

Platelet-activating factor

Overview: Platelet-activating factor (PAF, 1-*O*-alkyl-2-acetyl-*sn*-glycero-3-phosphocholine) is a biologically active phospholipid mediator. PAF acts by binding to a unique G protein-coupled seven transmembrane receptor (PAF-R) and activates multiple intracellular signalling pathways by coupling to the G_{q/11} and G_{i/o} families of G proteins. PAF-R is activated by PAF and its metabolically stable analogue mc-PAF. Other suggested endogenous ligands are oxidized phosphatidylcholine (Marathe *et al.*, 1999) and lysophosphatidylcholine (Ogita *et al.*, 1997). It may also be activated by bacterial lipopolysaccharide (Nakamura *et al.*, 1992).

Nomenclature	PAF-R
Ensembl ID	ENSG00000169403
Principal transduction	G _{q/11} , G _i , G _o
Selective agonists	mc-PAF
Selective antagonists	CV-6209 (9.5), SR27417 (10.0), WEB2086 (8.0), L659989 (8.1), ginkgolide B (6.4)
Radioligand	[³ H]-PAF (1.6 nM, Fukunaga <i>et al.</i> , 2001)

Note that a previously recommended radioligand ([³H]-WEB2086; K_d 44.6 nM) is currently unavailable.

Abbreviations: CV-6209, 2-(*N*-acetyl-*N*-[2-methoxy-3-octadecylcarbamoyloxypropoxycarbamoyl]aminomethyl)-1-ethylpyridinium chloride; L659989, *trans*-2-(3-methoxy-5-methylsulphonyl-4-propoxyphenyl)-5-(3,4,5-trimethoxyphenyl)tetrahydrofuran; mc-PAF, 1-*O*-alkyl-2-*N*-methylcarbamoyl-*sn*-glycero-3-phosphocholine; also known as (methyl)carbam(o)yl-PAF or c-PAF; SR27417, *N*-(2-dimethylaminoethyl)-*N*-(3-pyridinylmethyl)(4-[2,4,6-triisopropylphenyl]thiazol-2-yl)amine; WEB2086, 3-(4-[2-chlorophenyl]-9-methyl-6*H*-thieno[3,2-*f*][1,2,4]triazolo[4,3-*a*][1,4]diazepine-2-yl)-1-(4-morpholinyl)-1-propanone; also known as apafant

Further Reading

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