

## Supplementary Information

### Plasmid DNA delivery using arginine-rich cell-penetrating L/D-peptides containing $\alpha$ -aminoisobutyric acids

Tomohiro Umeno, Hiroyasu Takemoto, Makoto Oba

Graduate School of Medical Science, Kyoto Prefectural University of Medicine 1-5 Shimogamohangi-cho,  
Sakyo-ku, Kyoto 606-0823, Japan

\*corresponding author:

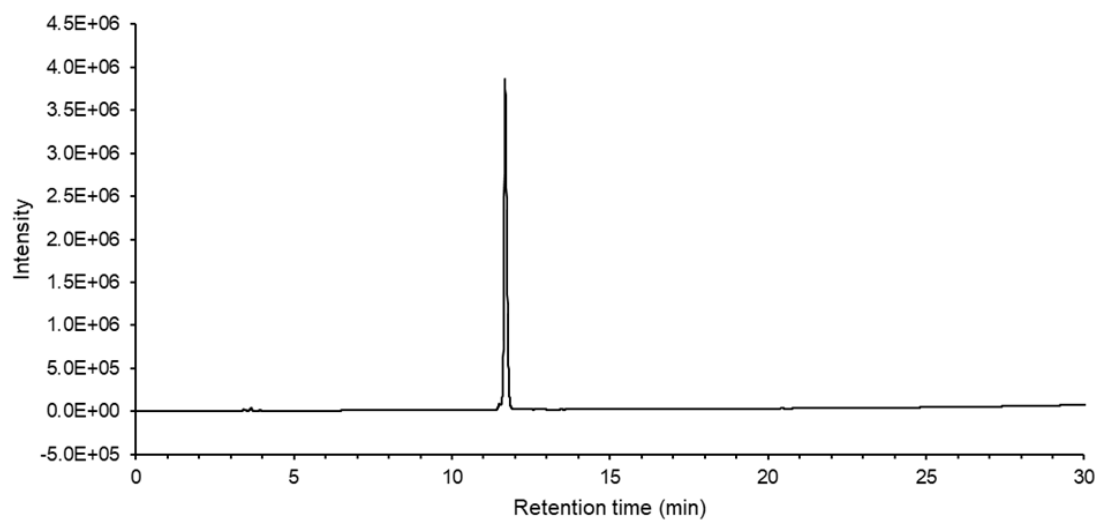
umeno@koto.kpu-m.ac.jp (T.U.).

moba@koto.kpu-m.ac.jp (M.O.).

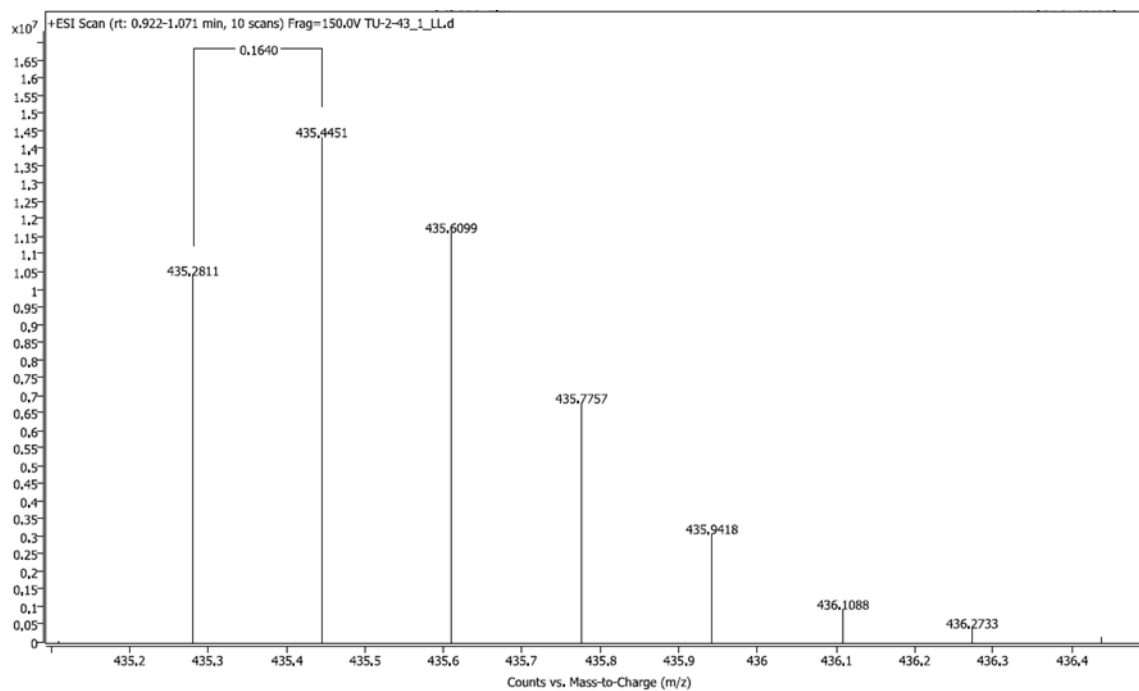
## Peptide Data.

Peptide 1: LC-MS (ESI<sup>+</sup>) calcd for C<sub>107</sub>H<sub>200</sub>N<sub>56</sub>O<sub>21</sub> [M+6H]<sup>6+</sup> 435.2790; found: 435.2811

## HPLC Chart

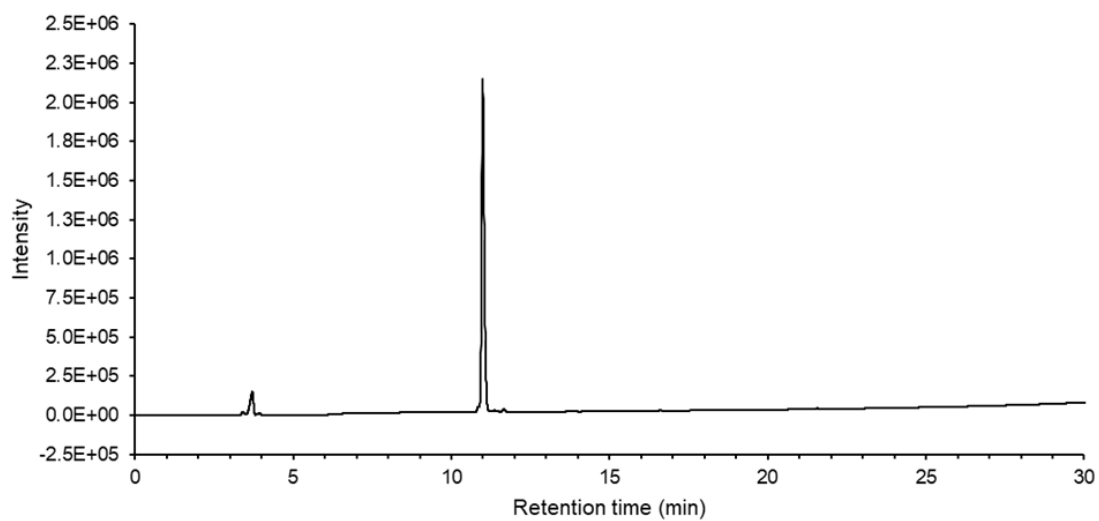


## ESI-TOF-MS

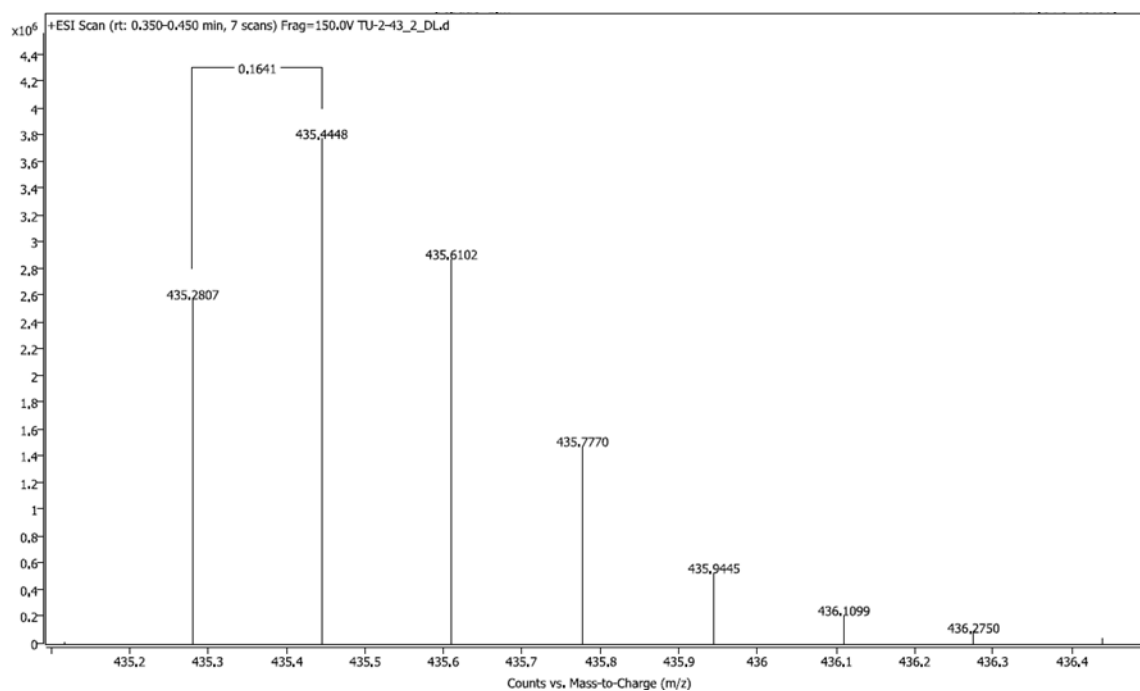


Peptide 2: LC-MS (ESI<sup>+</sup>) calcd for C<sub>107</sub>H<sub>200</sub>N<sub>56</sub>O<sub>21</sub> [M+6H]<sup>6+</sup> 435.2790; found: 435.2807

#### HPLC Chart

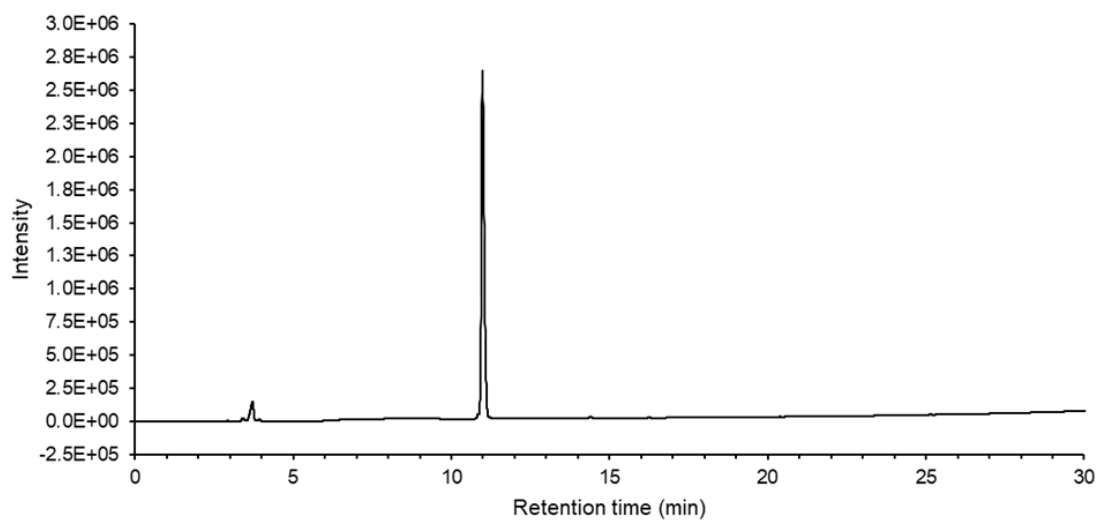


#### ESI-TOF-MS

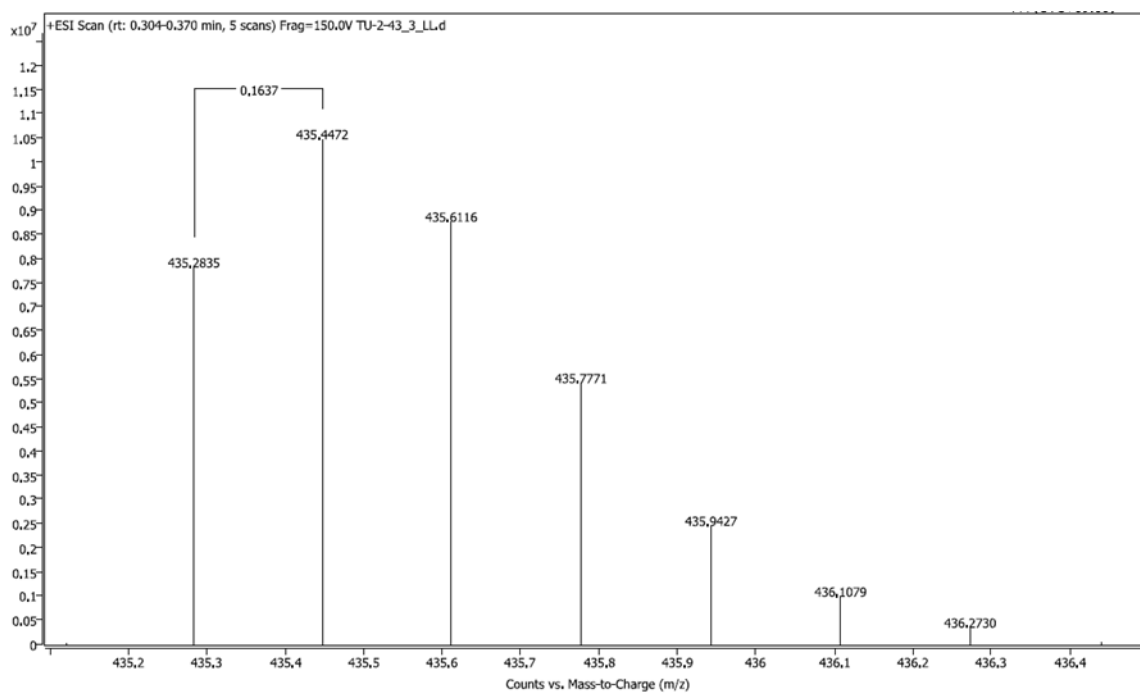


Peptide **3**: LC-MS (ESI<sup>+</sup>) calcd for C<sub>107</sub>H<sub>200</sub>N<sub>56</sub>O<sub>21</sub> [M+6H]<sup>6+</sup> 435.2790; found: 435.2835

#### HPLC Chart

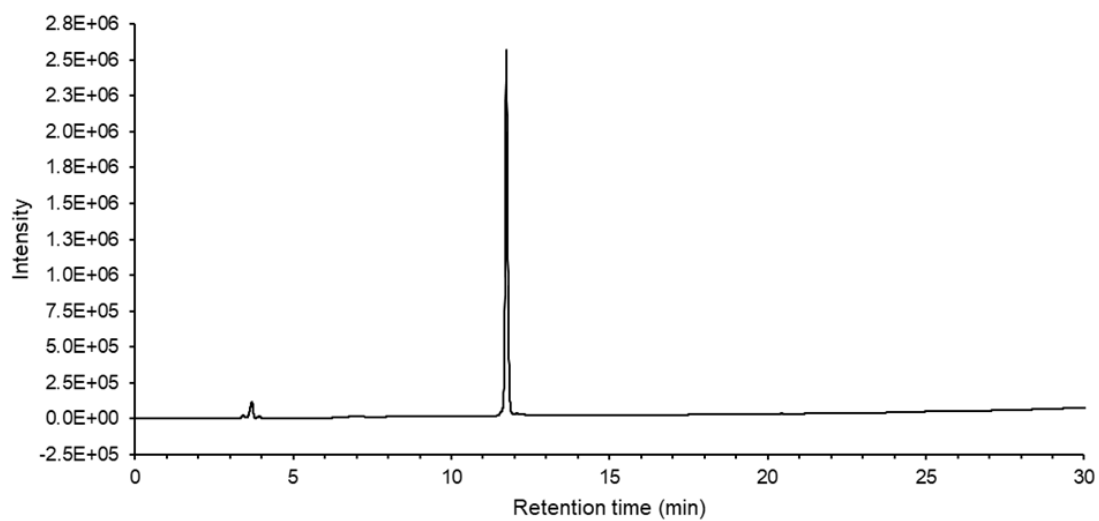


#### ESI-TOF-MS

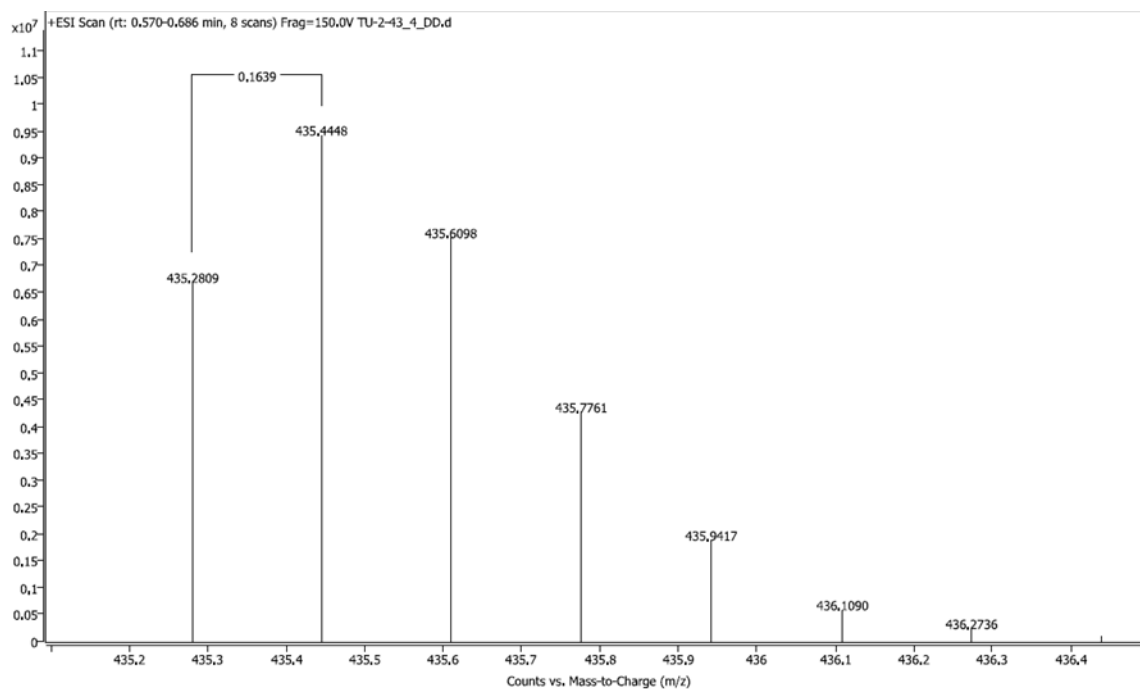


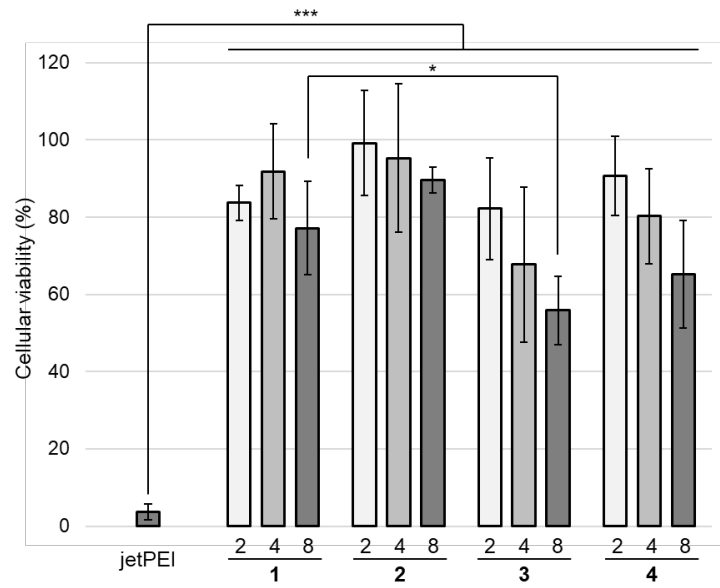
Peptide **3**: LC-MS (ESI<sup>+</sup>) calcd for C<sub>107</sub>H<sub>200</sub>N<sub>56</sub>O<sub>21</sub> [M+6H]<sup>6+</sup> 435.2790; found: 435.2809

#### HPLC Chart

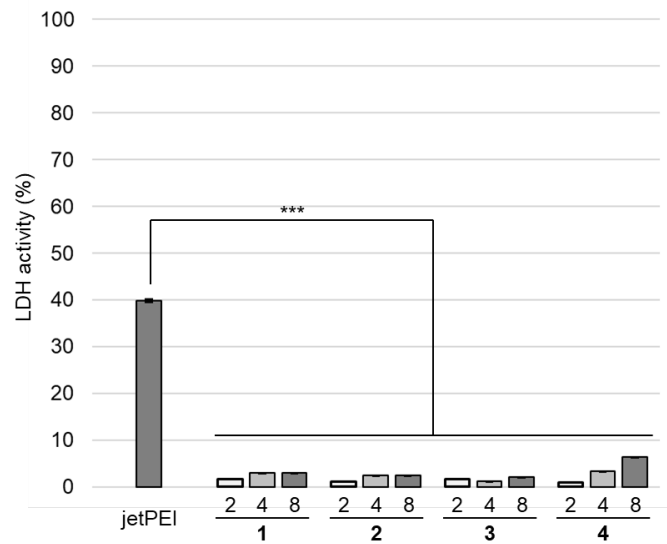


#### ESI-TOF-MS

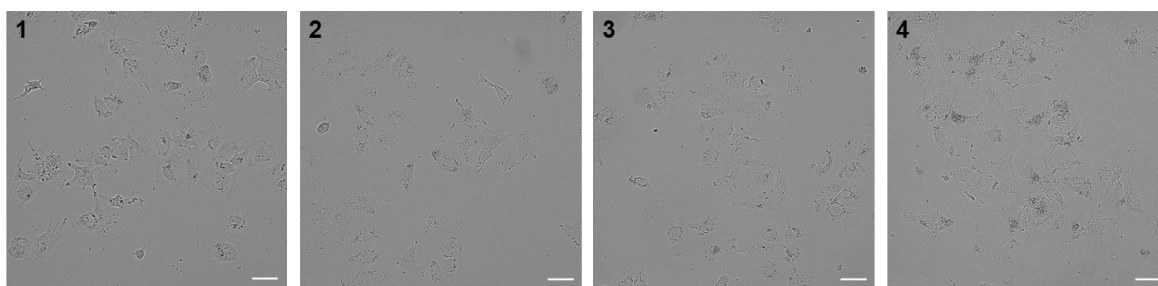




**Figure S1.** Cell viability of the peptide/pDNA complexes at N/P ratios of 2, 4, and 8 after 24 hours. The data are presented as a percentage of the untreated control cells. Error bars represent the standard deviation (n = 4). \* $p < 0.05$  and \*\*\* $p < 0.001$ .



**Figure S2.** LDH activity of the peptide/pDNA complexes at N/P ratios of 2, 4, and 8 after 24 hours. The data were presented as a percentage of the control cells lysed in lysis buffer. Error bars represent the standard deviation (n = 4). \*\*\* $p < 0.001$



**Figure S3.** Brightfield images of Huh-7 cells after 24 hours of treatment with peptide/pDNA complexes.