

# Scaling from Milligrams to 1-2kg: Making the first GMP batch

18 - 19 April 2012

Hotel Bloom!, Brussels, Belgium



“The presentations were clear, direct and very informative. The group sessions were a great way to exchange experiences with other chemists. Great value overall.”

OSI Pharmaceuticals

## PROFESSIONAL DEVELOPMENT TRAINING

Scientific Update provides training courses for industrial chemists and chemical engineers in chemical development and scale-up and many other specialist topics in organic and process chemistry.

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## Introduction

The aim of the course is to provide attendees with a good basis to work from when involved in taking development candidates to the first in human trials with a view also on some longer-term requirements.

The course content will therefore focus on the necessary early phases of chemical development as would typically be required to support production of up to about 2kg using laboratory-based 20L glassware and pilot plant equipment.

The course will introduce and discuss the following:

- Requirements in order to move from small (<1g) supplies to the first 100g or so for preclinical work
- Further scaling to 1-2kgs non-cGMP
- Requirements to make material for use in clinical trial – an introduction to cGMP coupled with the scaling issues
- An overview of the requirements to move processes to fixed vessels, assuming cGMP is required – what operations can readily be transferred and those that should ideally be developed out
- The phases of development and indicative timelines
- The importance of physical form selection, understanding and control
- Impurities and their control, with specific discussion on genotoxic impurities and developing the specification for the API as it moves from preclinical batch preparation to cGMP batches for clinical trials

## Course Outline

### Day One

#### Session 1

Introduction to typical pharmaceutical development activities and timeframes for toxicological studies.

#### Session 2

Making the first 100g non-GMP batch for GLP toxicological studies; discussion of topics such as setting the specification, the use of chromatography, accessing starting materials, identifying how much development to do.

#### Session 3

Non-GMP vs GMP preparation. A brief introduction to GMPs and how they impact on the initial chemistry scaling exercise.

#### Session 4

Physical version and form, spending time on the importance of salt selection, especially in the early phases of development with form/polymorph considerations also being discussed. There will be a brief introduction of polymorphism and which aspects of physical form should ideally be established at the early phase of development.

#### Session 5

Process safety and raw materials supply issues and how these might impact on the chosen route.

#### Session 6

Review of the day and questions.

### Day Two

#### Session 7

Scaling into fixed vessels with discussions about those operations that transfer well and those which typically do not.

#### Session 8

Technology transfer and a discussion of the issues and suggestions to mitigate against them.

#### Session 9

A presentation about genotoxic impurities – what are they, what are the suggested control levels, how well do chemists identify them?

#### Session 10

A presentation about impurities, including their identification, isolation/preparation and control with discussions about setting specifications

#### Session 11

The final session of the course will review the two days considering the development timeframes and follow-up on any questions.

**Case Studies and Problem sessions** will also be included throughout the course.

## Venue

### The Hotel Bloom

Rue Royale 250  
B-1210 Brussels  
Belgium  
Telephone: +32 2 220 66 11 info@hotelbloom.com www.hotelbloom.com

Accommodation has been reserved at the special rate of €179 for single occupancy (including taxes and breakfast). Please note that City tax of €5.95 per day per room is not included.

Further details for reserving accommodation will be sent to you when you register.

Register for this course by using the form overleaf or call:

## Course Tutor



**John Knight** gained a first class honours degree in chemistry at the University of Southampton, UK. John remained at Southampton to

study for his PhD in synthetic methodology utilizing radical cyclisation and dipolar cycloaddition chemistry. After gaining his PhD, John moved to Columbia University, New York, USA where he worked as a NATO Postdoctoral Fellow with Professor Gilbert Stork. John returned to the UK in 1987 joining Glaxo Group Research (now GSK) as a medicinal chemist, where he remained for 4 years before moving to the process research and development department at Glaxo, where he remained for a further 3½ years. During his time at Glaxo, John worked on a number of projects and gained considerable plant experience (pilot and manufacturing). In 1994 John moved to Oxford Asymmetry (later changing its name to Evotec and most recently to Aptuit) when it had just 25 staff. John's major role when first at Oxford Asymmetry was to work with a consultant project manager to design, build and

commission a small pilot plant, whilst in parallel developing the chemistry PRD effort at Oxford Asymmetry. The plant was fully operational within 18 months, operating to a 24h/7d shift pattern. John continued to run the pilot plant for a further 3 years, during which time he had considerable input into the design of a second plant, which was completed and commissioned in 2000. After an 18-month period at a small pharmaceutical company, John returned to Oxford in 2000 (by now called Evotec) to head the PRD department. John remained in this position for 6.5 years, during which time he assisted in its expansion, established a team to perform polymorph and salt screening studies and established and maintained high standards of development expertise across the department. John has managed the chemical development and transfer of numerous NCE's into the plant for clients and been involved in process validations. He joined Scientific Update in January 2008 as Scientific Director.

John Knight can be contacted by email at:  
[john@scientificupdate.co.uk](mailto:john@scientificupdate.co.uk)

## Who Should Attend?

**Project managers** and those involved in technical outsourcing

**Project leaders** and **bench chemists** involved in preparation of material

**New starters** to the area

**Medicinal Chemistry support teams** involved in making the first batches for toxicological evaluation

## During the course, the lessons and the key learning opportunities are considered to be

- **How long** does it take to get from milligrams to 1–2kgs suitable for human clinical trials?
- **What** are the main hurdles?
- **What** can be left out and what must be included?
- **What** are the key project management considerations?

## Fee & General Information

£1075.00

Includes lunch & refreshments, course dinner and comprehensive course manual.

The course begins with registration at 8.45am on Wednesday 18 April and finishes at approximately 4.30pm on Thursday 19 April.



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Please register  attendee(s) @ £1075.00

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Job Title	
Name	
Surname	
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