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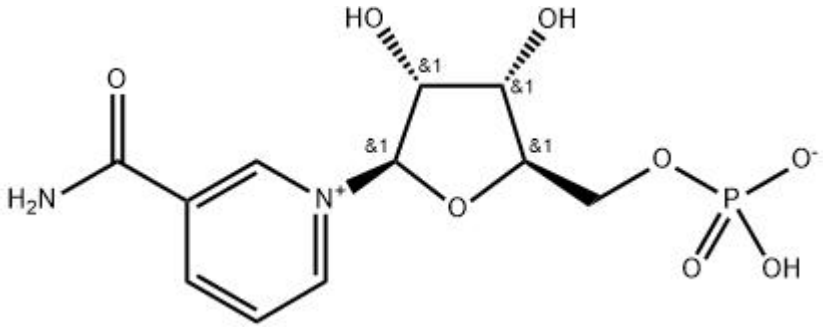
Preparation and application of β-nicotinamide mononucleotide

1.Preparation of nicotinamide mononucleotide

Add 150ml of phosphate buffered saline solution into a 500ml four-necked bottle. Add 2g of magnesium chloride, 10g of ATP, 7g of ribose, and 10g of nicotinamide at one time, and keep stirring at 35°C. Detect the pH value of the reaction system, adjust the pH to 8.0 with 10% Na2CO3 solution, then add 1 g of RK enzyme powder and 2 g of NAMPT enzyme powder, and stir to dissolve. The reaction was stirred at 200 rpm in 3Chemicalbook 7°C, and the conversion rate of the reaction was monitored by liquid chromatography-mass spectrometry. After 6 hours of reaction, it was detected that ATP had been consumed, and the reaction was stopped. Through further filtration, HZ-818 type macroporous resin adsorption, freeze-drying, ethanol and water recrystallization, β-nicotinamide mononucleotide-nicotinamide mononucleotide NMN can be obtained with a yield of 70%.



2.Application of nicotinamide mononucleotide

β-nicotinamide mononucleotide is the precursor of NAD+, the cofactor of longevity protein in human body. NAD+ is an important coenzyme of the tricarboxylic acid cycle, which promotes the metabolism of sugar, fat, and amino acids, and participates in the synthesis of energy; NAD+ is the only substrate for coenzyme I-consuming enzymes (the only substrate for DNA repair enzyme PARP and the only long-lived protein Sirtuins substrate, the only substrate of the cyclic ADP ribose synthase CD38/157). NAD+ participates in all aspects of human metabolism and is a key chemical coenzyme. Without NAD+, metabolism will not work. The elderly lack NAD+, so various problems, large and small, will come. By supplementing NAD+ additionally, you can comprehensively anti-aging .