

Product Name:	Nalidixic Acid
Product Number:	N011
CAS Number:	389-08-2
Molecular Formula:	$C_{12}H_{12}N_2O_3$
Molecular Weight:	232.24
Form:	Powder
Appearance:	White or off-white crystalline powder
Solubility:	Methylene chloride: Soluble Water: 0.1 mg/mL
Source:	Synthetic
Melting Point:	225-231°C
Storage Conditions:	2-8°C
Description:	Nalidixic acid is a naphthyridone antibiotic similar in structure and mechanism to quinolones. TOKU-E offers two forms of nalidixic acid: nalidixic acid (N011) and <u>nalidixic acid sodium salt, CulturePure® (N001)</u>. Nalidixic acid is sparingly soluble in aqueous solution at 0.1 mg/mL. Nalidixic acid sodium salt is freely soluble in aqueous solution at 50 mg/mL.
Mechanism of Action:	Nalidixic acid indirectly inhibits proteins synthesis by binding DNA and interfering with enzymes involved in DNA replication and transcription.
Spectrum:	Nalidixic acid is a broad spectrum antibiotic commonly used against bacteria responsible for urinary tract infections.

Microbiology Applications Nalidixic acid is commonly used in clinical *in vitro* microbiological antimicrobial susceptibility tests (panels, discs, and MIC strips) against gram positive and gram negative microbial isolates. Medical microbiologists use AST results to recommend antibiotic treatment options for infected patients. Representative MIC values include:

- *Escherichia coli* 2 µg/mL - 8 µg/mL
- *Proteus mirabilis* 2.1 µg/mL - 8 µg/mL
- For a complete list of nalidixic acid MIC values, [click here](#).

Kiianitsa et al. used TOKU-E nalidixic acid at 100 µg/mL to study DNA gyrase inhibition in *E. coli* K-12. "[Ultrasensitive isolation, identification and quantification of DNA-protein adducts by ELISA-based RADAR assay](#)"

Media Supplements

Nalidixic acid can be used as a selective agent in several types of isolation media:

[Columbia Blood Agar](#) - *Staphylococcus/Streptococcus* selective supplement

[Wilkins-Chalgren Anaerobe Agar](#) - Isolation of non-sporing anaerobes

[Wilkins-Chalgren Anaerobe Agar](#) - Isolation of Gram-negative anaerobes

[Columbia Blood Agar](#) - *Gardnerella vaginalis* Selective Supplement

[Listeria Enrichment Broth](#) - *Listeria* Selective Enrichment Supplement

[Listeria Enrichment Broth](#) - *Listeria* Selective Enrichment Supplements UVM I and UVM II

[Listeria Enrichment Broth](#) - Modified *Listeria* Selective Enrichment Supplement

[Fraser Broth](#) - Fraser Supplement

[Fraser Broth](#) - Half Fraser Supplement

[Brucella Medium Base](#) - Modified *Brucella* Selective Supplement

[Buffered Listeria Enrichment Broth](#) - *Listeria* Selective Enrichment Supplement

[Chromogenic Listeria Agar](#) - Chromogenic *Listeria* Selective Supplement

[Chromogenic Listeria Agar](#) - Chromogenic *Listeria* Differential Supplement

References:

Levitt, Martin, and et al. "Studies on the Mechanism of Action of Nalidixic Acid." *Studies on the Mechanism of Action of Nalidixic Acid* 4.4 (1973): 479-86. www.ncbi.gov. Web. 10 Sept. 2012.