

serotonin

5-hydroxytryptamin



Serotonin is 5-hydroxytryptamin

DISTRIBUTION:

1-G.I.T

2-BLOOD

3-CNS



PHARMACOLOGICAL EFFECTS

- ▶ G.I.T : regulate the peristalsis reflexes and colonic motility
- ▶ Located in enterochromaffin cells act as sensor transducer
- ▶ 10% of serotonin in intestine act as a neurotransmitter



Smooth muscles

Uterus and bronchial ▶
smooth muscles contracted
by the 5-hydroxytryptamin



Blood vessels

- ▶ Both arteries and veins are usually constricted by 5-HT
- ▶ Activation of 5-HT₁ receptors causes constriction of large intracranial vessels

platelets

- ▶ 5-HT release from platelets causes platelets aggregation by acting on receptor 5-HT_{2A} in addition to vasoconstriction effect.

Nerve ending

5-HT stimulate pain mediating ▶
sensory nerve ending by
acting on 5-HT₃ receptors .

Also 5-HT inhibit transmitter ▶
release from adrenergic
neurons.



CNS

- ▶ 5-HT excites some neurons and inhibit others ,it act presynaptically to inhibit release from nerve terminal.

Biosynthesis and metabolism

Tryptophan -----5-hydroxytryptophan

5-hydroxytryptophan -----5-HT

5-HT-----5-hydroxyindolacetic acid ▶



5-HT receptors and location

5-HT1A	CNS
5-HT1B	CNS+VASCULAR S.M
5-HT1D	CNS+B.V
5-T2A	CNS+PNS +PLATALETS +S.M
5-HT2B	GASTRIC FUNDUS

5-HT receptors and location

5-HT _{2C}	CNS
5-HT ₃	CNS + PNS
5-HT ₄	G.I.T + CNS
5-HT ₅	CNS
5-HT ₆	CNS
5-HT ₇	CNS + B.V + G.I.T

Serotonin agonist drugs

1-buspiron ▶

2-dexfenfluramin▶

3-sumatriptan,naratriptan,▶
rizatriptan and zolmitriptan▶

4-cisaprid and tegaserod▶



Serotonin antagonist drugs

1-cyproheptadine ▶

2-ketanserin and ritanserin

3-ondansetron ▶

,granisetron,and tropisetron

4-dihydroergotamin, ▶

methysergid



Ergot alkaloides

- 1 – ergotamin and ▶
dihydroergotamin
- 2 – ergometrin(ergonovin)▶
- 3 – methysergid▶
- 4 – bromocriptin▶



Drugs used in the prophylaxis of migraine

1- β -blockers drug ▶

Propranolol, metoprolol, atenolol ▶

2-tricyclic antidepressant ▶

Amitriptylin ▶

3-calcium channel blockers

Verapamil

4-antiepileptic drugs

divalproex

