager for the Life Science Division*
Walid El Azab is an Industrial pharmacist, a Qualified Person and Lean Six Sigma green belt. He provides technical support related to cleaning, disinfectants and sterility assurance

## Social Event

In the evening of the first course day, you are cordially invited to a social event. This is an excellent opportunity to share your experiences with colleagues from other companies in a relaxed atmosphere.



## Heidelberg – Optimal Accessibility via Frankfurt

As one of the most beautiful cities in Europe, Heidelberg is at first sight an interesting venue – but is it also easily accessible? The answer is: Yes! The connection to Frankfurt Airport is convenient and fast. Next to London, Frankfurt Airport offers the most frequent air connections in Europe. It takes only about 45 minutes to get from Frankfurt to Heidelberg.

TLS: http://www.tls-heidelberg.de
Lufthansa Bus: http://www.transcontinental-group.com/en/frankfurt-airport-shuttles
PMJ: http://www.pmj-fahrservice.de
Train: You can get on the train directly at the airport. Trains leave up to two times per hour and it takes less than one hour to get to Heidelberg. http://www.bahn.de

## Easy Registration

**Reservation Form:**
**CONCEPT HEIDELBERG**
**P.O. Box 10 17 64**
**69007 Heidelberg**
**Germany**

**Reservation Form:**
**+ 49 6221 84 44 34**

**e-mail:**
**info@concept-heidelberg.de**

**Internet:**
**www.gmp-compliance.org**

If the bill-to-address deviates from the specifications on the right, please fill out here:

Reservation Form (Please complete in full)

**Analytical Methods for Cleaning Validation**
10/11 September 2019, Heidelberg, Germany

☐ Mr. ☐ Ms.

Title, first name, surname

Company | Department

Important: Please indicate your company's VAT ID Number | Purchase Order No, if applicable

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P.O. Box 101764
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D-69007 Heidelberg
GERMANY

**General terms and conditions**
If you cannot attend the conference you have two options:
1. We are happy to welcome a substitute colleague at any time.
2. If you have to cancel entirely we must charge the following processing fees: Cancellation
- until 2 weeks prior to the conference 10 %
- until 1 weeks prior to the conference 50 %
- within 1 week prior to the conference 100 %.

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**Terms of payment:** Payable without deductions within 10 days after receipt of invoice.
**Important:** This is a binding registration and above fees are due in case of cancellation or non-appearance. If you cannot take part, you have to inform us in writing. The cancellation fee will then be calculated according to the point of time at which we receive your message. In case you do not appear at the event without having informed us, you will have to pay the full registration fee, even if you have not made the payment yet. Only after we have received your payment, you are entitled to participate in the conference (receipt of payment will not be confirmed)! (As of January 2012)

German law shall apply. Court of jurisdiction is Heidelberg.

**Privacy Policy:** By registering for this event, I accept the processing of my Personal Data. Concept Heidelberg will use my data for the processing of this order, for which I hereby declare to agree that my personal data is stored and processed. Concept Heidelberg will only send me information in relation with this order or similar ones. My personal data will not be disclosed to third parties (see also the privacy policy at http://www.gmp-compliance.org/eca_privacy.html). I note that I can ask for the modification, correction or deletion of my data at any time via the contact form on this website.

### Date

Tuesday, 10 September 2019, 09.00 - 17.45 h
(Registration and coffee 08.30 – 09.00 h)
Wednesday, 11 September 2019, 08.30 – 16.30 h

### Venue

Hotel Chester Heidelberg
SRH Hotel Handels- und Betriebs GmbH
Bonhoefferstraße 10
69123 Heidelberg, Germany
Phone +49(0)6221 9983 700
Email reservations@chester-heidelberg.de

### Fees (per delegate plus VAT)

ECA Members € 1,590
APIC Members € 1,690
Non-ECA Members € 1,790
EU GMP Inspectorates € 895
The conference fee is payable in advance after receipt of invoice and includes conference documentation, dinner on the first day, lunch on both days and all refreshments. VAT is reclaimable.

### Accommodation

CONCEPT HEIDELBERG has reserved a limited number of rooms in the conference hotel. You will receive a room reservation form/POG when you have registered for the event. Reservation should be made directly with the hotel. Early reservation is recommended.

### Conference language

The official conference language will be English.

### Organisation and Contact

ECA has entrusted Concept Heidelberg with the organisation of this event.

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**For questions regarding content please contact:**
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**For questions regarding reservation, hotel, organisation etc. please contact:**
Ms Isabell Neureuther (Organisation Manager) at +49-62 21 / 84 44 49 , or per e-mail at neureuther@concept-heidelberg.de.