

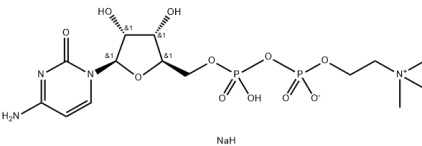


Wuhan HengHeDa Pharm Co., Ltd

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Wuhan Economic& Technological Development Zone, Wuhan, China

CERTIFICATE OF ANALYSIS

Product name	Citicoline Sodium	
CAS NO	33818-15-4	
Molecular formul	C14H27N4NaO11P2	
Molecular weight	512.32	
Quantity	500KG	
Batch NO	HHD20220407	
Production date	2022.04.07	
Expiry Date	2024.05.06	
Test based on enterprise standard		
Test Item	Specification	Result
Appearance	White crystalline or crystalline powder,odorless	Conforms
Solubility	Freely soluble in water,insoluble in ethanol,in acetome and in chloroform	Conforms
Identification	Color reaction	Positive
	The retention time of major peak for the sample	Conforms

	solution should be complied with that of standard solution	
	IR	Positive
	The aqueous solution yields the reaction characteristic of sodium salts	Conforms
PH	6.0-7.5	6.4
Clarity and color of solution	Should be clear and colorless	Conforms
Chlorides	$\leq 0.05\%$	Conforms
Ammonium salt	$\leq 0.05\%$	Conforms
Iron	$\leq 0.01\%$	Conforms
Phosphates	$\leq 0.1\%$	Conforms
Loss on drying	$\leq 6.0\%$	$\leq 0.82\%$
Heavy metals	$\leq 0.0005\%$	Conforms
Arsenic	$\leq 0.0001\%$	Conforms
Related substances	5`-CMP $\leq 0.3\%$ Other single impurity $\leq 0.2\%$ Other total impurity $\leq 0.7\%$	0.010% 0.0055% 0.0087%
Residual Solvents	Methanol $\leq 0.3\%$	N.D.

	Ethanol $\leq 0.5\%$	N.D.
	Acetone $\leq 0.5\%$	N.D.
Bacterial endotoxins	$< 0.3\text{EU/mg}$	Conforms

Storage	Store in cool & dry place, keep away from strong light and heat.
Shelf life	2 years when properly stored.
Conclusion: This product complies with above specification.	

Inspector

Shen Wu

Director

King Yang

