Graduate Certificate in Pharmaceutical Regulation

Chemistry, Manufacturing and Controls (CMC) Workshop

Grand Copthorne Waterfront Hotel

18 - 22 March 2019

Day 1 – 18 March, Mon

	Topic	Speaker/ Organisation
8.30am	Registration	
9.00am	Welcome message for the Graduate Certificate Programme	**Prof John Lim** Executive Director Centre of Regulatory Excellence (CoRE) Duke-NUS Medical School
9.15am	Briefing of workshop	**Asst Prof James Leong** Head Pharmaceutical Regulatory Science Programme, CoRE Duke-NUS Medical School
9.30am	Overview of CMC for medical products • Scope of coverage • Product lifecycle management • ICH guidelines on CMC • Format of regulatory submission for pre-market approval: - ICH Common Technical Dossier (CTD) module 3 and ASEAN CTD (ACTD) part II - Drug Master File (DMF) - Certificate of Suitability (CEP)	**Dr Lim Sok Bee** Senior Associate CoRE Duke-NUS Medical School
10.30am	**Break**	
Session 1: CMC Requirements for Pre-market Regulatory Controls – Part I		
11.00am	**Quality control for small molecule pharmaceutical: Purity of drug substance (DS) and drug product (DP)** • Concerns during manufacturing, batch release and/or stability testing ○ Degradation products ○ Process-related impurities ○ Residual solvents ○ Mutagenic impurities	**Dr Lim Sok Bee** CoRE
12.00pm	**Lunch**	
1.00pm	**Quality control for biotherapeutic ICH Q5A viral safety** • Analysis of expression construct and cell bank system • Viral safety evaluation	**Dr Rachel Specht** Scientist Genentech, a member of the Roche Group
2.00pm	Practicum I: Group discussion • Identify the impurities to be monitored in a DS and their acceptable limits.	**Dr Rachel Specht** Roche

	• Identify the potential gaps where additional data may be required.	
3.00pm	**Break**	
3.30pm	Practicum I: Group discussion (continuation)	**Dr Rachel Specht** Roche
5.30pm	**End**	

Day 2 – 19 March, Tue

	Topic	Speaker/ Organisation
8.30am	Individual and group assessment I	
Session 1: CMC Requirements for Pre-market Regulatory Controls – Part II		
9.30am	**ICH Q3D elemental impurities** • Elements to be considered in a risk assessment of small molecule and biologic products • Determination of PDE for the common administration routes, including administration routes not established in ICH Q3D	**Dr Bruno Rubrecht** Head Product Quality Strategy & Lifecycle - Incoming Materials/Secondary GSK Vaccines
10.30am	**Break**	
11.00am	**Case discussion** • Identify the elemental impurities that should be considered in the risk assessment of a pharmaceutical product • Understand the different options for converting PDEs to concentration limits	**Dr Bruno Rubrecht** GSK Vaccines
12.00pm	**Quality control for small molecule pharmaceutical: Specifications for DS and DP** • General requirements • Dosage form or administration route specific requirements • The appropriate specifications limits • Role of Pharmacopoeias, as appropriate	**Dr Tony Jarman** Principal Evaluator Pharmaceutical Chemistry Section Scientific Evaluation Branch Therapeutic Goods Administration (TGA)
1.00pm	**Lunch**	
2.00pm	Quality control for biotherapeutic: Specifications for DS and DP • Requirements according to ICH Q6B • Analytical consideration	**Dr Wassim Nashabeh** Vice President Global Head Policy and International Operations Roche
3.00pm	**Break**	
3.30pm	Practicum II: Group discussion • Identify the critical specifications to be controlled in a DP • Determine the robustness of the scientific rationale for the proposed specification limits.	**Dr Wassim Nashabeh** Roche **Dr Tony Jarman** TGA
5.30pm	**End**	

Day 3 – 20 March, Wed

	Topic	Speaker/ Organisation
8.30am	Individual and group assessment II	
Session 1: CMC Requirements for Pre-market Regulatory Controls – Part III		
9.30am	**Stability requirements for DS and DP** • Minimum data requirements at regulatory submission and post-approval commitments • Bracketing and matricing • Extrapolation to extend retest period or shelf life • Zone IVb stability data for ASEAN regulatory submission, if applicable	**Ms Lim Bee Yee** Senior Principal Assistant Director New Drug Section National Pharmaceutical Regulatory Agency (NPRA)
10.30am	**Break**	
11.00am	**Case discussion** Country specific requirements on DP stability data when there are multiple DS and DP manufacturing sites.	**Ms Lim Bee Yee** NPRA **Dr Sannie Chong** Head APAC Technical Regulatory Policy Roche
12.00pm	Manufacturing process validation of DP • Compliance to cGMP requirement • Traditional versus continuous process validation • Continued process verification	**Dr Maria S. Bruno** Director Pharmaceutical Technology Operations MSD International GmbH
1.00pm	**Lunch**	
2.00pm	Quality control for excipients • Compendial versus in-house specifications • Animal-derived excipients with TSE/BSE concern • Additional consideration for functional excipients such as antimicrobial preservative, antioxidant and colouring agents.	**Dr Tony Jarman** TGA
3.00pm	**Break**	
3.30pm	Practicum III: Group discussion • Identify the critical manufacturing process parameters where process validation should be performed • Addressing the common deficiencies in a process validation report	**Dr Maria S. Bruno** MSD International GmbH
5.30pm	**End**	

Day 4 – 21 March, Thur

	Topic	Speaker/ Organisation
8.30am	Registration	
9.00am	Welcome message for the ICH sub-workshop	**Prof John Lim** Executive Director Centre of Regulatory Excellence (CoRE) Duke-NUS Medical School
Session 2: The New Quality Paradigm in CMC Regulation – Part I		
9.15am	**Pharmaceutical quality supported by concepts developed in ICH** • Background and scientific basis • Linkage between the guidelines	**Dr.-ing Stephan Roenninger** Director External Affairs Europe, International Quality Amgen
9.45am	**Understanding quality risk management as a behaviour** • Principles of quality risk management in ICH Q9 • Risk management tools • Potential applications	**Dr.-ing Stephan Roenninger** Amgen
10.45am	**Break**	
11.15am	**Implementation of a pharmaceutical quality system** • Principles and key aspects of ICH Q10 • Potential applications • Differences between a pharmaceutical quality system and a quality (management) system	**Dr.-ing Stephan Roenninger** Amgen
12.15pm	**Lunch and Photograph Taking**	
1.15pm	**Pharmaceutical development of DP *via* the quality-by-design (QbD) approach** • Principles and key aspects of ICH Q8 (annex) • Traditional *versus* enhanced approach in DP development • Real time release testing • Role of multivariate models in regulatory submissions	**Dr Sarah Pope Miksinski** Senior Director Global Regulatory Affairs AstraZeneca
2.15pm	**Panel Discussion** • Challenges in the implementation of ICH Q8/11, 9, and 10	**Moderator:** **Dr Moheb Nasr** Principal Nasr Pharma Regulatory Consulting (NPRC) Former Vice President CMC Strategy GlaxoSmithKline **Panelist:** **Dr Roger Nosal** Vice President Global Head CMC Pfizer

		Dr Sarah Pope Miksinski AstraZeneca **Dr.-ing Stephan Roenninger** Amgen **Dr Wassim Nashabeh** Roche
3.15pm	**Break**	
3.45pm	**Case discussion** • Identify the QbD approach in a DP pharmaceutical development process • Discuss the robustness of the data in supporting the proposed design space • Discuss the data required to support real time release testing of a DP	**Dr Moheb Nasr** NPRC **Dr Sarah Pope Miksinski** AstraZeneca
5.30pm	**End**	

Day 5 – 22 March, Fri

	Topic	Speaker/ Organisation
8.30am	Individual and group assessment III	
Session 2: The New Quality Paradigm in CMC Regulation – Part II		
9.30am	**Development and manufacture of DS *via* the QbD approach** • Principles and key aspects of ICH Q11 • Traditional *versus* enhanced approach to DS development	**Dr Roger Nosal** Pfizer
10.30am	**Break**	
Session 3: CMC Requirements for Post-market Quality Controls		
11.00am	**Post-approval CMC controls on marketed products** ○ Current *versus* ICH Q12 approaches ○ Key aspects of ICH Q12 and current progress ○ Identification of established conditions (ECs) and categorization of post-approval CMC changes ○ Management of post-approval changes associated with product or process CMC deviations.	**Dr Moheb Nasr** NPRC
12.30pm	**Lunch**	
1.30pm	Case discussion • Identify CMC changes that require prior approval, notification or no reporting is required	**Dr Moheb Nasr** NPRC
2.30pm	New trends in CMC development and manufacturing • Continuous manufacturing	**Dr Moheb Nasr** NPRC **Dr Wassim Nashabeh** Roche
3.45pm	**Break**	
4.15pm	Development of global regulatory submission strategies (focusing on emerging markets) for new drug products: CMC-related considerations. • Common areas of CMC concerns • CMC Regulatory trends – Emerging Markets •	**Mr Arun Mishra** Executive Vice President, Regulatory Affairs (Indian Sub Continent) GSK Consumer Healthcare Ltd
5.00pm	ICH Sub-workshop conclusion	**Prof John Lim** Executive Director, CoRE Duke-NUS Medical School
5.15pm	Graduate Certificate Programme conclusion	
5.30pm	**End**	