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This X-ray analysis shows that AMP-PNP has retained similar structural characteristics to ATP. The enzymic cleavage by myocardial hexokinase and ATPases is inhibited, whereas the adenylyl cyclase from plasma membranes converts AMP-PNP to cyclic AMP and PNP.²
Thus membrane bound ATP utilizing enzymes could possibly be distinguished using this inhibitor.³

References:

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Nitrosoxide spin labels

Spin labeling, a term coined by Stone et al., refers to the use of stable free radicals as reporter groups. The paramagnetic resonance spectrum of the spin label, or its effect on nuclear resonance spectra, or both, can provide significant information on molecular structure and dynamics in biological systems. The most commonly used spin labels are molecules which contain a nitrosoxide moiety.

Nitrosides are unreactive under a variety of experimental conditions, stable in aqueous solutions to moderate heating (up to 70-80°C) and to pH changes over the range of 3 to 10, and nontoxic to most biological systems. They can be reduced to the hydroxylamines by many mild reducing agents, but are not affected by two-electron reductants. Reduction to the secondary amine requires stronger reducing agents than are usually encountered in biological systems.

Nitrosoxide spin labels have been extensively used in the studies of biomembranes and membrane models, the geometry of binding sites (e.g., antibody combining sites, enzyme active sites), conformational changes in macromolecules (proteins such as hemoglobin, nucleic acids such as RNA), enzyme mechanisms, and immunooasays of drugs. For the aforementioned studies, compounds such as ADP, ATP, vitamin B12, hemoglobin, morphine, etc., have been spin-labeled with nitrosides.

The preformed nitrosoxide spin labels we offer carry amino, hydroxyl or oxo functions through which specific compounds of interest may be attached. Alternatively, a 4,4-dimethyl-oxazolidine-N-oxyl (or simply "dioxyl") moiety can be synthesized by the method of Keana et al.3 from a keto group in the molecule to be studied.

Spin labels, precursors and reagents:

15.562-3 3-Carbamoyl-2,2,5,5-tetramethyl-3-pyrrolin-1-yloxy, free radical ..................................................... 1g $16.00; 5g $60.00
16.391-0 3-Carbamoyl-2,2,5,5-tetramethylpyrrolin-1-yloxy, free radical .......................................................... 1g $8.00; 5g $30.00
16.394-5 4-Amino-2,2,6,6-tetramethylpiperidinoxy, free radical ................................................................. 1g $6.00; 5g $20.00
17.614-1 4-Hydroxy-2,2,6,6-tetramethylpiperidinoxy, free radical ............................................................. 1g $16.00; 5g $50.00
17.948-5 4-Oxo-2,2,6,6-tetramethylpiperidinoxy, free radical ............................................................... 1g $6.00; 5g $20.00
11.573-8 4-Amino-2,2,6,6-tetramethylpyperidineline ................................................................. 5g $16.30; 15g $44.15; 25g $55.95
11.576-6 2,2,6,6-Tetramethyl-4-piperidinol ................................................................. 10g $15.00; 25g $37.50
11.576-2 2,2,6,6-Tetramethyl-4-piperidone hydrochloride ...................................................... 25g $12.50; 100g $37.50
A8518-2 3-Amino-1-methyl-1-propanol ................................................................. 500g $5.50; 1Kg $5.00
C6278-0 m-Chloroperoxybenzoic acid .......... (Write for bulk prices.) 25g $8.00; 100g $25.50; 1Kg $150.00

*Designates tenth-molar unit.

References:

Some reviews:

In addition to their use as spin labels, nitrosoxides find other applications simply because they are stable free radicals, e.g., 17,614-1 and 17,948-5 are inhibitors for the polymerization of dienes and vinyl compounds. These two compounds are efficient antioxidants in trialkylboranes, lipids, and antioxidants. Stabilize carotene, and are inhibitors in the thermooxidative degradation of polypropylene (nylon). They also possess antinociceptive activity, particularly against hematocytolysis in the peripheral blood and bone marrow.

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