**BIOLOGICAL ACTIVITY:**

Neomycin sulfate is an aminoglycoside antibiotic and calcium channel inhibitor.

**In Vitro:** Neomycin inhibits thrombin–stimulated release of inositol 1,4,5–trisphosphate (IP₃), by selectively binding PIP₂, but does not inhibit ³²P incorporation into PI or initiation of DNA synthesis[¹]. Neomycin (10 μM–1 mM) induces considerable release of [³H]arachidonic acid from phosphatidylinositol, phosphatidylcholine and phosphatidylethanolamine in saponin–permeabilized human platelets prelabeled with [³H]arachidonic acid. Moreover, neomycin enhances arachidonic acid release induced by thrombin. Addition of neomycin (100 μM) to ⁴⁵Ca²⁺–preloaded platelets elicits ⁴⁵Ca²⁺ mobilization from intracellular stores[²]. Neomycin (0–10 mM) inhibits guanosine 5’–[gamma–thio]triphosphate–stimulated PLD activity in digitonin–permeabilized NG108–15 cells in a concentration–dependent manner (50% inhibition at 100 μM).

Neomycin similarly inhibits PLD activity present in rat brain membranes and assayed in vitro with [³H]phosphatidylcholine as substrate (50% inhibition at 65 μM)[³]. Neomycin (5 mM) causes reversible reductions in the level of intracellular Ca²⁺, but PtdIns(4,5)P₂ is not required for the channel activity[⁴].

**References:**


**Caution:** Product has not been fully validated for medical applications. For research use only.

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