N-Acetyl-L-Cysteine (NAC) Solution (0.5 M)

Cat. No. : PB180601

Size: 1mL

General Information

Product Form	Liquid
Solvent	Ultrapure water
Concentration	0.5 mol/L
Storage	-5~-20℃
Whether to avoid light	Shading light
Shipping	Ice bag
Expiration date	12 months

Background

N-acetyl-L-cysteine (NAC) is a sulfhydryl-containing compound with multiple biological functions. First, as an antioxidant, NAC is a substrate for microsomal glutathione transferase (GST), which promotes intracellular glutathione (GSH) synthesis, thus exerting highly efficient antioxidant effects. Secondly, NAC is also a mucolytic agent, whose mechanism of action is to break down mucin into small molecule peptide chains by breaking the disulfide bonds (-S-S-) in the peptide chains of mucin, thus reducing the viscosity of sputum and promoting sputum expulsion. In addition, NAC has shown significant effects in antiviral and apoptosis regulation, such as inhibiting HIV virus replication and reducing neuronal apoptosis, but at the same time may induce apoptosis in smooth muscle cells.

In organoid culture, N-acetyl-L-cysteine (NAC), a precursor of glutathione, not only possesses antioxidant function, but also effectively inhibits the accumulation of reactive oxygen species (ROS), thus protecting neuronal cells from apoptosis. Therefore, NAC is widely used in culture systems of multiple organoid species to maintain cell homeostasis and support long-term culture.

Common working concentration: 1 mM.

Notes

1. This product was sterilized by 0.1 μm filtration and can be used directly after melting.
2. It is necessary to pay attention to the aseptic operation and avoid the contamination.
3. Before using, the product should be thawed at 2-8℃ and shaken thoroughly; repeated freeze-thaw cycles are not advised.
4. If precipitation happens after thawing, the contents can be resuspended by pipetting or vortex mixing. After incubating the solution at 37℃ for 20 to 30 minutes or letting it stand at room temperature for about an hour, check to see if the precipitate dissolves as intended. If the product dissolves completely, it can be used as usual.
5. This product is a concentrated solution and should be diluted prior to use as required.
6. The product should be used within a month if stored regularly at 2-8℃. Keep in a frozen state at -5~-20℃ for extended storage. Long-term storage at room temperature or between 2-8℃ is not recommended. When lesser amounts are required, aliquoting is advised to prevent repeated freeze-thaw cycles.
7. This product is for research use only.
8. Avoiding skin and eye contact. Don’t inhale dust, and take relevant precautions when operating.