

## Analytical Chemistry Update

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### Two Method Options for Natamycin at Cherney!

Natamycin, a naturally occurring preservative, is used to protect food from yeasts and molds. It was discovered in a culture of *Streptomyces natalensis* in South Africa in 1955. The antifungal properties of natamycin stem from its ability to break up fungal cell membranes, by interacting with ergosterol, a membrane building block. Selective to ergosterol, natamycin will not affect useful bacteria important to cheese and other food-stuffs. Because of this selectivity, there has been no evidence of natamycin resistance in fungi.

Natamycin is used to preserve cheese worldwide with applications expanding rapidly. Europe has used natamycin on meats and cheeses since the late 1960s and the product has been sold in over 150 countries. In 1978, the US approved its use on sliced cheese and retail-size block cheese and

in 2001 the FDA approved the use of natamycin on shredded cheese.

The FDA allows a maximum of 20 ppm of natamycin on cheese (21CFR 172.155), so levels should be monitored to ensure FDA compliance.



Spectrophotometer



High Performance Liquid Chromatograph (HPLC)

Cherney offers both an HPLC method (\$100/sample) and a spectrophotometric method (\$30/sample) for testing natamycin in powders (ppm), liquids (ppm), cheese rind (ug/cm<sup>2</sup>) and shredded cheese (ppm). HPLC testing is more precise than the spectrophotometric method, so it is recommended customers choose the HPLC method for cheese samples expected to have low levels of natamycin present (<10ppm). HPLC is also the method of choice for powder samples.

A sample size of 50-100 grams is required for powder testing. For liquids, such as dips and brines, 50-100 mls is required. 100 grams is required for shreds. Rind testing requires 50-100 grams with a thickness of less than 5mm.

For technical information, please contact Kirk Jansen, Lead Chemist at 920-406-8300. To request natamycin testing, please contact Nancy Kexel nkexel@cherneymicro.com or 239-593-8024.

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