



# SZABO SCANDIC

Part of Europa Biosite

## Produktinformation



Forschungsprodukte & Biochemikalien



Zellkultur & Verbrauchsmaterial



Diagnostik & molekulare Diagnostik



Laborgeräte & Service

Weitere Information auf den folgenden Seiten!  
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) 

## pH-Low Insertion Peptide TFA

<b>Cat. No.:</b>	HY-P4116A	
<b>Molecular Formula:</b>	C <sub>189</sub> H <sub>282</sub> N <sub>42</sub> O <sub>55</sub> S.xC <sub>2</sub> HF <sub>3</sub> O <sub>2</sub>	
<b>Sequence:</b>	Ala-Cys-Glu-Gln-Asn-Pro-Ile-Tyr-Trp-Ala-Arg-Tyr-Ala-Asp-Trp-Leu-Phe-Thr-Thr-Pro-Leu-Leu-Leu-Leu-Asp-Leu-Ala-Leu-Leu-Val-Asp-Ala-Asp-Glu-Thr	Ala-Cys-Glu-Gln-Asn-Pro-Ile-Tyr-Trp-Ala-Arg-Tyr-Ala-Asp-Trp-Leu-Phe-Thr-Thr-Pro-Leu-Leu-Leu-Leu-Asp-Leu-Ala-Leu-Leu-Val-Asp-Ala-Asp-Glu-Thr (TFA salt)
<b>Sequence Shortening:</b>	ACEQNPIYWARYADWLFTTPLLDDLALLVDADET	
<b>Target:</b>	Others	
<b>Pathway:</b>	Others	
<b>Storage:</b>	Sealed storage, away from moisture and light	
	Powder	-80°C 2 years -20°C 1 year
	* In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture and light)	

### BIOLOGICAL ACTIVITY

<b>Description</b>	pH-Low Insertion Peptide TFA (pHLIP TFA) is a short, pH-responsive peptide capable of inserting across a cell membrane to form a transmembrane helix at acidic pH. pH-Low Insertion Peptide TFA targets the acidic tumor microenvironment for tumors at early and metastatic stages with high specificity, used as a specific ligand. pH-Low Insertion Peptide TFA successfully modifies polylysine polymers to have the pH-responsive capability. pH-Low Insertion Peptide TFA-based targeting of cancer presents an opportunity to monitor metabolic changes and to selectively deliver imaging and therapeutic agents to tumors <sup>[1][2][3]</sup> .	
<b>In Vitro</b>	pH-Low Insertion Peptide TFA (5 μM, 2 h) combined with peptide nucleic acid (peptide nucleic acid, PNA) significantly increases PNA delivery at pH 6.2 in A549 cells <sup>[3]</sup> . MCE has not independently confirmed the accuracy of these methods. They are for reference only. Immunofluorescence <sup>[3]</sup>	
	Cell Line:	A549 cells
	Concentration:	5 μM
	Incubation Time:	2 h
	Result:	Significantly increases PNA delivery combined with PNA at pH 6.2 in A549 cells.
<b>In Vivo</b>	pH-Low Insertion Peptide TFA (50 μM, a single tail vein injection, 4, 24, and 48 h) variants shows the pH-dependent tumor targeting and different blood clearance profiles, the overall tumor spatial distributions are identical in murine 4T1 xenograft model <sup>[2]</sup> . pH-Low Insertion Peptide TFA (10 μM, i.v., a single dose for 24 h) can clearly differentiate between regions of primarily tumor cells and nonmalignant stromal tissues, also accumulates the hypoxia marker Pimonidazole (HY-105129A) and relates to the production of acidic glucose metabolites in MMTV-Py MT mice <sup>[2]</sup> . pH-Low Insertion Peptide TFA (0.2 μmol/kg, i.v., a single dose for 24 h) demonstrates excellent tumor targeting combined with PNA in mice seeded melanoma tumors <sup>[3]</sup> . MCE has not independently confirmed the accuracy of these methods. They are for reference only.	

Animal Model:	Murine 4T1 xenograft model <sup>[2]</sup>
Dosage:	50 $\mu$ M
Administration:	a single tail vein injection, tumors collected at 4, 24, and 48 h after administration
Result:	The spatial distribution and the intensity profiles of all pH-LIP TFAs in tumors were identical in murine 4T1 xenograft mode.
Animal Model:	FVB/N-Tg(MMTV-PyVT)634Mul/J transgenic female mice developed palpable mammary tumors at 12-15 weeks of age <sup>[2]</sup>
Dosage:	10 $\mu$ M
Administration:	i.v., a single dose for 24 h
Result:	Clearly differentiated between regions of primarily tumor cells and nonmalignant stromal tissues.
Animal Model:	6-week old C57BL/6 mice seeded melanoma tumors <sup>[3]</sup>
Dosage:	0.2 $\mu$ mol/kg
Administration:	intravenously injected via the retro-orbital sinus, a single dose for 24 h
Result:	All the pH-Low Insertion Peptide TFA-PNAs demonstrated excellent tumor targeting.

## REFERENCES

- [1]. Yushuang Wei, et al. pH-responsive pH-LIP (pH low insertion peptide) nanoclusters of superparamagnetic iron oxide nanoparticles as a tumor-selective MRI contrast agent. *Acta Biomater.* 2017 Jun;55:194-203.
- [2]. Adochite RC, et al. Targeting breast tumors with pH (low) insertion peptides[J]. *Mol Pharm.* 2014 Aug 4;11(8):2896-905.
- [3]. Svoronos AA, et al. Tumor-Targeted, Cytoplasmic Delivery of Large, Polar Molecules Using a pH-Low Insertion Peptide TFA [J]. *Mol Pharm.* 2020 Feb 3;17(2):461-471.

**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