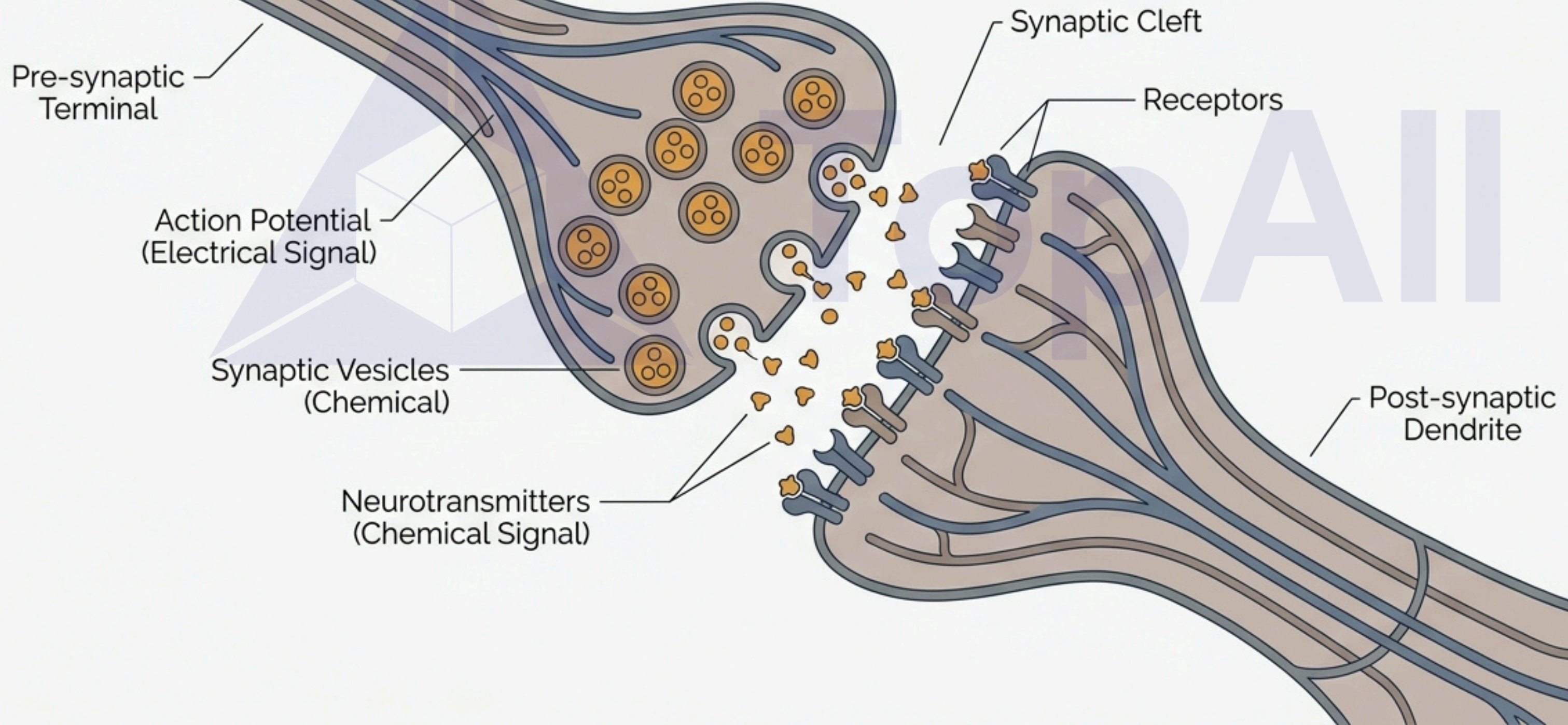


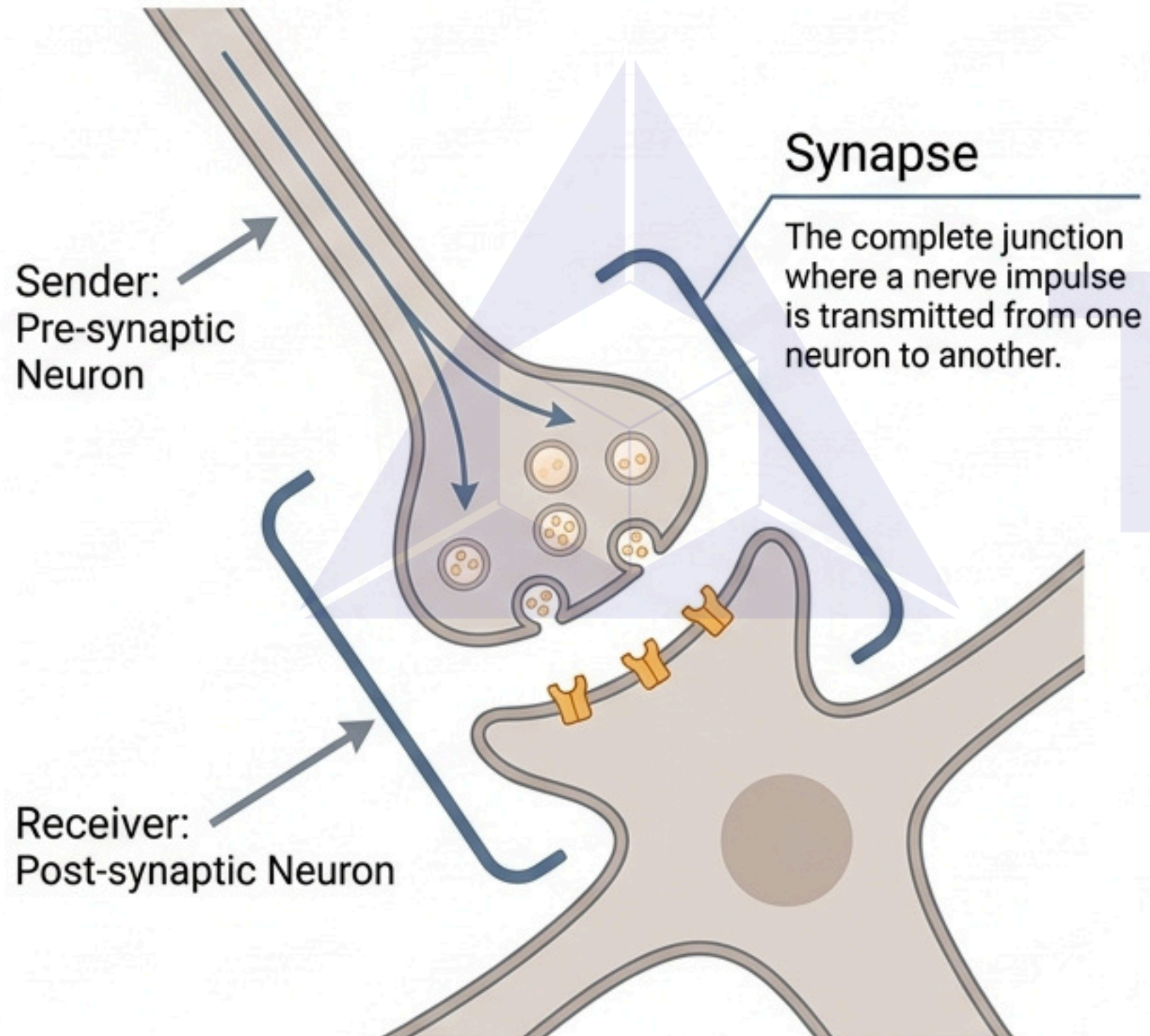
HOW ONE NEURON TALKS TO ANOTHER

The cellular mechanics of synaptic transmission.

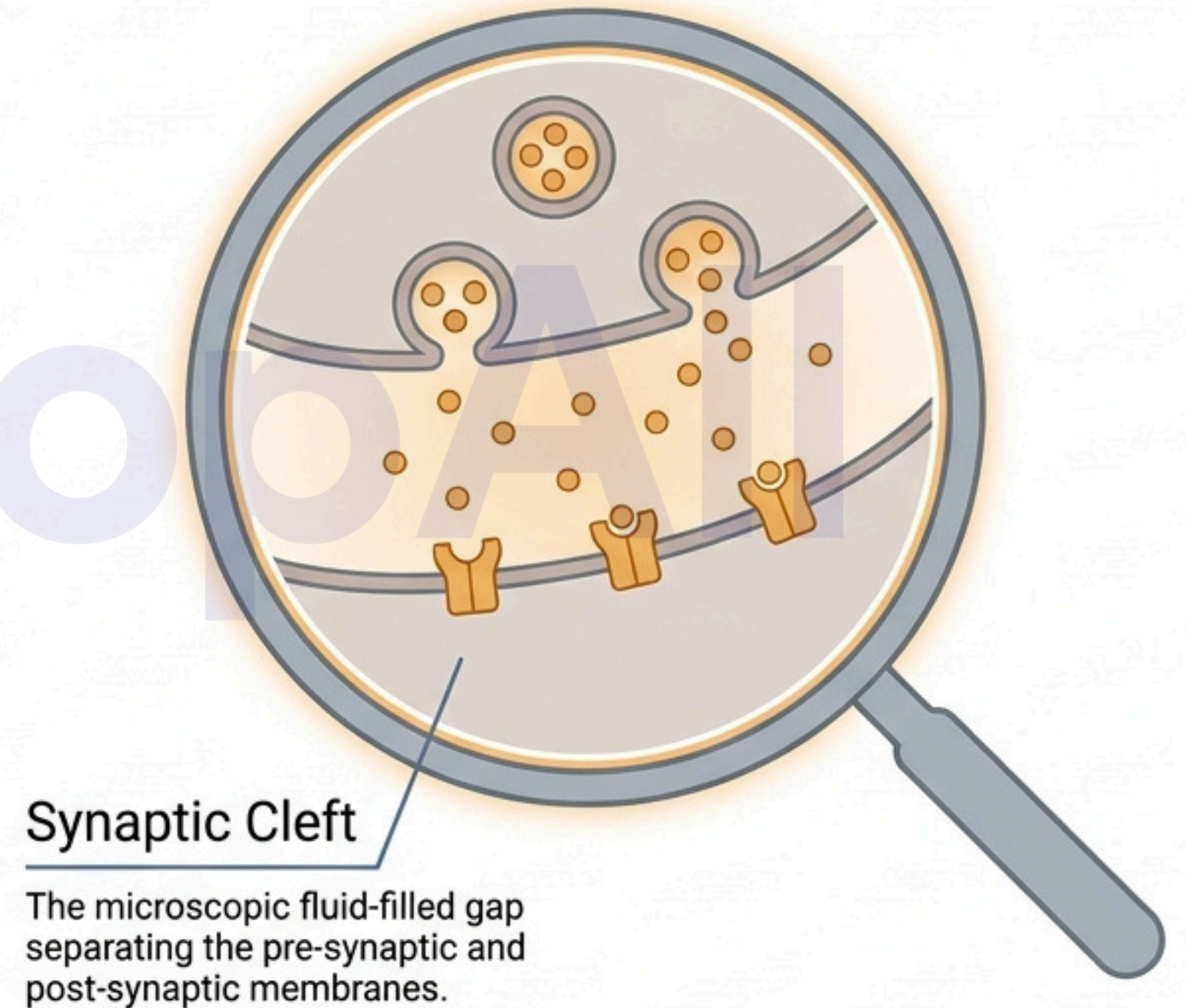


Mapping the Connection

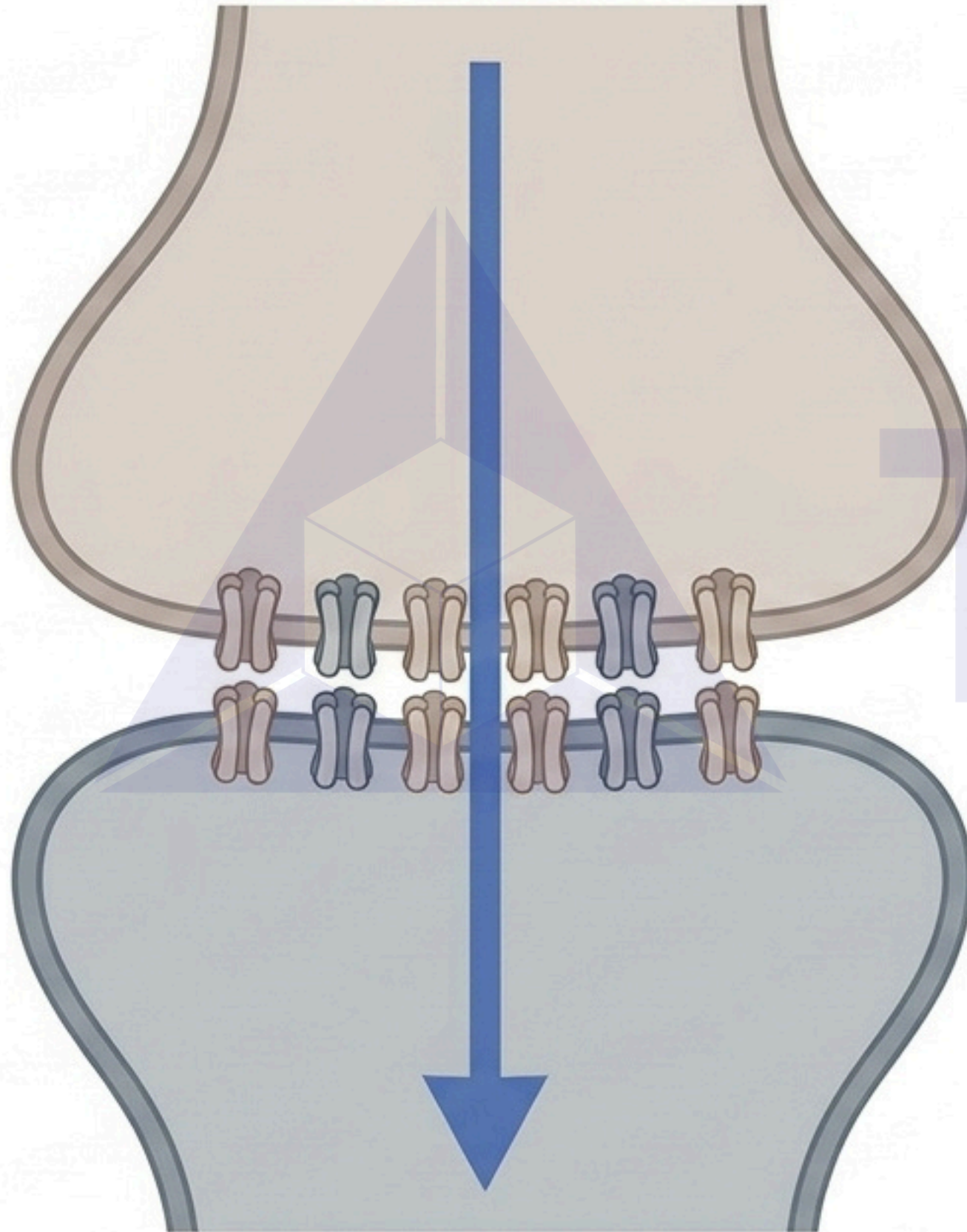
THE MACRO VIEW



THE MICRO VIEW



Method 1: The Electrical Synapse



The High-Speed Direct Line

- **Proximity:** Membranes are in very close physical proximity.
- **Signal:** Electrical current flows directly from one neuron into the next.
- **Speed:** Instantaneous conduction (faster than chemical transmission).
- **Abundance:** Highly specialized but rare in the human neural system.



You've Learned the Theory. Let's Test Them Now.

$$E=mc^2$$



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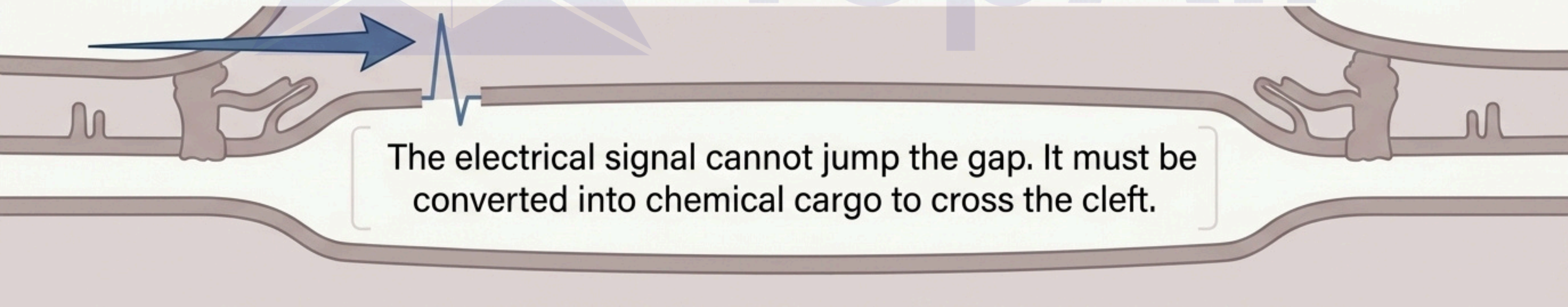
Key Highlights

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- » Climb the Leaderboard Among Fellow Aspirants
- » Practice Unlimited MCQs for NEET & JEE
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- » Track Your Performance Smarter



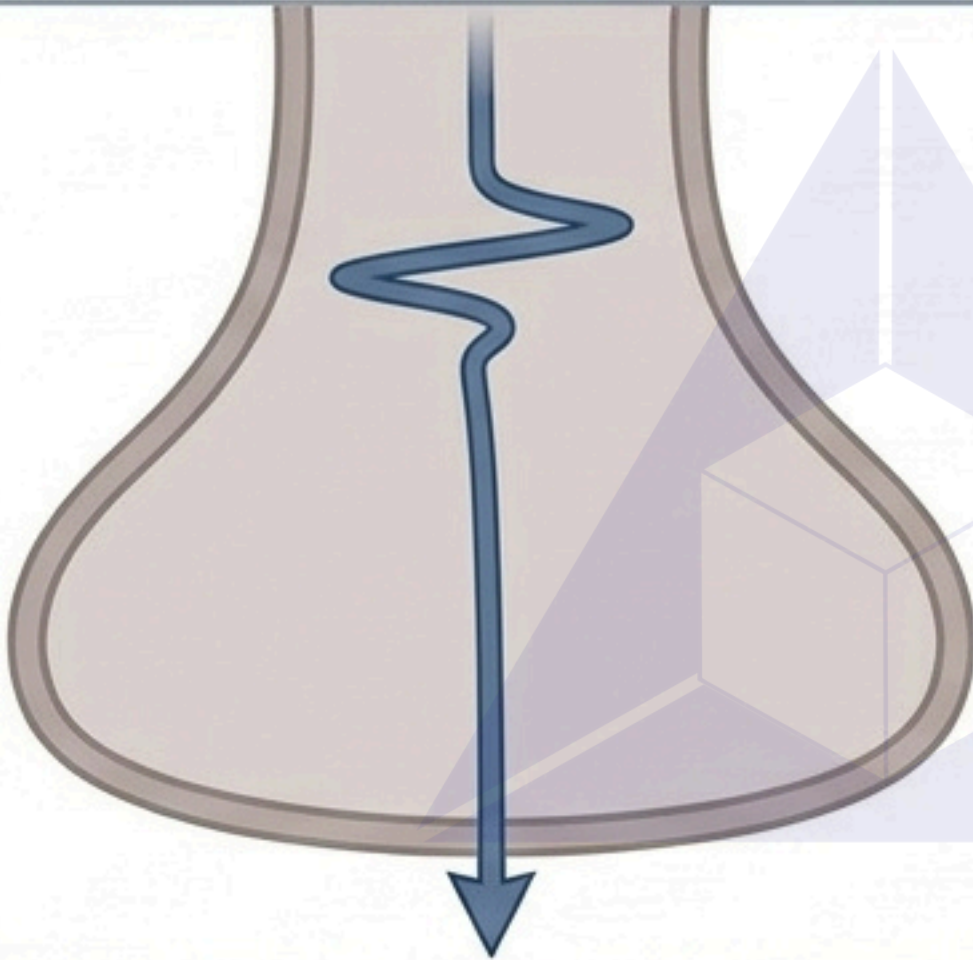
Method 2: The Chemical Synapse

	Electrical Synapse	Chemical Synapse
Architecture	Very Close Proximity	Separated by Synaptic Cleft
Signal Type	Direct Electrical Current	Chemical Neurotransmitters
Speed	Extremely Fast	Slower (requires release/binding)
Abundance	Rare in humans	The primary communication method



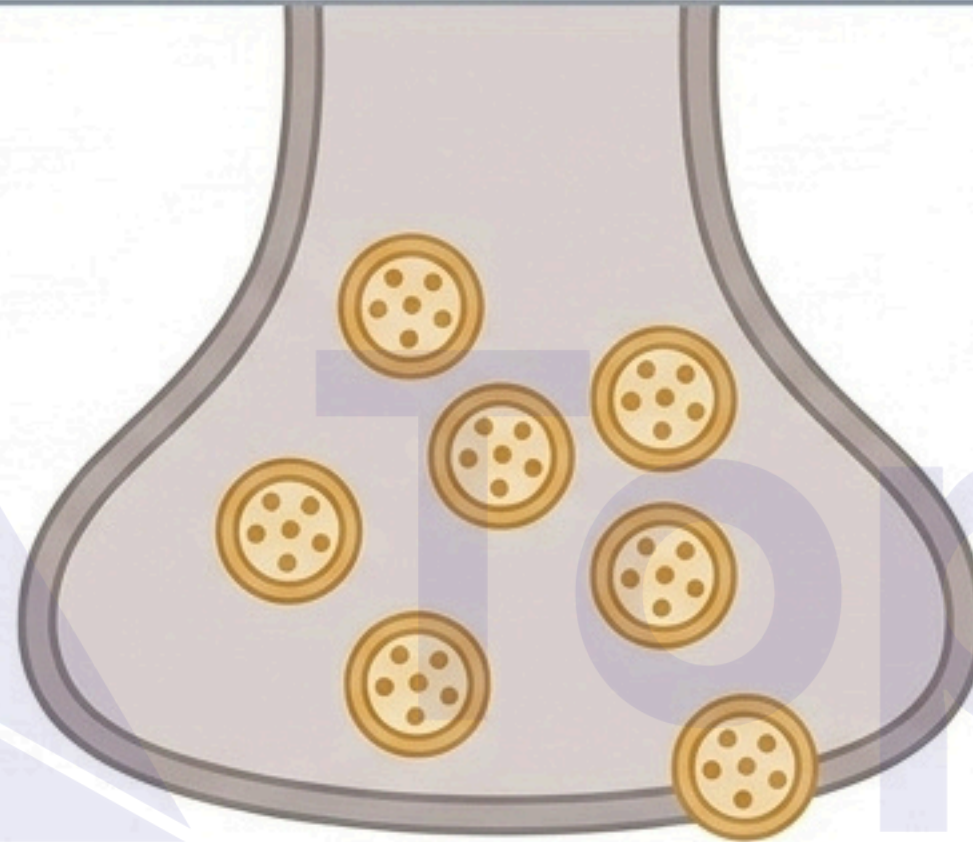
The Pre-Synaptic Process: Preparing the Cargo

1. Action Potential Arrives



The electrical impulse reaches the axon terminal.

2. Vesicles Mobilize



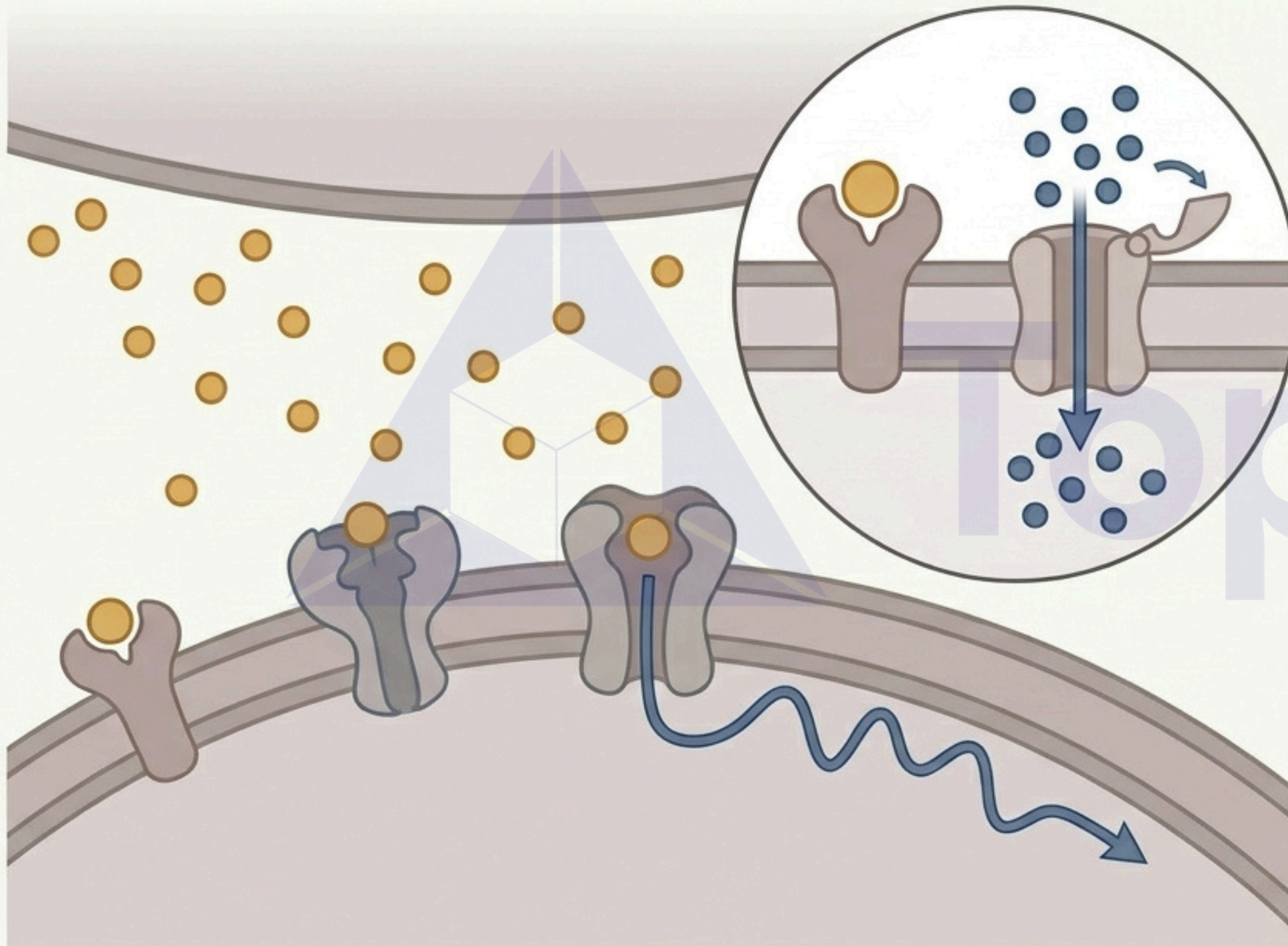
Vesicles filled with neurotransmitter chemicals are stimulated to move toward the membrane.

3. Exocytosis



Vesicles fuse with the plasma membrane, releasing neurotransmitters into the synaptic cleft.

The Post-Synaptic Process: Receiving the Signal



Specific Binding

Released neurotransmitters cross the cleft and bind to specific receptors on the post-synaptic membrane.

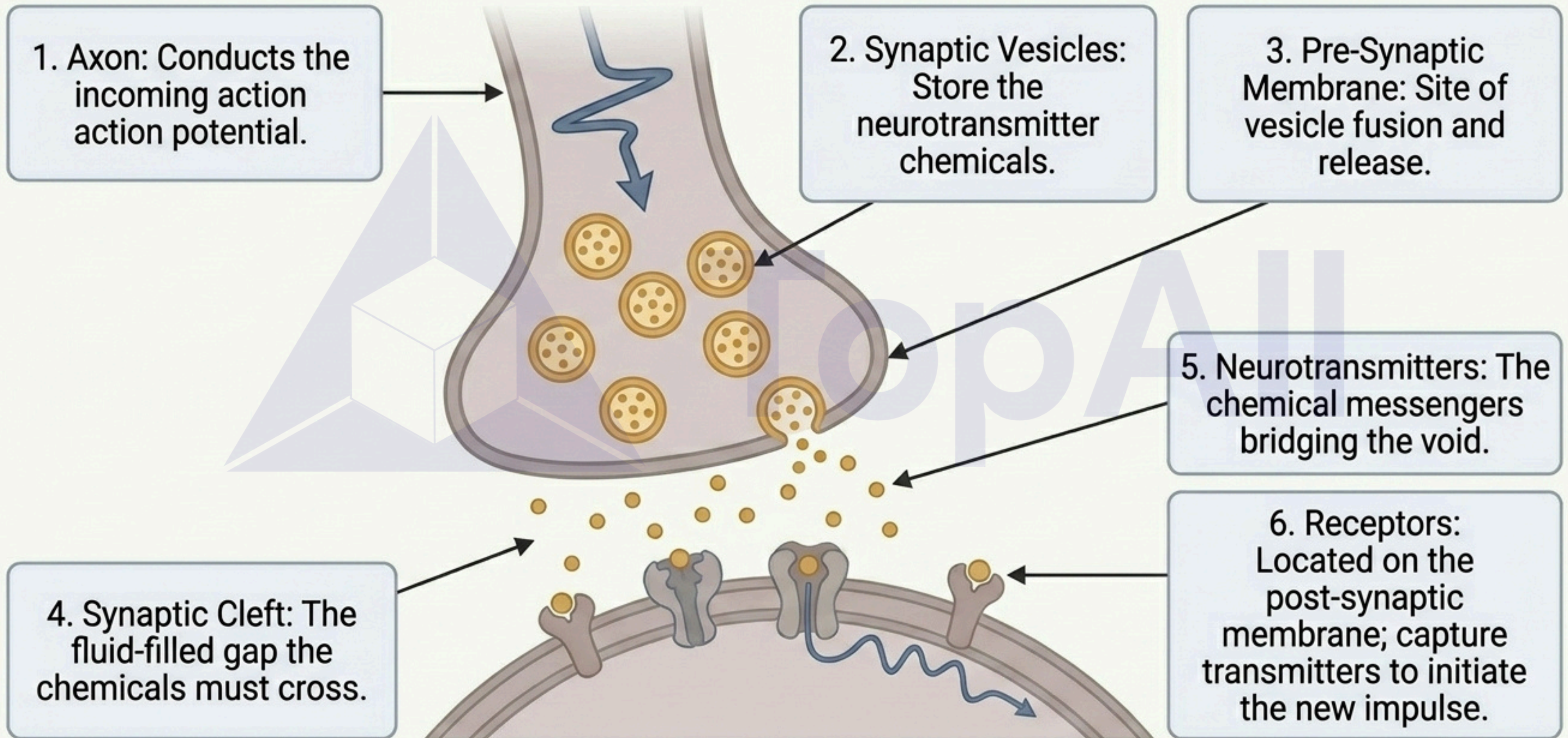
Opening the Gates

This precise lock-and-key binding action chemically opens specific ion channels.

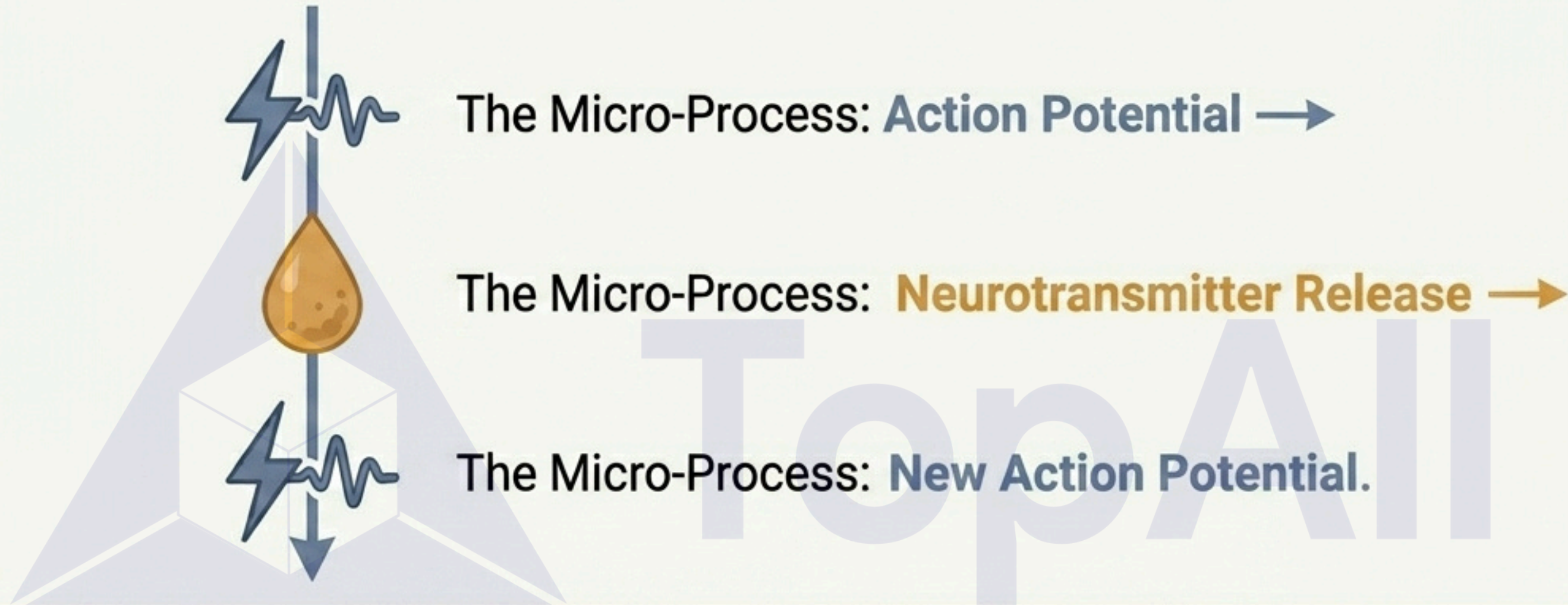
A New Signal Sparks

The entry of ions generates a new electrical potential in the post-synaptic neuron, allowing the message to continue.

The Complete System: Synaptic Transmission



The Electrochemical Symphony



The Macro-Result: This continuous chain of electrochemical baton passes creates the synchronized network of the central and peripheral neural systems.

Every human thought, reflex, and heartbeat is built upon this precise, microscopic translation of electricity into chemistry and back again.



You've Learned the Theory.

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