

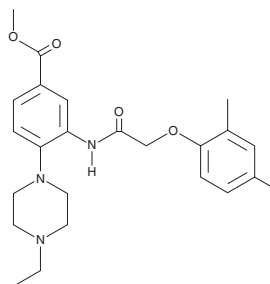
PRODUCT INFORMATION



AP503

Item No. 45892

CAS Registry No.: 767299-99-0
Formal Name: 3-[[2-(2,4-dimethylphenoxy)acetyl]amino]-4-(4-ethyl-1-piperazinyl)-benzoic acid, methyl ester
Synonym: AP-970/43482503
MF: C₂₄H₃₁N₃O₄
FW: 425.5
Purity: ≥98%
Supplied as: A solid
Storage: -20°C
Stability: ≥4 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

AP503 is supplied as a solid. A stock solution may be made by dissolving the AP503 in the solvent of choice, which should be purged with an inert gas. AP503 is slightly soluble (0.1-1 mg/ml) in ethanol and sparingly soluble (1-10 mg/ml) in DMSO.

Description

AP503 is an agonist of adhesion G protein-coupled receptor D1 (ADGRD1), also known as GPR133, a G protein-coupled receptor (GPCR) involved in androgen-dependent muscle strength.¹ It selectively activates G_s-signaling (EC₅₀ = 1.2 nM) over G₁₂- or G_i-signaling in HEK293 cells expressing ADGRD1 and does not activate the androgen receptor in a reporter assay using LNCaP cells. AP503 is also selective for ADGRD1 over a panel of 27 other adhesion GPCRs (aGPCRs) at 100 μM. It promotes tetanic contraction forces in fiber bundles isolated from mouse extensor digitorum longus tissue. Unlike the endogenous ADGRD1 agonist 5α-dihydrotestosterone (5α-DHT), AP503 does not increase the thickness of the prostatic epithelium in mice. AP503 (2 mg/kg) increases bone mass in male mice and increases cortical bone mineral density and thickness in ovariectomized mice.²

References

1. Yang, Z., Ping, Y.Q., Wang, M.W., *et al.* Identification, structure, and agonist design of an androgen membrane receptor. *Cell* **188**(6), 1589-1604 (2025).
2. Lehmann, J., Lin, H., Zhang, Z., *et al.* The mechanosensitive adhesion G protein-coupled receptor 133 (GPR133/ADGRD1) enhances bone formation. *Signal Transduct. Target. Ther.* **10**(1), 199 (2025).

WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the [complete](#) Safety Data Sheet, which has been sent via email to your institution.

WARRANTY AND LIMITATION OF REMEDY

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