

PHARMACODYNAMICS

6th lesson

Classroom worksheet

Mechanisms of drug effects – work with the ATC classification and online sources

1) open online <https://www.atccode.com/> the ATC classification of drugs and find the groups of **drugs for acid related disorders**

See the table below and find for each category of mechanism of action (MoA) an example of a specific drug and an approved product, read the SPC (<https://www.medicines.org.uk/emc>, <https://www.drugs.com/>, or other source) in detail and check the pharmacodynamic profile, prescribe one product of your choice

	specific receptor-mediated	specific non-receptor-mediated	nonspecific
MoA			
drug			
product			

2) **Anti-allergy drugs** – choose products containing **ketotifen, cetirizine and levocetirizine** within the ATC group of antihistamines for systemic use

See the table below and compare pharmacodynamic profiles of these 3 drugs, find an example of an approved product for all and prescribe one product of your choice

	ketotifen	cetirizine	levocetirizine
MoA			
product			

What is the exact pharmacodynamic effect of H1-antihistamines?

3) Anodynes – identify the mechanism of action of drugs listed in the group of analgesic drugs, which is listed under opioid drugs

a) Assign the following opioid analgesics depending on their receptor interactions into categories listed in the following table:

buprenorphine, fentanyl, nalbuphine, naloxone

full agonist (μ)	partial agonist (μ)	κ agonist and μ antagonist	antagonist (μ)

Note: do not search mechanism of action among combined medical products.

b) List drugs, which require the blue strip prescription:

c) Prescribe morphine in tablets:

4) NSAIDs - identify the mechanism of action of drugs listed in the group of other analgesics and antipyretics

a) Assign the following drugs into categories listed in the following table depending on their selectivity towards cyclooxygenase 1 and 2 (COX)

- **celecoxib, ibuprofen, acetylsalicylic acid, nimesulide**

	irreversible non-selective COX inhibitor	non-selective / non-specific COX 1 and 2 inhibitor	preferential COX 2 inhibitor	selective / specific COX 2 inhibitors
Substance				
Example of RMP				

Note: do not search mechanism of action among combined medical products.

b) Prescribe ASA indicated for its anti-platelet effects and explain its MoA:

5) Beta-blockers – identify the mechanism of action of drugs listed in the group of beta blocking agents

a) Assign the following drugs into categories listed in the following table depending on their receptor affinity and intrinsic activity:

- acebutolol, carvedilol, metoprolol, sotalol

	non-selective β antagonist	selective β 1/ cardioselective antagonist (without ISA)	non-selective α and β antagonist	antagonist with intrinsic sympathomimetic activity (partial agonist)
Substance				
Example of RMP				

b)