

2. Mixed Target anti-epileptics - MOA: (1) Block Na⁺, (2) Ca²⁺, (3) NMDA channels, (4) Activate GABA channels

Valproate

USE: Partial, Generalized tonic-clonic, Absence Seizures, bipolar, Neuropathic pain
SE: Liver toxicity, pancreatitis, GI toxicity
CI: Pregnancy (teratogen) - neural tube defects

Topiramate

USE: Partial, tonic clonic seizures, Migraine
SE: Carbonic anhydrase inhibition, sedation, metal slowing, kidney stones, glaucoma (closed angle)
CI: Pregnancy - neural tube defects, CNS depressants

3. Ca²⁺/GABA drugs - MOA: Block Ca²⁺ Channels/ Increases GABA transmission/ Gabapentin

USE: Partial Seizures, diabetic/peripheral neuropathy, fibromyalgia, Herpetic Neuralgia
SE: Sedation, Preg Cat C

Pregabalin - Blockade of Ca²⁺ channels

USE: Neuropathic pain, postherpetic neuralgia, diabetic neuropathy
SE: Sedation, ataxia

Tiagabine - inhibits GABA reuptake/degradation

USE: Partial seizures
SE: sedation, Ataxia, Preg Cat C

4. Calcium channel blockers - MOA: Block T/N Thalamic Ca²⁺ channels

Ethosuximide

USE: DOC: Absence Seizures (3Hz spikes of EEG)
SE: GI toxicity, fatigue, Metal slowing, Stevens Johnson (First aid),
CI: pregnancy (teratogen)

5. Glycoprotein modulators - MOA: interact with SV2 vesicular proteins

Levetiracetam

Brivaracetam

USE: Partial, tonic-clonic seizures
SE: weakness, somnolence, personality changes (FA), Preg Cat C

6. K⁺ channel activators - MOA: Activate KCNQ K⁺ channels → hyperpolarize cells → ↓Neuronal Firing

Ezogabine

USE: Partial seizures
SE: Drowsiness, mental confusion, Skin pigmentation, Preg Cat C

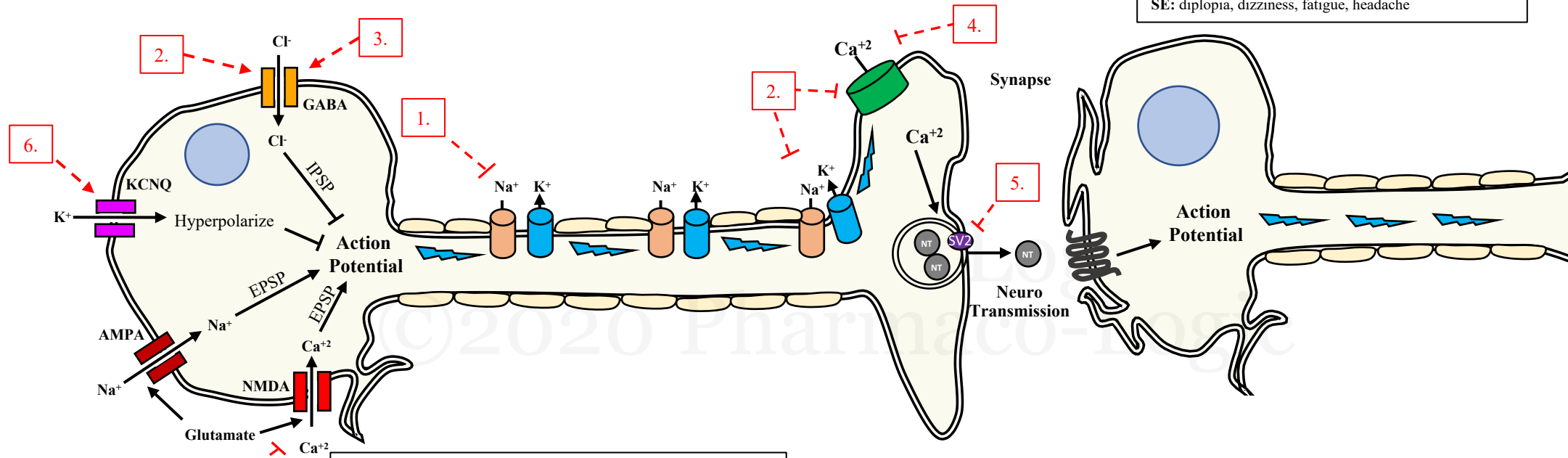
7. Misc. Anti-Epileptics - MOA: Unknown, block sodium, calcium channels

Cannabidiol

USE: Dravet syndrome, Tuberous sclerosis, Lennox-Gastaut syndrome
SE: Infections, reduced appetite, diarrhea, elevated liver enzymes

Rufinamide

USE: Lennox-Gastaut syndrome
SE: diplopia, dizziness, fatigue, headache



1. Sodium channel blockers

MOA: Selective blockade of Na⁺ channels → ↓Neuronal Firing

Phenytoin

USE: Partial, tonic-clonic seizures, Class 1b, trigeminal neuralgia
PK: Zero Order kinetics, CYP INDUCER
SE: CNS depression, diplopia, Ataxia, gingival hyperplasia, purple glove syndrome, folate deficiency, hirsutism, lupus (rare)
DDI: ↓efficacy of oral contraceptives, warfarin, Corticosteroids
↑efficacy of diazepam, valproate, alcohol
CI: Pregnancy-cleft palate, CNS depressants

Carbamazepine

USE: Partial, Tonic-clonic seizures, Bipolar, Trigeminal neuralgia
SE: CNS depression, SIADH, leukopenia, thrombocytopenia, anemia, aplastic anemia, Rash, photosensitivity, diplopia
CI: Pregnancy-neural tube defects, CNS depressants

Lamotrigine

USE: Partial, tonic-clonic, Absence seizures
SE: Stevens Johnson syndrome, diplopia

Seizure Type	Drug of Choice	Other drugs used
Partial	Carbamazepine	Gabapentin, Lamotrigine, Levetiracetam, Phenytoin, topiramate
Tonic Clonic	Phenytoin, Valproate	Carbamazepine, Lamotrigine, Levetiracetam, Topiramate
Absence	Ethosuxamide	Lamotrigine, Valproate
Status Epilepticus	Benzodiazepines	Phenytoin - prophylaxis