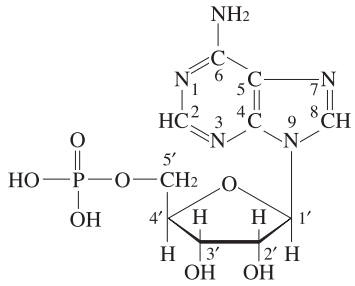
AMP

Adenosine 5′-monophosphate (free acid) Crystalline

from Yeast

Structure



Formula

: $C_{10}H_{14}N_5O_7P$

Formula Weight

: 347.2 (as anhydrous free acid)
: 365.2 (as monohydrate)

Specification

Purity

Determined by Enzymatic Method (PK, LDH, MK) ≧ 95%

Water Content ＜ 8%

UV Spectral Analysis

ε at 260 nm and pH 7.5 (15.4 ± 0.5) × 10^3

Ratio at pH 7.5

A_{250}/A_{260} 0.78 ± 0.03

A_{280}/A_{260} 0.16 ± 0.02

Assay Procedure

I Spectrophotometric Method

Wavelength : 340 nm, Light path length : 1 cm

Pipette the following reagents into a cuvette

	a	b	c	d
Tris-HCl/K^+ & Mg^{2+} (0.1 mol/L, pH 7.5/0.12 mol/L & 0.012 mol/L)	5.0 mL	5.0 mL	5.0 mL	5.0 mL
Substrate mixture*(1)	0.3 mL	0.3 mL	0.3 mL	0.3 mL
AMP (0.2 mg/mL)	0.5 mL	0.5 mL	—	—
Distilled water	—	0.1 mL	0.5 mL	0.6 mL
LDH & PK (200 U/mL & 150 U/mL)	0.1 mL	0.1 mL	0.1 mL	0.1 mL
MK (100 U/mL)	0.1 mL	—	0.1 mL	—

*(1) PEP monocyclohexyl ammonium salt (14 mg/mL) : ATP (3 mg/mL) : NADH (8 mg/mL) = 1 : 1 : 1

II Calculation

$$\frac{\Delta A \cdot V \cdot MW \times 100}{2^{*(2)} \cdot 6.3 \times 10^3 \cdot d \cdot v \cdot s} \times \frac{100}{(100 - W)} = \text{Purity of AMP}$$

$\Delta A = (Ab - Aa) - (Ad - Ac)$

V = Total volume of reaction mixture (6.0 mL)

MW = 347.2, anhydrous free acid

6.3×10^3 = Molar extinction coefficient of NADH at 340 nm ($L \cdot mol^{-1} \cdot cm^{-1}$)

d = Light path length (1 cm)

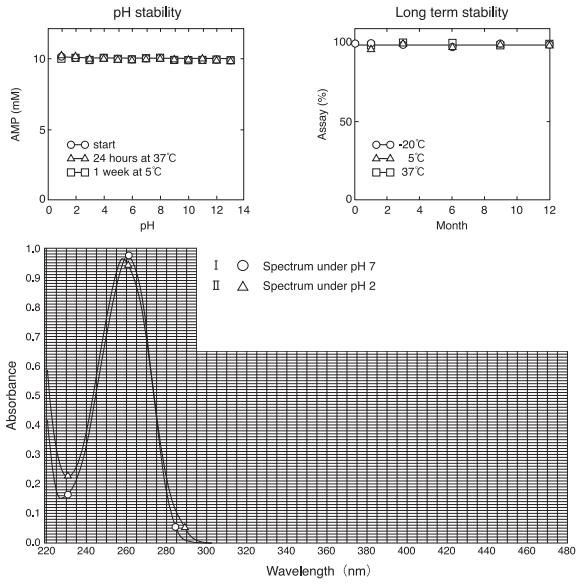
v = Sample volume (0.5 mL)

s = Sample concentration (0.2 mg/mL)

W = Water content (%)

*(2) AMP + ATP = 2 ADP

Reference Data



Storage

Store below -20 ℃. Handling during short term such as transportation is allowed at 1 - 10 ℃.

Store in the dark. Keep off humidity.

Cat. No./Package

Cat. No.	Package
45100900	Bulk

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