Supporting information

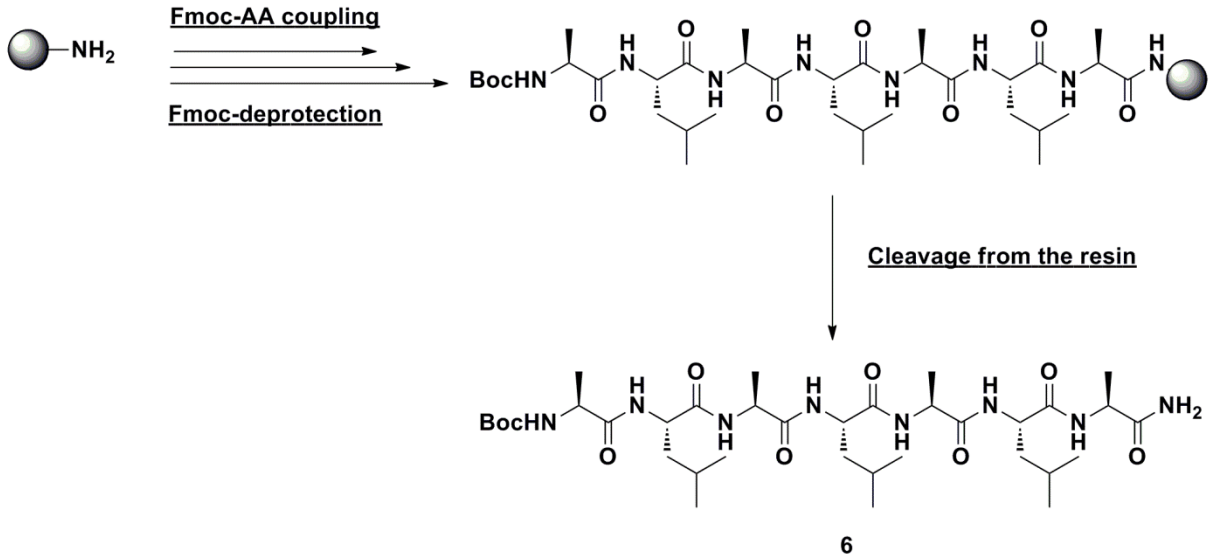
SYNTHESIS

Synthesis of homooligourea 5

Boc-Val^{u}-Ala^{u}-Leu^{u}-Val^{u}-Ala^{u}-Leu^{u}-NH$_2$ (5)

The synthesis of model homooligourea **5** was previously described[1].

Synthesis of α-heptapeptide 6 on solid support



Scheme S1 : Synthesis of peptide **6** on solid support using microwave irradiation.

Boc-Ala-Leu-Ala-Leu-Ala-Leu-Ala-NH$_2$ (6)

6 was synthesized according to GP1, GP2 and GP5, starting from Sieber resin (162mg, 0.10 mmol, loading: 0.62mmol/g) and Fmoc-α-AA (0.40 mmol, 4eq relative to the resin loading). The final product **6** was purified by semi preparative HPLC. 2 mg were obtained with total yield of 4%. **ESI-MS** (*M*w 740.93) *m/z* 741.20 $[M + H]^+$, 763.53 $[M + Na]^+$; **HPLC** (H_2O (0.1% TFA),MeOH (0.1% TFA); gradient 50-100%, 5 min; 100%, 5min) t_R = 5.74 min.

[1] Y. R. Nelli, S. Antunes, A. Salaün, E. Thinon, S. Massip, B. Kauffmann, C. Douat, G. Guichard, *Chem. Eur. J.* **2015**, *21*, 2870-2880.

ADDITIONAL ^{1}H-NMR DATA

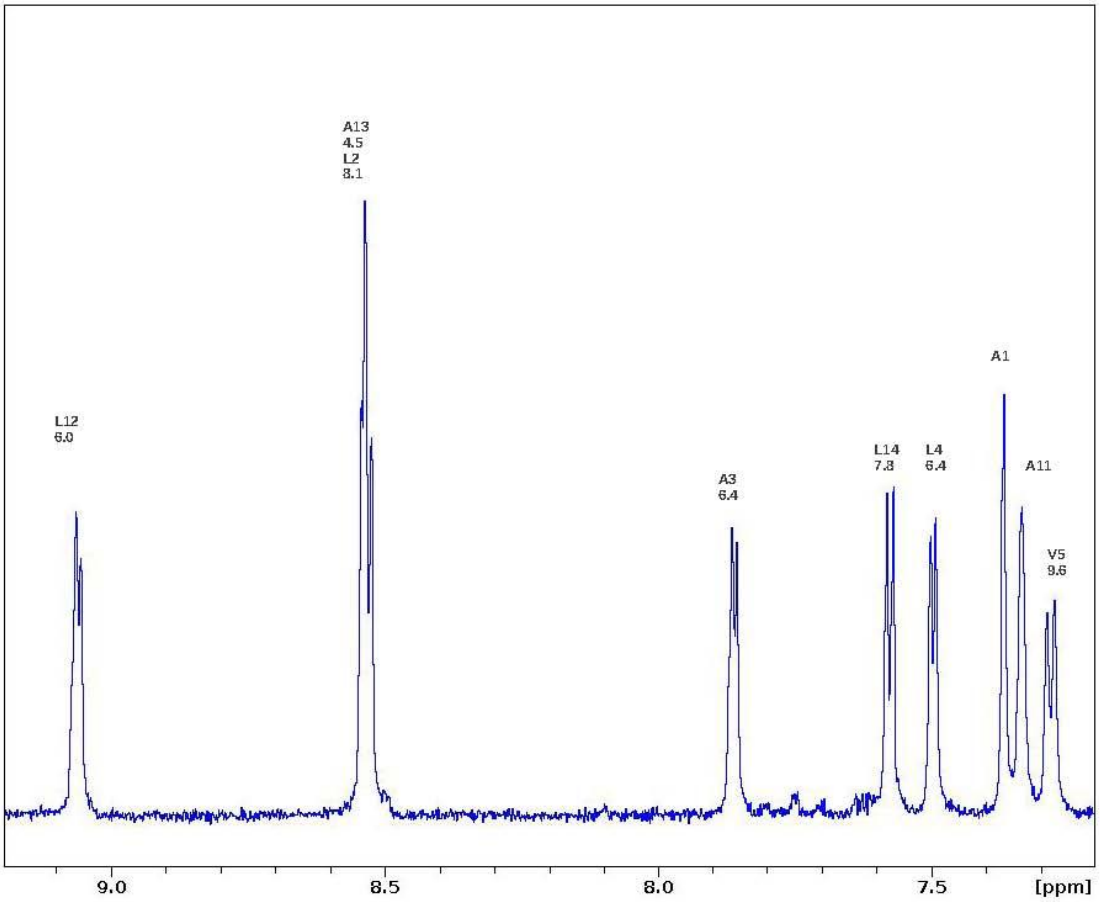


Figure S1. Amide NH resonances in the ^{1}H NMR spectrum of chimera 14-mer **1** recorded at 700 MHz in CD_3OH. Reported ^{3}J(NH, αCH) values for α-amino acid residues are in Hz.

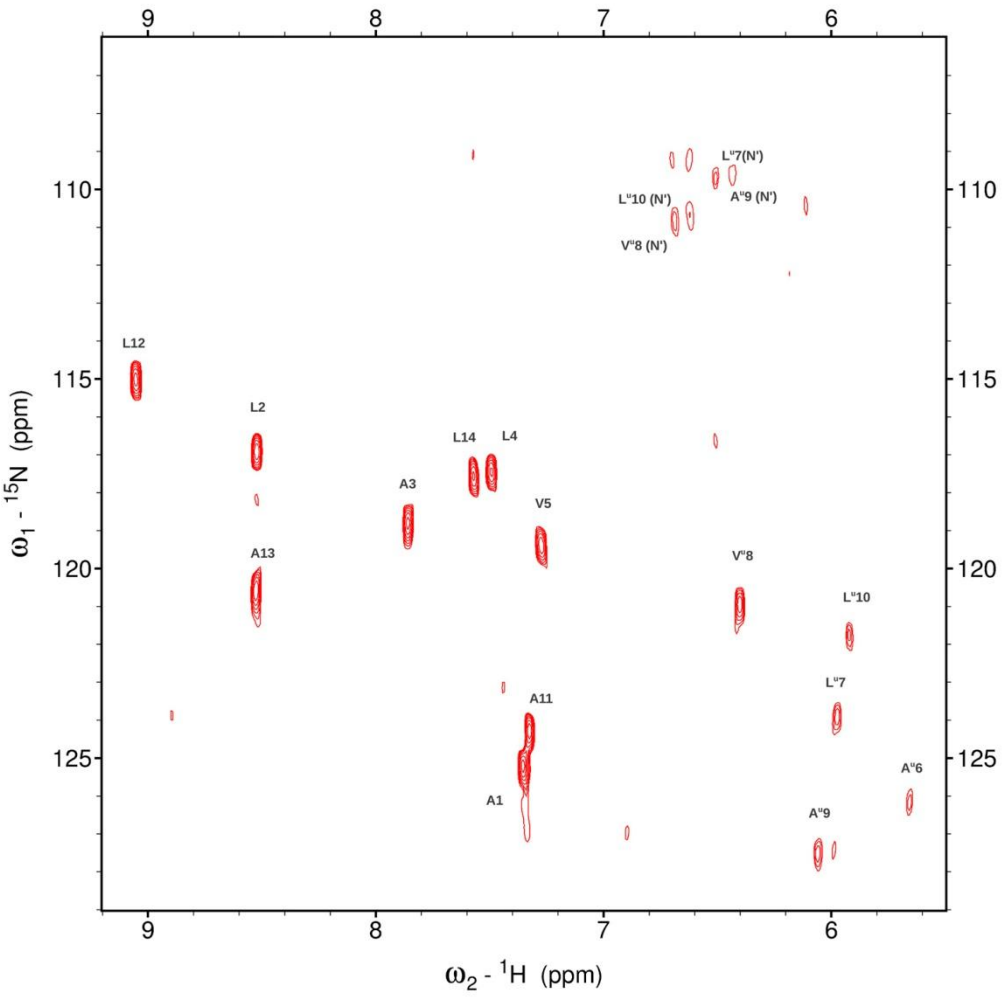


Figure S2. ^{1}H, ^{15}N-HSQC spectrum of **1** recorded at 700 MHz in CD_3OH.

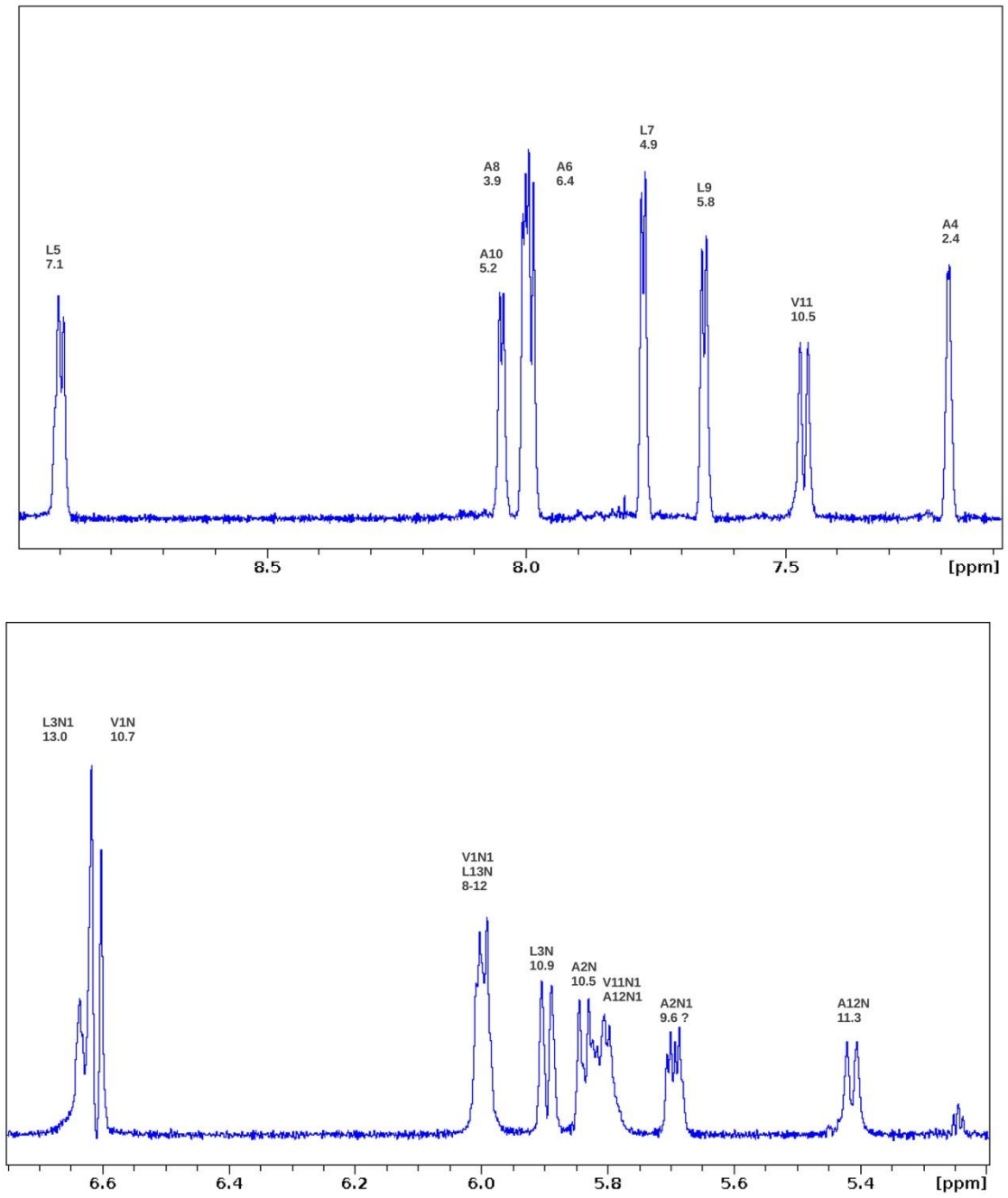


Figure S3. Amide NH resonances in the ^{1}H NMR spectrum of chimera 13-mer **2** recorded at 700 MHz in CD_3OH. Reported ^{3}J(NH, αCH) values for α-amino acid residues are in Hz.

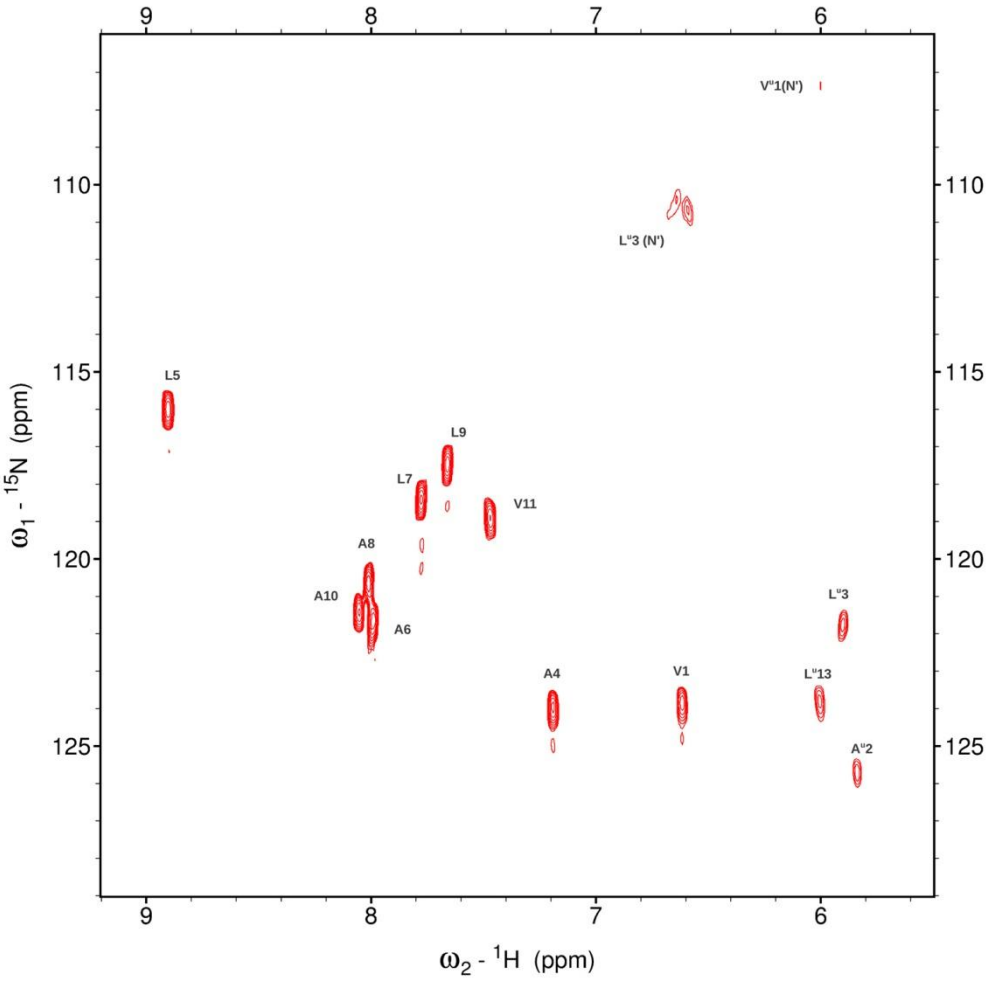


Figure S4. ^{1}H, ^{15}N-HSQC spectrum of **2** recorded at 700 MHz in CD_3OH.

Table S1 : ^3J(NH, $^\beta$CH) coupling constants (in Hertz) for ethylene diamine residues in the oligourea domains of chimera **1** in CD_3OH (700 MHz) at 4 mM

Compd	Solvant	*peptide*	Val^u	Ala^u	Leu^u	Val^u	Ala^u	Leu^u	*peptide*
1	CD_3OH	Boc-A-L-A-L	9.6	11.5	12.5	12.3	10.7	12.1	A-L-A-L-NH_2

Table S2 : ^3J(NH, $^\beta$CH) coupling constants (in Hertz) for ethylene diamine residues in the oligourea domains of chimera **2** in CD_3OH (700 MHz) at 4 mM

Compd	Solvant	Boc-Val^u	Ala^u	Leu^u	*peptide*	Val^u	Ala^u	Leu^u-NH_2
2	CD_3OH	10.7	9.6	10.9	A-L-A-L-A-L-A	10.5	11.3	ND

Circular dichroism

All CD spectra were recorded on a J-815 Jasco dichrographe (Jasco France, Nantes, France). Electronic Circular dichroism (ECD) spectra of chimeras **1** and **2**, oligourea **5** and heptapeptide **6** and were acquired between 300 and 180 nm at a concentration of 0.05 mM in MeOH or TFE using a quartz cell with a path length of 5 mm. Sample temperature was regulated at 20°C. Data were collected in continuous scan mode with a data pitch of 0.1 nm, a scanning speed of 50 nm.min^{-1}, 2 nm bandwith and 2 accumulations per sample. Sample Data were collected as raw ellipticity (ψ in mdeg) and converted to molar ellipticity [θ] in deg.cm^2.dmol^{-1} using the following equation:

$$[\theta] = \frac{\psi \times 10^{-3}}{l \times c}$$

Where *l* is the pathlength in cm, and *c* is the peptide concentration in dmol.cm^{-3}

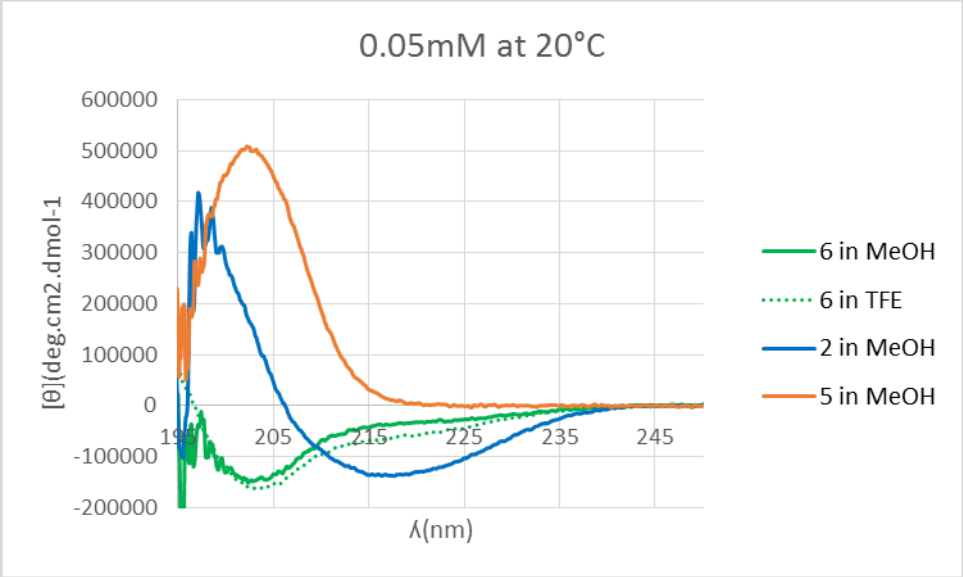


Figure S5: CD spectra of chimera **2** in MeOH, oligourea **5** in MeOH and peptide **6** in MeOH and TFE, all recorded at 20°C at 0.05mM.

Table S3: Molar ellipticity values at 222 nm for chimera **2**, oligourea **5** and peptide **6** (0.05mM).

		5	**2**	**6**
Solvant	Temperature	[θ] (deg.cm^2.dmol^{-1})	[θ] (deg.cm^2.dmol^{-1})	[θ] (deg.cm^2.dmol^{-1})
MeOH	20°C	2 181	-123 526	-31 267
TFE	20°C			-50 996

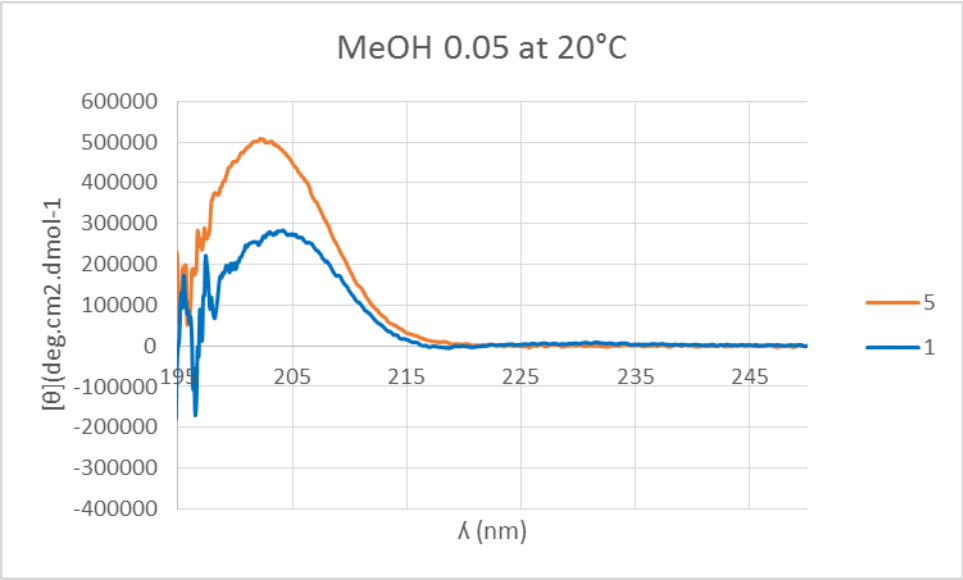


Figure S6: CD spectra of chimera **1** and oligourea **5** recorded at 20°C in MeOH at 0.05mM.