

<b>Product Name:</b>	Cycloheximide A, EvoPure®
<b>Product Number:</b>	C123
<b>CAS Number:</b>	66-81-9
<b>Molecular Formula:</b>	C <sub>15</sub> H <sub>23</sub> NO <sub>4</sub>
<b>Molecular Weight:</b>	281.35
<b>Form:</b>	Powder
<b>Appearance:</b>	White or cream-colored powder
<b>Solubility:</b>	soluble in DMSO.
<b>Source:</b>	<i>Streptomyces griseus</i>
<b>Storage Conditions:</b>	-20°C
<b>Description:</b>	<p>Cycloheximide A, EvoPure® is a highly purified (≥99.0) form of Cycloheximide A, the active compound in standard grade cycloheximide. Cycloheximide is a glutarimide antibiotic and natural fungicide isolated from <i>Streptomyces griseus</i> and a protein synthesis inhibitor in eukaryotic cells. It was discovered by Alma Whiffen-Barksdale of Upjohn Company in 1946. It is routinely used as a selection agent in several types of isolation media. It can be used as a tool in molecular biology to determine the half life of proteins, or in in chase experiments to analyze protein degradation.</p> <p>This product is considered a dangerous good. Quantities above 1 g may be subject to additional shipping fees. Please contact us for details.</p> <p>We also offer:</p> <ul style="list-style-type: none"><li>• Cycloheximide (<a href="#">C001</a>)</li><li>• Cycloheximide Solution (<a href="#">C084</a>)</li><li>• Cycloheximide, CulturePure® (<a href="#">C071</a>)</li></ul>
<b>Mechanism of Action:</b>	Cycloheximide binds to the ribosome and inhibits the eEF2-mediated translocation step in protein synthesis, thus blocking translational elongation.
<b>Spectrum:</b>	Cycloheximide is used for fungi and yeast, including fungi found in brewing test media. It has lower activity against bacteria.

**Microbiology Applications** Cycloheximide chase followed by western blotting was used to analyze protein degradation in the model unicellular eukaryote, *S. cerevisiae* (budding yeast). Yeast cells are incubated in cycloheximide and cell aliquots are collected after specific time points. This allows visualization of the degradation kinetics of the steady state population of a variety of cellular proteins (Buchanan et al, 2016).

Representative susceptibility data includes:

- *Candida albicans*: 12.5 µg/ml
- *Saccharomyces cerevisiae*: 0.2 µg/ml
- *Mycosphaerella graminicola*: 5.62-100 µg/ml

For additional Cycloheximide MIC data, please review our [Antimicrobial Index](#).

### **Plant Biology Applications**

Cycloheximide is a commonly used lab reagent used in *in vitro* applications to inhibit fungal growth by targeting protein synthesis. In yeast, concentrations of 200 uM have fungicidal effects (Schneider-Poetsch et al, 2009). The compound can be used as a plant growth regulator to stimulate ethylene production in leaves and fruit.

### **Cancer Applications**

Pretreatment with cycloheximide followed by estrogen stimulation prevented the estrogen-induced changes in glucose metabolism in perfused breast cancer T47D clone 11 cells. This suggested that the estrogen stimulation requires synthesis of mRNA and protein (Neeman and Degani, 1989). In studying the “immune escape” of cancer cells, in human colorectal cancer cell line COLO 205 is normally resistant to TNF-alpha - a death inducing ligand. However, co-incubation TNF-alpha with cycloheximide caused time-dependent cell death. In fact, authors found that Cycloheximide sensitizes cells to TNF-alpha-induced apoptosis (Pajak et al, 2005).

If you need any help, contact us: [info@toku-e.com](mailto:info@toku-e.com). Find more information on: [www.toku-e.com/](http://www.toku-e.com/)