

# Certificate of Analysis

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**Product Name:** CNQX

**Catalog No.:** 0190

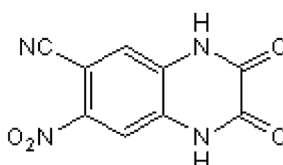
**Batch No.:** 35

CAS Number: 115066-14-3

IUPAC Name: 6-Cyano-7-nitroquinoxaline-2,3-dione

## 1. PHYSICAL AND CHEMICAL PROPERTIES

**Batch Molecular Formula:** C<sub>9</sub>H<sub>4</sub>N<sub>4</sub>O<sub>4</sub>.  
**Batch Molecular Weight:** 232.16  
**Physical Appearance:** Pale yellow solid  
**Solubility:** DMSO to 100 mM  
**Storage:** Store at RT  
**Batch Molecular Structure:**



## 2. ANALYTICAL DATA

**HPLC:** Shows 99.8% purity  
**<sup>1</sup>H NMR:** Consistent with structure  
**Mass Spectrum:** Consistent with structure

**Microanalysis:**

	Carbon	Hydrogen	Nitrogen
Theoretical	46.56	1.74	24.13
Found	46.37	1.63	23.86

Caution - Not Fully Tested • Research Use Only • Not For Human or Veterinary Use

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**Catalog No.:** 0190

**35**

CAS Number: 115066-14-3

IUPAC Name: 6-Cyano-7-nitroquinoxaline-2,3-dione

**Description:**

CNQX is an AMPA and kainate receptor antagonist ( $IC_{50}$  values are 0.3  $\mu$ M and 1.5  $\mu$ M for AMPA and kainate receptors, respectively). CNQX is also an antagonist at the glycine modulatory site on the NMDA receptor complex ( $IC_{50}$  = 25  $\mu$ M). CNQX can be used to isolate GABA<sub>A</sub> receptor-mediated spontaneous inhibitory postsynaptic currents and antagonizes non-NMDA receptor-mediated responses in cultured cerebellar granule cells. CNQX shows neuroprotective effects in models of ischemia and inhibits seizure-like activity in hippocampal neurons. CNQX Disodium Salt (Cat. No. 1045) also available. Please see product specific page on [www.tocris.com](http://www.tocris.com) for full description.

**Physical and Chemical Properties:**

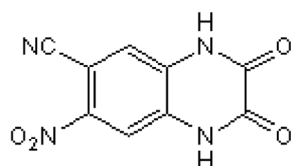
Batch Molecular Formula: C<sub>9</sub>H<sub>4</sub>N<sub>4</sub>O<sub>4</sub>.

Batch Molecular Weight: 232.16

Physical Appearance: Pale yellow solid

**Minimum Purity:** ≥99%

**Batch Molecular Structure:**



**References:**

**King et al** (1992) Antagonism of synaptic potentials in ventral horn neurones by 6-cyano-7-nitroquinoxaline-2,3-dione: a study in the rat spinal cord *in vitro*. *Br.J.Pharmacol.* **107** 375. PMID: 1358390.

**Long et al** (1990) Effect of 6-cyano-2,3-dihydroxy-7-nitro-quinoxaline (CNQX) on dorsal root-, NMDA-, kainate and quisqualate-mediated depolarization of rat motoneurons *in vitro*. *Br.J.Pharmacol.* **100** 850. PMID: 1976402.

**Watkins et al** (1990) Structure-activity relationships in the development of excitatory amino acid receptor agonists and competitive antagonists. *TIPS* **11** 25. PMID: 2155495.

**Storage:** Store at RT

**Solubility & Usage Info:**

DMSO to 100 mM

**Stability and Solubility Advice:**

Some solutions can be difficult to obtain and can be encouraged by rapid stirring, sonication or gentle warming (in a 45-60°C water bath).

Information concerning product stability, particularly in solution, has rarely been reported and in most cases we can only offer a general guide. \*Unless contradicted by product-specific protocols or instructions, our standard recommendations apply:

**SOLIDS:** Provided storage is as stated on the product label and the vial is kept tightly sealed, the product can be stored for up to 6 months from date of receipt.

**SOLUTIONS:** We recommend that stock solutions, once prepared, are stored aliquoted in tightly sealed vials at -20°C or below and used within 1 month. Wherever possible solutions should be made up and used on the same day.

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