

Title	Poly(ethylene glycol)-Based Peptidomimetic "PEGtide" of Oligo-Arginine allows for efficient siRNA Transfection and gene inhibition
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Publication date	2019-06-10
Original Citation	Hibbitts, A., O'Connor, A.M., McCarthy, J., Forde, E.B., Hessman, G., O'Driscoll, C.M., Cryan, S.A. and Devocelle, M., 2019. Poly (ethylene glycol)-Based Peptidomimetic "PEGtide" of Oligo-Arginine Allows for Efficient siRNA Transfection and Gene Inhibition. ACS Omega, 4(6), (10pp). DOI:10.1021/ acsomega.9b00265
Link to publisher's version	https://pubs.acs.org/doi/10.1021/acsomega.9b00265 - 10.1021/ acsomega.9b00265
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Download date	2025-05-13 15:10:36
Item downloaded from	https://hdl.handle.net/10468/9139



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## **Supporting Information**

## Poly(ethylene glycol)-Based Peptidomimetic "PEGtide" of Oligo-Arginine Allows for Efficient siRNA Transfection and Gene Inhibition

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Figure S3. <sup>1</sup>H NMR spectrum of poly(glycidyl *tert*-butylcarbamate) (1)

The signal at 3.46 ppm is caused by residual methanol.







Figure S5. <sup>1</sup>H NMR spectrum of poly(glycidyl *N*,*N*'-di-Boc-guanidine) (3)

Signals at 3.35 ppm and 2.11 ppm correspond to residual methanol and acetone, respectively. Signals at 5.25 and 4.67 ppm are attributed to the secondary and primary alcohols, respectively.



Figure S6. <sup>1</sup>H NMR spectrum of poly(glycidylguanidine)



Figure S7. MALDI-TOF MS spectrum of polyglycidylguanidine.

**Figure S8.** Optimisation of SuperFect pDNA and RNAiFect siRNA transfection conditions. A) pDNA dose, B) SuperFect-pDNA treatment time with cells prior to washing, C) total incubation time prior to lysis and luciferase analysis, D) SuperFect:pDNA transfection ratios and E) RNAiFect:siRNA transfection ratios using optimal pDNA transfection conditions.



**Table S1.** Settings for In Cell<sup>®</sup> 1000 Workstation analysis of Polymer-siRNA nanoparticle uptake into Calu-3 cells

			Min.		
Feature	Source	Segmentation	Area	Sensitivity	Collar
	Wave 1				
Nuclei	(Hoechst)	Top Hat	50µm <sup>2</sup>	100%	
Cell	Wave 2 (TRITC)	Collar	-	-	8µm
		Cytoplasm	0.05-		
Organelles	Wave 3 (FITC)	only	0.5µm	50%	-

**Table S2.** Settings for In Cell<sup>®</sup> 1000 Workstation analysis of Polymer siRNA nanoparticle induced toxicity in Calu-3 cells

			Min.		
Feature	Source	Segmentation	Area	Sensitivity	Collar
	Wave 1 (NA, NI,				
Nuclei	CN)	Top Hat	50µm <sup>2</sup>	100%	-
Cell					
	Wave 2 (PMP)	Collar	-	-	8µm
Reference					
1	Wave 3 (Cyt-C)	Pseudo-Cells	-	-	-
Reference					
2	Wave 4 (MMP)	Pseudo-Cells	-	-	-
Reference		Pseudo-			
3	Wave 2 (PMP)	Nuclei	-	-	-