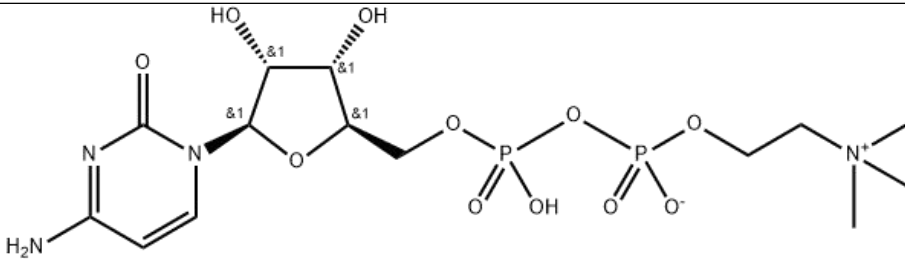




杭州海蓝化工有限公司
HANGZHOU HAILAN CHEMICAL CO.,LTD

CERTIFICATE OF ANALYSIS

COA No.:082023010201

Product Name	Citicoline
CAS Registry number	987-78-0
Structure	
MF&MW	C ₁₄ H ₂₆ N ₄ O ₁₁ P ₂ & 488.33
Batch number	202211201
Date of manufacture	20221120
Retest date	20231119

Index Name	Specifications	Results
Appearance	White crystalline powder	Conforms
Clarity and color	Colorless and clear	Conforms
PH	2.5-3.5	2.9
Particle Size	100% pass 20 mesh	Conforms
Bulk Density	0.4-0.5g/cm ³	0.41g/cm ³
5' -CMP	1.0%max	0.35%
Ammonium	0.05%max	Conforms
Free phosphoric acid	0.01%max	Conforms
Loss on drying	5.0%max	3.0%
Heavy metals total	10ppm max	Conforms
Arsenic (As)	2ppm max	Conforms
Lead (Pb)	3ppm max	Conforms

Cadmium (Cd)	1ppm max	Conforms
Mercury (Hg)	0.1ppm max	Conforms
Total plate count	1,000cfu/g max	Conforms
Fungi count	100cfu/g max	Conforms
Total yeast & molds	100cfu/g max	Conforms
Total coliforms	10cfu/g max	Conforms
Escherichia coli	Negative/10g	Conforms
Salmonella species	Negative/25g	Conforms
Staphylococcus aureus	Negative/g	Conforms
Assay (by HPLC)	98.0-102.0%	99.5%
Purity (HPLC)	99.0%min	99.4%
Storage	Easy to absorb moisture and agglomerate. Store in cool and dry place.	
Conclusion	Meets the Enterprise requirements	

HANGZHOU HAILAN CHEMICAL CO., LTD.
QUALITY CONTROL DEPARTMENT