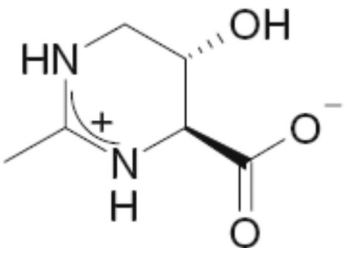
70709 Hydroxyectoin

Product Description:
Ectoines (Ectoin and Hydroxyectoin) are used by many halophilic microorganisms (e.g. *Halomonas elongate*, *Marinoncoccus marinus*) to protect themselves against the extreme conditions (high salt and temperature) in their natural environment. Ectoines have been shown to stabilize proteins, nucleic acids, membranes and cells. They do not interfere with enzymatic and binding reactions and are highly compatible with cell metabolism. Therefore, Ectoines can be used in a wide range of applications for the protection and stabilization of biological macromolecules and cells.

Ectoines can also be found in other microorganisms, such as antibiotica producing "Streptomyces" which protect themselves against the DNA-binding antibiotics.



Applications:
- Stabilization of enzymes and antibodies against physical stress (e.g. freeze-thaw stress)
- Protection of proteins and cells against heat denaturation
- Protection of proteins during freeze drying
- Protection of proteins against proteolysis
- Protection of whole bacterial cells against desiccation
- Additives for protein crystallization
- Protection of proteins against proteolysis
- Stabilization of nucleic acids

Properties:

CAS Number	165542-15-4
Molecular Formula:	$C_6H_{10}N_2O_3$
Molecular Weight:	158.2g/mol
Melting Point:	280°C (decomposition)
Source:	*Halomonas elongata*
Solubility in water:	4.2 mol/l
Solubility in methanol:	0.05 mol/l
Stability:	pH 1-9
Storage Temperature:	RT

General features

- Colorless, protein-free, animal-free
- Non toxic
- Compatible with the metabolism of cells, even at high concentrations (> 1M)
- Highly soluble in water, zwitterionic, neutral at pH 7.0

Working Concentration:

For the protection of proteins Hydroxyectoin conc. of 0.1-1M are used, for the protection of membranes and cells concentrations of 0.1-1% (w/v) are recommended.

References:

1. K. Lippert, E.A. Galinski Appl. Microbiol. Biotechnol. 37, 61, (1992)
2. M.D. Vangala et al. Bioforum 23, 760, (2000)
3. J.R. Blackwell, R. Hogan, Stabilizing effect against various stress factors; used e.g. in the expression of proteins, FEBS Lett. 295, 10, (1991)

Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.