



# SZABO SCANDIC

Part of Europa Biosite

## Produktinformation



Forschungsprodukte & Biochemikalien



Zellkultur & Verbrauchsmaterial



Diagnostik & molekulare Diagnostik



Laborgeräte & Service

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See the following pages for more information!



### Lieferung & Zahlungsart

siehe unsere [Liefer- und Versandbedingungen](#)

### Zuschläge

- Mindermengenzuschlag
- Trockeneiszuschlag
- Gefahrgutzuschlag
- Expressversand

### SZABO-SCANDIC HandelsgmbH

Quellenstraße 110, A-1100 Wien

T. +43(0)1 489 3961-0

F. +43(0)1 489 3961-7

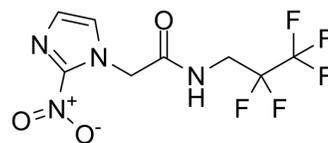
[mail@szabo-scandic.com](mailto:mail@szabo-scandic.com)

[www.szabo-scandic.com](http://www.szabo-scandic.com)

[linkedin.com/company/szaboscandic](https://www.linkedin.com/company/szaboscandic) 

## EF-5

<b>Cat. No.:</b>	HY-U00118		
<b>CAS No.:</b>	152721-37-4		
<b>Molecular Formula:</b>	C <sub>8</sub> H <sub>7</sub> F <sub>5</sub> N <sub>4</sub> O <sub>3</sub>		
<b>Molecular Weight:</b>	302.16		
<b>Target:</b>	Others		
<b>Pathway:</b>	Others		
<b>Storage:</b>	Powder	-20°C	3 years
		4°C	2 years
	In solvent	-80°C	2 years
		-20°C	1 year



## SOLVENT & SOLUBILITY

### In Vitro

DMSO : 125 mg/mL (413.69 mM; Need ultrasonic)

Concentration	Solvent	Mass		
		1 mg	5 mg	10 mg
Preparing Stock Solutions	1 mM	3.3095 mL	16.5475 mL	33.0951 mL
	5 mM	0.6619 mL	3.3095 mL	6.6190 mL
	10 mM	0.3310 mL	1.6548 mL	3.3095 mL

Please refer to the solubility information to select the appropriate solvent.

### In Vivo

- Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline  
Solubility: ≥ 2.08 mg/mL (6.88 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)  
Solubility: ≥ 2.08 mg/mL (6.88 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% corn oil  
Solubility: ≥ 2.08 mg/mL (6.88 mM); Clear solution

## BIOLOGICAL ACTIVITY

### Description

EF-5 (EF5; 2-Nitroimidazole) is a hypoxia labeling agent used to identify hypoxia in cells.

### In Vitro

Overexpression of CYPOR induces similar 2- to 4-fold increases in EF-5 binding and metabolic reduction of tirapazamine and CEN-209 in SiHa and HCT116 cell lines, and similar enhancement of γH2AX formation. EF-5 binding and metabolic reduction of the prodrugs are highly correlated in a panel of 14 hypoxic tumor cell lines<sup>[1]</sup>.  
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

## In Vivo

EF-5 binding is a promising stratification biomarker for benzotriazine-N-oxide bio-reductive prodrugs. In HCT116 xenografts, CYPOR overexpression also significantly increases EF-5 binding and CEN-209 reduction, and modification of tumor hypoxia causes similar changes to the bio-reductive activation of both agents, resulting in a strong correlation between EF-5 binding and CEN209-induced DNA damage at the individual tumor level<sup>[1]</sup>. Following intravenous injection of EF-5, binding and detection using a monoclonal antibody in 9L gliomas is specific and oxygen dependent. Detection of binding using fluorescence microscopy can be performed on frozen tissues; tissue sections can be counterstained with haematoxylin and eosin for light microscopic analysis. Alternatively, the distribution of hypoxia in a tumor can be inferred by examining individual tumor cells using flow cytometric techniques<sup>[2]</sup>.

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

## PROTOCOL

### Animal Administration <sup>[2]</sup>

Rats: The rat is given EF-5 as an intravenous injection of 10 mM EF-5 prepared in 0.9% saline. The mass of solution administered is 1% of the rat's mass. Three hours following EF-5 administration, anaesthesia is induced with xylazine and ketamine, the tumor removed and immediately cooled. The tumor is weighed and then bisected. Half of the tumor is used for disaggregation and cell analysis and the other half is quickly frozen for histopathological analysis<sup>[2]</sup>.

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

## REFERENCES

[1]. Wang J, et al. The 2-nitroimidazole EF5 is a biomarker for oxidoreductases that activate the bio-reductive prodrug CEN-209 under hypoxia. Clin Cancer Res. 2012 Mar 15;18(6):1684-95.

[2]. Evans SM, et al. Identification of hypoxia in cells and tissues of epigastric 9L rat glioma using EF5 [2-(2-nitro-1H-imidazol-1-yl)-N-(2,2,3,3,3-pentafluoropropyl)acetamide]. Br J Cancer. 1995 Oct;72(4):875-82.

**Caution: Product has not been fully validated for medical applications. For research use only.**

Tel: 609-228-6898

Fax: 609-228-5909

E-mail: tech@MedChemExpress.com

Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA