

# UPCM<sup>+</sup> PHARMACOLOGY

## REFERENCES

UPCM<sup>+</sup> Pharmacology covers Basic Principles of Pharmacodynamics and Pharmacokinetics. This is composed of **seven (7) modules and around thirty (30) hours of coursework** designed to introduce and facilitate understanding of important concepts in Pharmacology relevant to students of both medical and paramedical fields. The principles of how drug works and is handled by the body are presented using common drugs that students can also familiarize with. The course is composed of the following:

### OVERVIEW

*This module presents a brief overview of the objectives, scope, mode of teaching and evaluation of this course. It will also touch on definitions of pharmacology, its branches or fields, and the history of Pharmacology in the Philippines with special focus on the UP College of Medicine.*

### MODULE 1 INTRODUCTION TO PHARMACOLOGY

*This module discusses basic concepts about drugs, including different ways of naming, classifying, grouping, and administering them.*

### MODULE 2 MECHANISMS OF DRUG ACTION

*This module discusses the mechanisms of drug actions including both receptor-mediated and non-receptor mediated drug actions. Specific prototype drugs will be given per mechanism of drug action. Novel drug mechanisms will be discussed briefly in the end.*

### MODULE 3 PHARMACODYNAMICS

*This module talks about receptor-mediated action and effects of drugs on the body. This encompasses drug-receptor interaction, graded and quantal dose-response relationships, and important drug parameters derived from dose-response curves.*

### MODULE 4 PHARMACOKINETICS

*This module introduces the concept of pharmacokinetics, on how a drug reaches its target. This encompasses how a drug is absorbed, distributed, metabolized and excreted.*

### MODULE 5 PHARMACOGENETICS

*This short module discusses how genetics can alter the effects and disposition of drugs, and thus, response of the individual to drugs.*

### MODULE 6 DRUG TOXICITY AND ADVERSE DRUG REACTION

*This module describes adverse drug reaction and drug interaction, including definitions, classification, types, and mechanisms of action leading to toxicity or harmful effects.*

### MODULE 7 DRUG DISCOVERY AND DEVELOPMENT

*Drug discovery is a complex process, involving the fields of pharmacology, medicine and biotechnology, in order to identify compounds with the potential to become therapeutic agents.*

### WRAP-UP

*Summarizes what you have learned from the course and its relevance in the pharmacologic treatment of disease.*

The **references for the videos and script** used in UPCM<sup>+</sup> Pharmacology are as follows:

## **MAJOR REFERENCES:**

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2. Katzung BG, editor, *Basic and Clinical Pharmacology* 14<sup>th</sup> edition, 2018
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4. Rang HP, Dale MM, Ritter JM, et al. (eds). Panganiban LR et al (adapting eds.) *Pharmacology*, Philippine edition. Elsevier, Singapore, 2015.
5. Ritter J., Flower R., Henderson, G. Loke YK, Mac Ewan D, and Rang, H., 2018. *Rang and Dale's pharmacology* (9th edition). [Edinburgh etc.]: Elsevier, Churchill Livingstone.

## **ADDITIONAL REFERENCES:**

### **MODULE 4 PHARMACOKINETICS**

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### **MODULE 5 PHARMACOGENETICS**

1. Sy RG, Nevado JB, Llanes EJB, et al. The *Klotho* Variant rs 36217263 Is Associated with Poor Response to Cardioselective Beta-blocker Therapy Among Filipinos. *Clin Pharmacol Ther* 2020; 107(1): 221-226.
2. Ona DID, Nevado JB, Ramos JDA, et al. Variant rs6596140 of *Follistatin-like 4* Gene (*FSTL4*) May Be Associated with Poor Response to Angiotensin Receptor Blockers (ARBs) among Filipinos. *Phil J Sci*, 2021;150 (4):703-21.
3. Orrico, KB. Basic Concepts in Genetics and Pharmacogenomics for Pharmacists. *Drug Targets Insights*. 2019; 13:1-7 Basic Concepts in Genetics and Pharmacogenomics for Pharmacists
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<https://doi.org/10.2217/17410541.2.4.325>
7. Liao, J.K. 2007. Safety and efficacy of statins in Asians. *The American journal of cardiology*, 99(3), pp.410-414.c

## MODULE 6 DRUG TOXICITY AND ADVERSE DRUG REACTION

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2. Edwards IR, Aronson JK. (2000). Adverse drug reactions: definitions, diagnosis, and management. *Lancet*; 356:1255-59
3. Aronson, J.K., and Grahame-Smith, D.G. (1981). Adverse drug interactions. *British Medical Journal*; 282: 288-291.
4. Griffin JP, D'Arcy PF, Speirs CJ: A Manual of Adverse Drug Interactions, 4th edition. Butterworth and Company, Ltd., 1988.
5. World Health Organization (2002). Safety of Medicines A guide to detecting and reporting adverse drug reaction

## MODULE 7 DRUG DISCOVERY AND DEVELOPMENT

1. Richard C. Mohs, Nigel H. Greig, Drug discovery and development: Role of basic biological research, *Alzheimer's & Dementia: Translational Research & Clinical Interventions* 2017;3 (4): 51-657, ISSN 2352-8737, <https://doi.org/10.1016/j.trci.2017.10.005>.
2. Amol B Deore, Jayprabha R Dhumane and Rushikesh Wagh et al. The Stages of Drug Discovery and Development Process. *Asian J Pharm Res Dev*. 2019. Vol. 7(6):62-67. DOI: 10.22270/ajprd.v7i6.616
3. Blass, B. E. (2014). Drug Discovery and Development: An Overview of Modern Methods and Principles. *Basic Principles of Drug Discovery and Development*, 1-34.
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5. Chopra B, Dhingra AK. Natural products: A lead for drug discovery and development. *Phytother Res*. 2021 Sep;35(9):4660-4702. doi: 10.1002/ptr.7099. Epub 2021 Apr 13. PMID: 33847440.
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