

Antianginal Drugs

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Introduction

❖ Angina results from a reduction in the oxygen supply/demand ratio.

❖ Therefore, in order to alleviate the pain, it is necessary to improve this ratio. This can be done either by increasing blood flow (which increases oxygen delivery or supply), or by decreasing oxygen demand (i.e., by decreasing myocardial oxygen consumption).

❖ Drugs that reduce myocardial oxygen demand are commonly used to prevent and treat episodes of ischemic pain associated with chronic stable angina).

❖ Some of these drugs reduce oxygen demand by decreasing heart rate (decreased chronotropy) and contractility (decreased inotropy), while other drugs reduce afterload and or preload on the heart. Afterload and preload reducing drugs act by dilating peripheral arteries and veins.

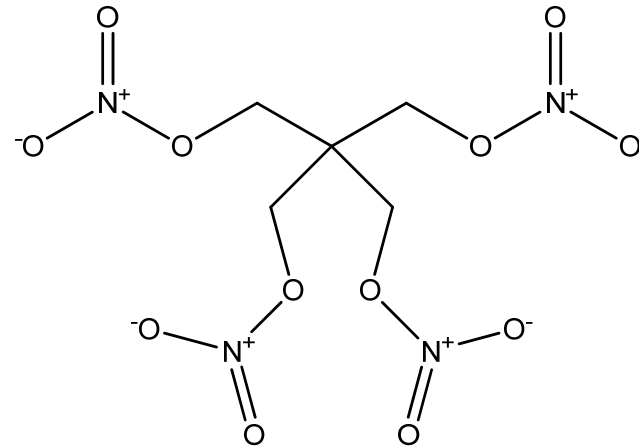
Classification

Vasodilators

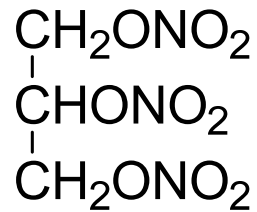
Amyl nitrite

$C_5H_{10}ONO$

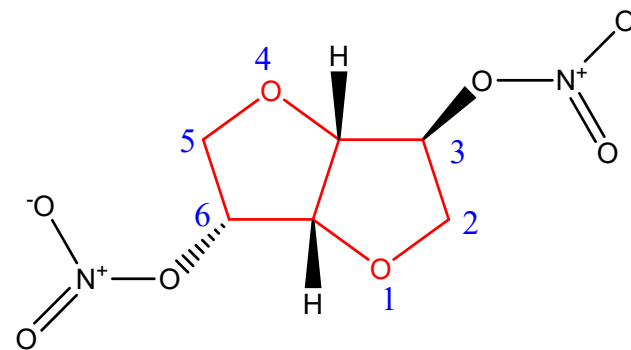
Pentaerythritol tetranitrate



Nitroglycerin

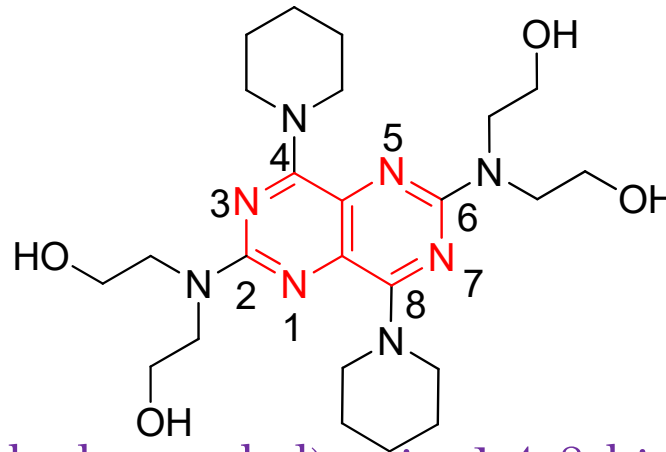


Isosorbide dinitrite



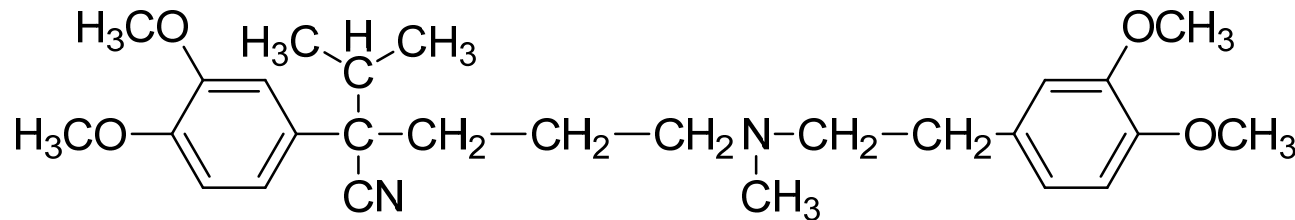
IUPAC: 6-nitrooxyhexahydrofuro[2,3-d]furan-3-yl] nitrate

Dipyridamole



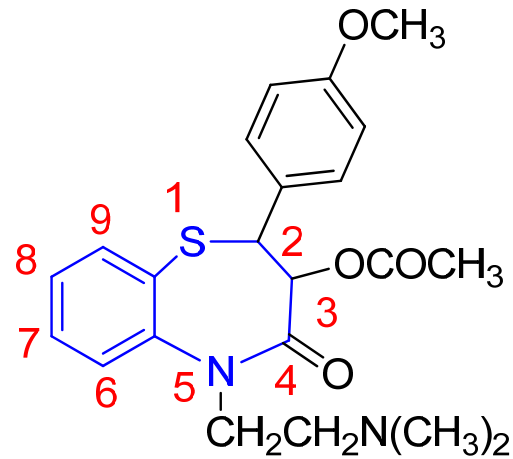
IUPAC: 2-({6-[bis(2-hydroxyethyl)amino]-4,8-bis(piperidin-1-yl)-[1,3] diazino[5,4-d]pyrimidin-2-yl} (2-hydroxyethyl)amino)ethan-1-ol

Calcium Channel Blockers Verapamil



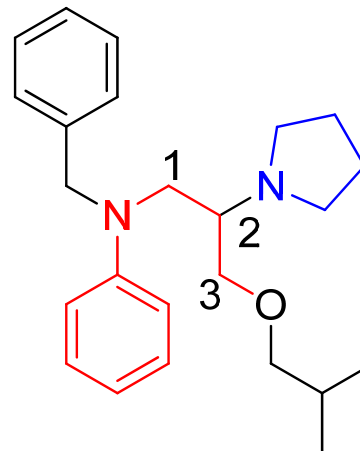
IUPAC: 2-({6-[bis(2-hydroxyethyl)amino]-4,8-bis(piperidin-1-yl)-[1,3] diazino[5,4-d]pyrimidin-2-yl} (2-hydroxyethyl)amino)ethan-1-ol

Diltiazem



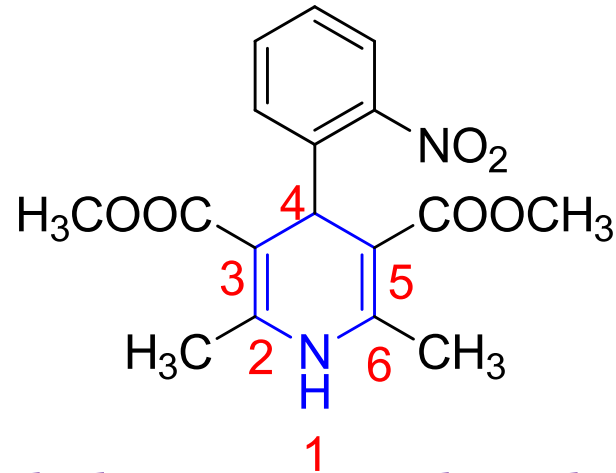
(+)-cis-5-[2-(dimethylamino)ethyl]-2,3-dihydro-3-hydroxy-2-(p-methoxyphenyl)-1,5-benzothiazepin-4(5H)-one acetate ester

Bepridil



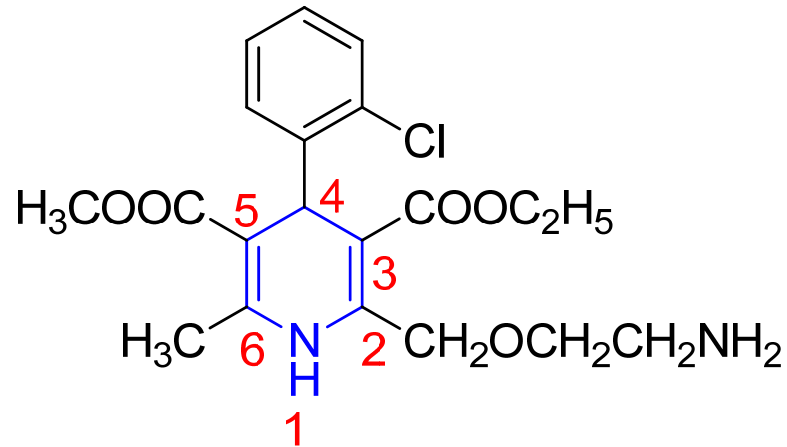
N-benzyl-N-[3-(2-methylpropoxy)-2-(pyrrolidin-1-yl)propyl]aniline

Nifedipine



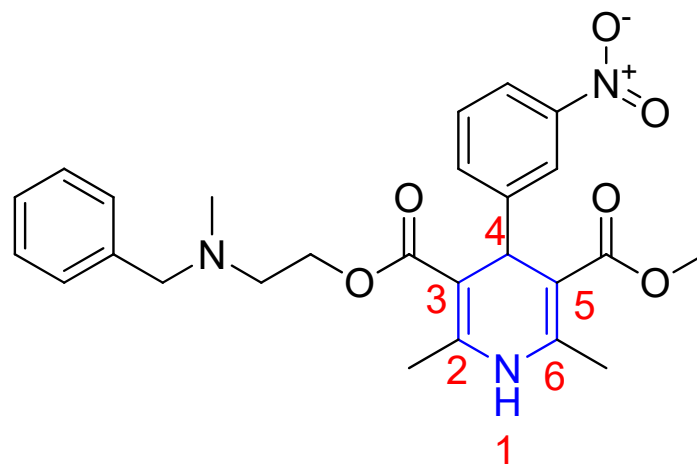
dimethyl 2,6-dimethyl-4-(2-nitrophenyl)-1,4-dihydropyridine-3,5-dicarboxylate

Amlodipine



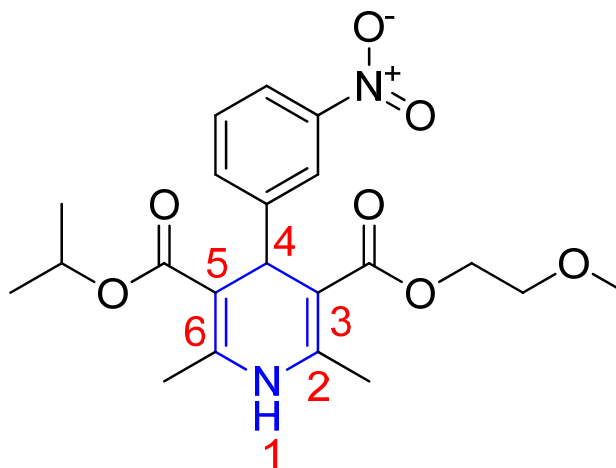
(RS)-3-ethyl 5-methyl 2-[(2-aminoethoxy)methyl]-4-(2-chlorophenyl)-6-methyl-1,4-dihydropyridine-3,5-dicarboxylate

Nicardipine



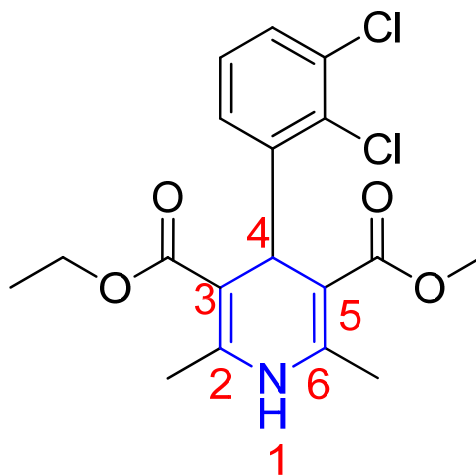
3- {2-[benzyl(methyl)amino]ethyl} 5-methyl 2,6-dimethyl-4-(3-nitrophenyl)-1,4-dihydropyridine-3,5-dicarboxylate

Nimodipine



2,6-dimethyl-4-(3'-nitrophenyl)-1,4-dihydropyridine-3,5-dicarboxylic acid 3- β -methoxyethyl ester 5-isopropyl ester

Felodipine



(±)-ethyl methyl 4-(2,3-dichlorophenyl)-1,4-dihydro-2,6-dimethyl-3,5-pyridinedicarboxylate