Galcanezumab (Emgality®)

Overview:
Galcanezumab is a humanized monoclonal antibody designed to target and neutralize calcitonin gene-related peptide (CGRP), a neuropeptide that plays a key role in migraine pathophysiology. It's FDA-approved as a preventive treatment for migraines and for the treatment of episodic cluster headaches in adults.

Mechanism of Action:
CGRP Neutralization:Galcanezumab binds specifically to the CGRP ligand, preventing it from interacting with the CGRP receptor on smooth muscle and nerve cells.
Vascular & Neurogenic Effects:
By blocking CGRP activity, it reduces vasodilation and neurogenic inflammation, key drivers of migraine attacks.

Physiological Functions in the Body:
Migraine Prevention: Decreases migraine frequency and severity by interrupting the CGRP pathway.

Vascular Stabilization: Reduces CGRP-mediated vasodilation of cerebral vessels.

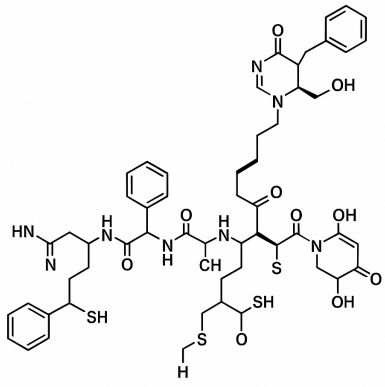
Pain Modulation: Lowers neuronal excitability and pain transmission involved in migraines.

Clinical Use:
FDA-Approved Indications:
Preventive treatment of migraine in adults
Treatment of episodic cluster headache in adults

Administration:
Subcutaneous injection, typically self-administered once monthly.

Dosing (FDA-Approved):
- Migraine Prevention:
  Loading dose: 240 mg (two consecutive 120 mg injections).
  Maintenance dose: 120 mg monthly.

- Cluster Headache:
  300 mg (three consecutive 100 mg injections) monthly during a cluster period.

Conclusion:
Galcanezumab is a targeted biologic therapy that neutralizes CGRP to prevent migraine and cluster headache attacks. Its monthly subcutaneous administration and proven efficacy make it a leading preventive option for patients suffering from these debilitating conditions.

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