

Supplementary Figure 1: Kinetic profiles of IAPP self-assembly. a, Three representative kinetic profiles for a standard reaction of $10 \mu \mathrm{M}$ IAPP catalysed by the presence of $630 \mu \mathrm{M} \mathrm{LUVs}$ (DOPG:DOPC, 1:1, 100 nm ) (inset) A representative sigmoid fit (magenta) used to extract reaction midpoints, $50 . \quad \mathbf{b}$, Representative comparison of the kinetic profiles of $(10 \mu \mathrm{M})$ IAPP fibrillation in the absence (black) and presence (red) of $630 \mu \mathrm{M}$ LUVs. All experiments were conducted at least in triplicate with errors in the main text reported as $\pm$ one standard deviation.


Supplementary Figure 2: Effect of lipid headgroup anionic content on the catalysis of IAPP selfassembly. Representative (a) and statistics (b) of reaction midpoints, t50, for $10 \mu \mathrm{M}$ IAPP fibre formation reactions catalysed by extruded unilamellar vesicles ( $100 \mathrm{~nm}, 630 \mu \mathrm{M}$ monomer units, with DOPG:DOPC at the indicated ratio. Also shown are repeated reactions preformed in the presence of $1 \mu \mathrm{M}$ ADM-116. All experiments were conducted in triplicate with errors reported as $\pm$ one standard deviation.


Supplementary Figure 3: Imaging of ADM-116 inhibited assembly. Negative stain TEM images of liposome catalysed IAPP $(10 \mu \mathrm{M})$ self-assembly in the absence, $\mathbf{a}$, and presence, $\mathbf{b}$, of $10 \mu \mathrm{M}$ ADM116.


Supplementary Figure 4: Comparison of INS-1 and COS-1 rescue by ADM-116 and ADM-3. Statistics of toxic effect of IAPP applied to INS-1 cells or COS-1 cells and measured 48 h later using CTB. Data is shown for IAPP alone and with equimolar ratio of the indicated small molecule co-added at a $1: 1$ ratio. Data is renormalised to the toxicity induced only by IAPP. Error bars are standard deviations from three sets of experiments conducted on separate occasions with eight technical repeats.


Supplementary Figure 5: Rescue of INS-1 cells from IAPP induced toxicity. Statistics of toxic effect of $13 \mu \mathrm{M}$ IAPP applied at time-zero to INS-1 cells and measured 48 h later using CTB. Data is shown for IAPP alone and with equimolar mixtures of the indicated small molecule. Small molecule:IAPP complexes were permitted to form over a period of 14 h prior to adding to cells. In (a) data is presented as \% toxicity where the lower baseline is the CTB response measured by addition of IAPP-free buffer (vehicle). For the upper baseline, DMSO at $10 \%$ is used as it is wholly toxic to INS-1 cells. CTB response at this condition sets the value of $100 \%$ toxicity. Note that in other publications, analogous data is sometimes expressed as viability ( $100 \%$ - \%toxicity). In (b), the data in (a) is shown renormalised to the toxicity induced only by IAPP. Error bars are standard deviations from three sets of experiments conducted on separate occasions with eight technical repeats per set ( $\mathrm{n}=24$ ).


Supplementary Figure 6: Assessment of effect of small molecules on cell viability. INS-1 cells were incubated with $13 \mu \mathrm{M}$ of each of the indicated small molecules in a manner matched to that used for work shown in the main text (Fig. 4a). Viability was assayed after 48 h using CTB and compared to carrier-only controls. Error bars represent the standard deviation in the mean of four replicates.


Supplementary Figure 7: Solubility of ADM-116 in aqueous buffer. a, Diffusion of $13 \mu \mathrm{M}$ ADM-116 with 25 nM ADM- $116_{F}$ measured by FCS in 20 mM Tris, $\mathrm{pH} 7.4,10 \mathrm{mM} \mathrm{NaCl}$. A fit to a function that includes only a single diffusible species ( $\tau \mathrm{D}=100 \pm 20 \mu \mathrm{~s}$ ) is shown (red, see Methods).

Residuals of the fit are shown below the main data. $\mathbf{b},{ }^{1} \mathrm{H}$ NMR spectrum of the aromatic and amide region of ADM-116. Conditions were $20 \mu \mathrm{M}$ ADM-116 in 50 mM phosphate buffer, $\mathrm{pH} 7.4,100 \mathrm{mM}$ KCl . NMR spectrum was recorded on an Agilent DD2 NMR spectrometer at 600 MHz .


Supplementary Figure 8: Effect of ADM-116 on the assembly kinetics of IAPP $\mathbf{2 0}_{\mathbf{2 0} 2 \text {. }}$. Representative kinetic profile of amyloid assembly by $200 \mu \mathrm{M}$ of the 10 -residue peptide, $\mathrm{IAPP}_{20-29}$. Reactions are shown in the absence and presence of $200 \mu \mathrm{M}$ ADM-116 at equimolar ratio.


Supplementary Figure 9: Colocalisation of IAPP and ADM-3. INS-1 cells were exposed to a rescued condition $\left(13 \mu \mathrm{M} \mathrm{IAPP}\right.$ and $15 \mu \mathrm{M} \mathrm{ADM-3)} \mathrm{doped} \mathrm{with} 200 \mathrm{nM}$ ADM- $3_{F}$ and 100 nM IAPP $_{\text {A594 }}$ ). $\mathbf{a}$, IAPP and small molecule were added at the same time to culture media. $\mathbf{b}$, ADM-3 was added 20 h after addition of IAPP.


Supplementary Figure 10: ADM-116 induced conformational changes. a, Visible CD spectra of $25 \mu \mathrm{M}$ ADM-116 or ADM-116 ${ }_{P}$ in the presence of liposome ( $630 \mu \mathrm{M}$ in monomer units, DOPG:DOPC, 1:1, 100 nm ) and $25 \mu$ M IAPP. b, Far-UV CD spectra of $25 \mu$ M IAPP in the presence of ADM-116 or ADM-I116 at a ratio of 1:0.5 (IAPP:small molecule).


Supplementary Figure 11: Determination of background FRET in confocal imaging. Confocal imaging and processing for FRET was conducted in a manner matched to that used in the main text (Fig. 7c,d). Preparation of the cells was also matched except that the 100 nM IAPP $_{594}$ was augmented with $13 \mu \mathrm{M}$ unlabelled IAPP to dilute out any possibility of structure-specific FRET taking place.

Supplementary Figures 12-58 (NMR spectra, MALDI-TOF, ESI, and HPLC traces)


Supplementary Figure 12. ${ }^{1} \mathrm{H}$ NMR of 5.


Supplementary Figure 13. MALDI-TOF of 5.


Supplementary Figure 14. ${ }^{1} \mathrm{H}$ NMR of 6.


Supplementary Figure 15. MALDI-TOF of 6.


Supplementary Figure 16. ${ }^{\text {TH }} \mathrm{H}$-NMR of 8.


Supplementary Figure 17. MALDI-TOF of 8.


Supplementary Figure 18. ${ }^{1} \mathrm{H}-\mathrm{NMR}$ of 9.


Supplementary Figure 19. MALDI-TOF of 9.


Supplementary Figure 20. ${ }^{1} \mathrm{H}$-NMR of 10.


Supplementary Figure 21. MALDI-TOF of 10.


Supplementary Figure 22. ${ }^{1} \mathrm{H}-\mathrm{NMR}$ of 11.


Supplementary Figure 23. MALDI-TOF of 11.


Supplementary Figure 24. ${ }^{1} \mathrm{H}$-NMR of 12.


Supplementary Figure 25. MALDI-TOF of 12.


Supplementary Figure 26. ${ }^{1} \mathrm{H}$-NMR of 13 .


Supplementary Figure 27. MALDI-TOF of 13.



Supplementary Figure 29. MALDI-TOF of Tert-butyl of ADM-116I.


Supplementary Figure 30. ${ }^{1} \mathrm{H}-\mathrm{NMR}$ of tert-butyl of ADM-I116.


Supplementary Figure 31. MALDI-TOF of tert-butyl of ADM-I116.


Supplementary Figure 32. ${ }^{1}$ H-NMR of tert-butyl of ADM-116 ${ }_{P}$.


Supplementary Figure 33. MALDI-TOF of tert-butyl of ADM-116 ${ }_{P}$.


Supplementary Figure 34. ${ }^{1} \mathrm{H}-\mathrm{NMR}$ of ADM-116.

Supplementary Figure 35. ESI-MS of ADM-116.


Supplementary Figure 36. RP-HPLC of ADM-116.


Supplementary Figure 37. ${ }^{1} \mathrm{H}-\mathrm{NMR}$ of ADM-I116.


Supplementary Figure 38. ESI-MS of ADM-I116.


Supplementary Figure 39. RP-HPLC of ADM-I116.


Supplementary Figure 40. ${ }^{1} \mathrm{H}-\mathrm{NMR}$ of ADM-116।.


Supplementary Figure 41. ESI-MS of ADM-116I.


Supplementary Figure 42. RP-HPLC of ADM-116I.


Supplementary Figure 43. ${ }^{1} \mathrm{H}-\mathrm{NMR}$ of $\mathrm{ADM}-116_{P}$.


Supplementary Figure 44. ESI-MS of ADM-116 ${ }_{P}$.


Supplementary Figure 45. RP-HPLC of ADM-116 .


Supplementary Figure 46. ${ }^{1} \mathrm{H}-\mathrm{NMR}$ of $\mathrm{ADM}-116_{M}$.


Supplementary Figure 47. ESI-MS of ADM-116 ${ }_{M}$.


Supplementary Figure 48. RP-HPLC of ADM-116 ${ }_{M}$.


Supplementary Figure 49. ${ }^{1} \mathrm{H}-\mathrm{NMR}$ of tert-butyl ADM-3-NCS.


Supplementary Figure 50. ESI-MS of tert-butyl ADM-3-NCS.


Supplementary Figure 51. ${ }^{1} \mathrm{H}-\mathrm{NMR}$ of tert-butyl ADM-3 ${ }_{F}$.


Supplementary Figure 52. ESI-MS of tert-butyl ADM-3 . $^{\text {. }}$


Supplementary Figure 53. ${ }^{1} \mathrm{H}-\mathrm{NMR}$ of $\mathrm{ADM}-3_{F}$.


Supplementary Figure 54. ESI-MS of ADM-3 $F_{F}$.


Supplementary Figure 55. RP-HPLC trace of ADM-3 . $_{\text {. }}$


Supplementary Figure 56. ${ }^{1} \mathrm{H}-\mathrm{NMR}$ of $\mathrm{ADM}-116_{F}$.


Supplementary Figure 57. ESI-MS of ADM-116 ${ }_{F}$.


Supplementary Figure 58. RP-HPLC trace of ADM-116 .



Supplementary Figure 60. Generic representation for the synthesis of oligoquinolines. (a) 2-chloro-1methylpyridinium iodide, dichloromethane (anhydrous), trimethylamine (anhydrous), $12 \mathrm{~h}, 50^{\circ} \mathrm{C}$. (b) $\mathrm{H}_{2}(\mathrm{~g})$, $\mathrm{Pd} / \mathrm{C}$, ethylacetate, 12 h , r.t. (c) 2, 2-chloro-1-methylpyridinium iodide, dichloromethane, trimethylamine, 12 h, $50{ }^{\circ} \mathrm{C}$. (d) $\mathrm{H}_{2}$ (g), $\mathrm{Pd} / \mathrm{C}$, ethylacetate, 12 h , r.t. (e) 6, 2-chloro-1-methylpyridinium iodide, dichloromethane (anhydrous), trimethylamine (anhydrous), $12 \mathrm{~h}, 50^{\circ} \mathrm{C}$. (f) Triflouroacetic acid, dichloromethane, triethylsilane, 4 h, r.t.


Supplementary Figure 61. Synthesis of ADM-116|. (a) 2-chloro-1-methylpyridinium iodide, dichloromethane (anhydrous), trimethylamine (anhydrous), $12 \mathrm{~h}, 50^{\circ} \mathrm{C} .(\mathrm{b}) \mathrm{H}_{2}(\mathrm{~g}), \mathrm{Pd} / \mathrm{C}$, ethylacetate, 12 h , r.t. (c) 6, 2-chloro-1-methylpyridinium iodide, dichloromethane, trimethylamine, $12 \mathrm{~h}, 50^{\circ} \mathrm{C}$. (d) $\mathrm{H}_{2}$ (g), $\mathrm{Pd} / \mathrm{C}$, ethylacetate, 12 h , r.t. (e) 2, 2-chloro-1-methylpyridinium iodide, dichloromethane (anhydrous), trimethylamine (anhydrous), $12 \mathrm{~h}, 50^{\circ} \mathrm{C}$. (f) $\mathrm{H}_{2}$ (g), $\mathrm{Pd} / \mathrm{C}$, ethylacetate, 12 h , r.t. (g) 6, 2-chloro-1-methylpyridinium iodide, dichloromethane (anhydrous), trimethylamine (anhydrous), $12 \mathrm{~h}, 50$ ${ }^{\circ} \mathrm{C}$. (h) Triflouroacetic acid, dichloromethane, triethylsilane, 4 h, r.t.


Supplementary Figure 62. Synthesis of ADM-|116. (a) $\mathrm{H}_{2}(\mathrm{~g}), \mathrm{Pd} / \mathrm{C}$, ethylacetate, 12 h, r.t. (b) 2, 2-chloro-1-methylpyridinium iodide, dichloromethane (anhydrous), trimethylamine (anhydrous), 12 h , $50^{\circ} \mathrm{C}$. (c) Triflouroacetic acid, dichloromethane, triethylsilane, 4 h, r.t.


Supplementary Figure 63. Synthesis of ADM-116 ${ }_{F}$. (a) Ethylene diamine, 4-dimethylaminopyridine, $50{ }^{\circ} \mathrm{C}, 20 \mathrm{~h}$. (b) Triflouroacetic acid, dichloromethane, 4 h , r.t. (c) Fluorescein-5-isothiocyanate, pyridine (anhydrous), $\mathrm{N}, \mathrm{N}$-diisopropylethylamine (anhydrous), 20 h , r.t.


Supplementary Figure 64. Synthesis of ADM-3 $\mathbf{F}_{\boldsymbol{F}}$ ( a) $\mathrm{H}_{2}(\mathrm{~g}), \mathrm{Pd} / \mathrm{C}$, tetrahydrofuran, 4 h, r.t. (b) 1,1'-thiocarbonyldi-2,2'-pyridone, dichloromethane (anhydrous), 12 h, r.t. (c) 5(Aminoacetamido)Fluorescein, dichloromethane (anhydrous), N,N-diisopropylethylamine (anhydrous), 20 h, r.t. (d) Triflouroacetic acid, dichloromethane (anhydrous), triethylsilane, 4 h, r.t.


## Supplementary Table 1

| Compound | $K_{a} \times 10^{6}$ <br> $\left(\mathbf{M}^{-1}\right)$ | n | $\begin{gathered} \Delta \mathbf{H} \\ \left(\mathbf{k J} \mathrm{mol}^{-1}\right) \end{gathered}$ | $\begin{gathered} \Delta \mathrm{S} \\ \left(\mathbf{k J ~ m o l}^{-1} \mathbf{K}^{-1}\right) \end{gathered}$ | $\begin{gathered} \mathrm{T} \Delta \mathrm{~S} \\ \left(\mathbf{k J} \mathrm{~mol}^{-1}\right) \end{gathered}$ | $\begin{gathered} \Delta G \\ \left(\mathrm{~kJ} \mathrm{~mol}^{-1}\right) \end{gathered}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| ADM-116 | $2.8 \pm 0.3$ | $1.0 \pm 0.1$ | $-510 \pm 120$ | $-1.7 \pm 0.3$ | $-470 \pm 90$ | $-37 \pm 4$ |
| ADM-I116 | $0.9 \pm 0.2$ | $0.8 \pm 0.1$ | $-82 \pm 8$ | $-0.17 \pm 0.03$ | $-49 \pm 9$ | $-33 \pm 7$ |
| ADM-116 ${ }_{P}$ | $1.1 \pm 0.1$ | $0.9 \pm 0.1$ | $-1100 \pm 70$ | $-3.7 \pm 0.2$ | $-1070 \pm 70$ | $-34 \pm 3$ |

Binding affinities. ITC-derived thermodynamic parameters for the binding of the indicated ligands with IAPP. Presented errors are the standard deviation from experiments performed at least three times.

## Supplementary Table 2

| Compound | \% yield |
| :---: | :---: |
| 1 | 75 |
| 2 | 73 |
| 3 | 92 |
| 5 | 82 |
| 6 | 93 |
| 7 | 96 |
| 8 | 86 |
| 9 | 78 |
| 10 | 71 |
| 11 | 78 |
| 12 | 83 |
| 13 | 71 |
| ADM-116 | 74 |
| Tert-butyl ADM-I116 | 69 |
| ADM-I116 | 72 |
| Tert-butyl ADM-116\| | 72 |
| ADM-116\| | 66 |
| Tert-butyl ADM-116 ${ }_{P}$ | 62 |
| ADM-116 ${ }_{P}$ | 67 |
| Tert-butyl ADM-116M | 64 |
| ADM-116 ${ }_{M}$ | 68 |


| ADM-116 | 25\% (overall yield for three steps) |
| :---: | :---: |
| Tert-butyl ADM-3-NH |  |
| Tert-butyl ADM-3-NCS | $98 \%$ |
| Tert-butyl ADM-3 |  |
| ADM-3 | $91 \%$ |
|  | $76 \%$ |

\% yield. A combined \% yield for the monomeric precursors and the oligomers of oligoquinolines used in this study.

## Supplementary Methods

Synthesis of compounds 1,2,3, and 4 is reported elsewhere ${ }^{1}$.


To a solution of $4(5 \mathrm{~g}, 20 \mathrm{mmol})$ in acetone/ dimethylformamide ( 160 mL , $15: 1 \mathrm{v} / \mathrm{v})$, sodium carbonate ( $4.1 \mathrm{~g}, 30 \mathrm{mmol}$ ) was added followed by ethyl iodide ( $3.2 \mathrm{~mL}, 40 \mathrm{mmol}$ ) under an inert atmosphere. The solution was stirred overnight at $70{ }^{\circ} \mathrm{C}$ under an inert atmosphere. The volatiles were removed on rotovap and the reaction mixture was dissolved in ethylacetate ( 300 mL ) and water (300 $\mathrm{mL})$. The water layer was washed with ethylacetate $(2 \times 100 \mathrm{~mL})$. The organic solutions were collected and successively washed ( $2 \times$ each ) with water $(20 \mathrm{~mL}), 0.5 \mathrm{M}$ solution of $\mathrm{HCl}(20 \mathrm{~mL})$, and with brine ( 20 mL ), dried over sodium sulfate and evaporated under vacuum to afford 5 as a pale yellow solid (3.3 $\mathrm{g}, 60 \%$ ) which was recrystallised in $\mathrm{CHCl}_{3} / \mathrm{MeOH}(120,1: 4 \mathrm{v} / \mathrm{v})$. TLC (Hexane:Ethylacetate, 70:30 $\mathrm{v} / \mathrm{v}): \mathrm{R}_{\mathrm{F}}=0.7 ;{ }^{1} \mathrm{H}$ NMR (400 MHz, Chloroform-d) $\delta 8.53-8.40(\mathrm{dd}, J=8.5,1.4 \mathrm{~Hz}, 1 \mathrm{H}), 8.19-8.04$ (dd, $J=7.5,1.4 \mathrm{~Hz}, 1 \mathrm{H}), 7.68-7.66(\mathrm{~s}, 1 \mathrm{H}), 7.65-7.61(\mathrm{~m}, 1 \mathrm{H}), 4.45-4.35(\mathrm{q}, J=7.0 \mathrm{~Hz}, 2 \mathrm{H}), 4.06$ $-4.01(\mathrm{~s}, 3 \mathrm{H}), 1.65-1.59(\mathrm{t}, J=7.0 \mathrm{~Hz}, 4 \mathrm{H}) . \mathrm{MS}(\mathrm{MALDI}-\mathrm{TOF})$ calcd for $\mathrm{C}_{13} \mathrm{H}_{12} \mathrm{~N}_{2} \mathrm{O}_{5}(\mathrm{M}+\mathrm{H}+)$, 276.25, obsd: 276.58.


To a solution of $5(2.0 \mathrm{~g}, 7.2 \mathrm{mmol})$ in tetrahydrofuran $(100 \mathrm{~mL})$, lithium hydroxide $(0.2 \mathrm{~N})$ in water ( 55 mL ) was adeed and the solution was stirred for 45 min . Acetic acid (conc.) was then added with constant stirring to bring down the pH to $\sim 4$. To this reaction mixture, dichloromethane ( 200 mL ) was added and the organic layer was successively washed once with water ( 20 mL ) and brine ( 20 mL ), dried over sodium sulfate, filtered, and evaporated to afford compound 6 as a yellow solid (Table 1 for $\%$ yield).
${ }^{1} \mathrm{H}$ NMR $(400 \mathrm{MHz}$, Chloroform- $d) \delta 8.59-8.51(\mathrm{dd}, J=8.5,1.4 \mathrm{~Hz}, 1 \mathrm{H}), 8.26-8.20(\mathrm{dd}, J=7.5,1.4$ $\mathrm{Hz}, 1 \mathrm{H}), 7.76-7.69(\mathrm{~m}, 2 \mathrm{H}), 4.50-4.41(\mathrm{q}, J=7.0 \mathrm{~Hz}, 2 \mathrm{H}), 1.68-1.62(\mathrm{t}, J=7.0 \mathrm{~Hz}, 3 \mathrm{H}) . \mathrm{MS}$ (MALDI-TOF) $(\mathrm{m} / \mathrm{z})$ : calculated for $\mathrm{C}_{12} \mathrm{H}_{10} \mathrm{~N}_{2} \mathrm{O}_{5}[(\mathrm{M}+\mathrm{H})+]:$ 262.22, found 262.70.

## Standard protocol for reduction of nitro-oligoquinolines

To a solution of nitroquinoline ( $0.1-0.5 \mathrm{mmol}$ ) in ethylacetate $(10 \mathrm{~mL}), \mathrm{Pd} / \mathrm{C}(10 \% \mathrm{wt}$.$) was added and$ the reaction started with constant stirring at r . t. in the atmosphere of $\mathrm{H}_{2}(\mathrm{~g})$. The progress of the reaction was monitored by TLC. Generally, the reduction reactions were completed in 12 h . The reaction mixture was filtered and dried which result in a yellow solid with quantitative yield. The product was used in the next step without further characterisation.

## Standard protocol for amide coupling

To a solution of COOH nitroquinoline ( 0.12 mmol ) in anhydrous dichloromethane ( 10 mL ), triethylamine ( 0.4 mmol , anhydrous) and 2-chloromethyl-1-methyl pyridinium iodide ( 0.12 mmol ) were added and the reaction was refluxed for 20 min . at $50{ }^{\circ} \mathrm{C}$ under inert atmosphere. To this solution, amino-oligoquinoline $(0.1 \mathrm{mmol})$ was added and reaction started with constant stirring at $50{ }^{\circ} \mathrm{C}$ under inert atmosphere. The reaction mixture was stirred for 12 h after which the volatiles were removed on rotovap. Flash chromatography ( 0 to $35 \%$ ethylacetate in hexane, v/v) yielded the desired product as a yellow to brown solid.

## Standard protocol for deprotection of oligoquinolines

To a solution of oligoquinoline ( 0.04 mmol ), in dichloromethane ( 2 mL ), triethylsilane ( 0.1 mL , excess) and trifluoroacetic acid ( 0.5 mL , excess) were added and the reaction solution was stirred at r.t. for 4 h . The reaction mixture was dried and washed with cold diethyl ether ( $4 \times 3 \mathrm{~mL}$ ) which resulted in a yellow to brown solid.

## Tert-butyl ADM-3

Synthsis and characterisation of tert-butyl ADM-3 was reported elsewhere ${ }^{2}$.


To a solution of tert-butyl ADM-3 ( $30 \mathrm{mg}, 0.04 \mathrm{mmol}$ ) in tetrahydrofuran $(5 \mathrm{~mL}), \mathrm{Pd} / \mathrm{C}(5 \mathrm{mg})$ was added and the reaction started with constant stirring in the atmosphere of $\mathrm{H}_{2}(\mathrm{~g})$ at r . t . The progress of the reaction was monitored using TLC. The disappearance of the starting material confirms the completion of the reaction (after 6 h). The reaction mixture was filtered and the filterate was dried over rotovap to afford the desired product as a yellow solid ( $26.5 \mathrm{mg}, 95 \%$ ). TLC (Hexane:Ethylacetate, 60:40 v/v): $\mathrm{R}_{\mathrm{F}}=0.55$.

To a solution of tert-butyl ADM-3- $\mathrm{NH}_{2}$ ( $25 \mathrm{mg}, 0.036 \mathrm{mmol}$ ) in dichloromethane ( 5 mL , anhydrous), 1,1' thiocarbonyldi-2,2'-pyridone ( $10 \mathrm{mg}, 0.043 \mathrm{mmol}, 1.2 \mathrm{eq} .$, ) was added and the reaction was started with continuous stirring under inert atmosphere. The reaction solution was stirred overnight and then the product was purified using column charomatography ( $24 \mathrm{mg}, 91 \%$ ). TLC (Hexane:Ethylacetate, 70:30 v/v): $\mathrm{R}_{\mathrm{F}}=0.76 ;{ }^{1} \mathrm{H}$ NMR (400 MHz, Chloroform- $d$ ) $\delta 10.52-10.33(\mathrm{~s}, 1 \mathrm{H})$, $10.22-10.05(\mathrm{~s}, 1 \mathrm{H}), 9.10-8.89(\mathrm{dd}, J=8.2,2.7 \mathrm{~Hz}, 2 \mathrm{H}), 8.06-8.00$ $(\mathrm{m}, 1 \mathrm{H}), 7.99-7.91(\mathrm{t}, J=8.0 \mathrm{~Hz}, 2 \mathrm{H}), 7.90-7.84(\mathrm{~d}, J=8.1 \mathrm{~Hz}, 1 \mathrm{H})$, $5.02-4.97(\mathrm{~d}, J=2.0 \mathrm{~Hz}, 4 \mathrm{H}), 4.48-4.43(\mathrm{~d}, J=6.8 \mathrm{~Hz}, 2 \mathrm{H}), 3.97-$ $3.91(\mathrm{~s}, 3 \mathrm{H}), 1.50-1.46(\mathrm{~s}, 10 \mathrm{H}), 1.46-1.41(\mathrm{~s}, 9 \mathrm{H}), 1.17-1.14(\mathrm{~s}$,


3H). MS (MALDI-TOF) calcd for $\mathrm{C}_{34} \mathrm{H}_{39} \mathrm{~N}_{6} \mathrm{O}_{11} \mathrm{~S}\left(\mathrm{M}+\mathrm{H}^{+}\right)$, 739.2398, obsd: 739.2368.


TLC (dichloromethane:methanol:triethylamine, 83:17:0.5, $\mathrm{v} / \mathrm{v} / \mathrm{v}): \mathrm{R}_{\mathrm{F}}=0.6 ;{ }^{1} \mathrm{H}$ NMR ( 500 MHz, DMSO- $d_{6}$ ) $\delta 10.81-$ $10.58(\mathrm{~s}, 1 \mathrm{H}), 10.43-10.31(\mathrm{~s}, 1 \mathrm{H}), 10.10-10.04(\mathrm{~s}, 1 \mathrm{H})$, $9.97-9.89(\mathrm{~s}, 1 \mathrm{H}), 9.14-9.03(\mathrm{~d}, J=8.3 \mathrm{~Hz}, 2 \mathrm{H}), 8.90-$ $8.85(\mathrm{~d}, J=8.0 \mathrm{~Hz}, 1 \mathrm{H}), 8.84-8.78(\mathrm{~d}, J=8.1 \mathrm{~Hz}, 1 \mathrm{H})$, $8.35-8.31(\mathrm{~m}, 1 \mathrm{H}), 7.92-7.88(\mathrm{~d}, J=8.0 \mathrm{~Hz}, 1 \mathrm{H}), 7.87-$ $7.80(\mathrm{~m}, 3 \mathrm{H}), 7.28-7.16(\mathrm{~d}, J=8.3 \mathrm{~Hz}, 1 \mathrm{H}), 6.67-6.64$ (d, $J=2.3 \mathrm{~Hz}, 2 \mathrm{H}), 6.61-6.57(\mathrm{~d}, J=8.7 \mathrm{~Hz}, 2 \mathrm{H}), 6.55-$ $6.50(\mathrm{dd}, J=8.7,2.4 \mathrm{~Hz}, 2 \mathrm{H}), 5.15-5.07(\mathrm{~s}, 2 \mathrm{H}), 5.03-$ $4.96(\mathrm{~s}, 2 \mathrm{H}), 4.51-4.45(\mathrm{~m}, 2 \mathrm{H}), 4.43-4.37(\mathrm{~d}, J=6.8$ $\mathrm{Hz}, 2 \mathrm{H}), 3.89-3.78(\mathrm{~s}, 3 \mathrm{H}), 1.43-1.39(\mathrm{~s}, 9 \mathrm{H}), 1.35-$ 1.32 (s, 9H), 1.12 - 1.10 (s, 3H). MS (MALDI-TOF) calcd for $\mathrm{C}_{56} \mathrm{H}_{55} \mathrm{~N}_{8} \mathrm{O}_{17} \mathrm{~S}\left(\mathrm{M}+\mathrm{H}^{+}\right), 1143.3406$, obsd: 1143.3453.

## $\mathrm{ADM}_{\mathbf{- 3}}^{\boldsymbol{F}}$

${ }^{1} \mathrm{H}$ NMR ( 600 MHz, DMSO- $d_{6}$ ) $\delta 13.47-12.91$ (s, 2H), $10.81-10.56(\mathrm{~s}, 1 \mathrm{H}), 10.50-10.32$ (s, $1 \mathrm{H}), 10.17-10.01(\mathrm{~s}, 3 \mathrm{H}), 10.04-9.88(\mathrm{~s}, 1 \mathrm{H})$, $9.13-9.07(\mathrm{~d}, J=8.4 \mathrm{~Hz}, 2 \mathrm{H}), 8.92-8.87(\mathrm{~d}, J=$
$7.9 \mathrm{~Hz}, 1 \mathrm{H}), 8.85-8.80(\mathrm{~d}, J=8.0 \mathrm{~Hz}, 1 \mathrm{H}), 8.34$ $-8.26(\mathrm{~d}, J=1.9 \mathrm{~Hz}, 1 \mathrm{H}), 7.92-7.88(\mathrm{~d}, J=8.0$ $\mathrm{Hz}, 1 \mathrm{H}), 7.88-7.84(\mathrm{dd}, J=8.1,4.0 \mathrm{~Hz}, 2 \mathrm{H})$, $7.83-7.79(\mathrm{dd}, J=8.4,2.0 \mathrm{~Hz}, 1 \mathrm{H}), 7.26-7.19$ $(\mathrm{d}, J=8.3 \mathrm{~Hz}, 1 \mathrm{H}), 6.67-6.62(\mathrm{~d}, J=2.3 \mathrm{~Hz}$, $2 \mathrm{H}), 6.61-6.56(\mathrm{~d}, J=8.6 \mathrm{~Hz}, 2 \mathrm{H}), 6.54-6.52$ $(\mathrm{d}, J=2.3 \mathrm{~Hz}, 1 \mathrm{H}), 6.52-6.50(\mathrm{~d}, J=2.4 \mathrm{~Hz}$, 1H), $5.19-5.11(\mathrm{~s}, 2 \mathrm{H}), 5.12-5.05(\mathrm{~s}, 2 \mathrm{H}), 4.51$ $-4.43(\mathrm{~d}, J=4.8 \mathrm{~Hz}, 2 \mathrm{H}), 4.42-4.32(\mathrm{~d}, J=6.9$ $\mathrm{Hz}, 2 \mathrm{H}), 3.87-3.78$ (s, 3H), $1.06-1.04(\mathrm{~s}, 3 \mathrm{H})$. MS (MALDI-TOF) calcd for $\mathrm{C}_{48} \mathrm{H}_{39} \mathrm{~N}_{8} \mathrm{O}_{17} \mathrm{~S}$ $\left(\mathrm{M}+\mathrm{H}^{+}\right), 1031.2154$, obsd: 1031.2156.






TLC (Hexane:Ethylacetate, 60:40 v/v): $\mathrm{R}_{\mathrm{F}}=0.62 ;{ }^{1} \mathrm{H}$ NMR (400 MHz , Chloroform- $d$ ) $\delta 11.87-11.79(\mathrm{~s}, 1 \mathrm{H}), 9.13-9.04(\mathrm{dd}, J=$ 7.7, $1.2 \mathrm{~Hz}, 1 \mathrm{H}), 8.51-8.45(\mathrm{dd}, J=8.3,1.3 \mathrm{~Hz}, 1 \mathrm{H}), 8.19-$ $8.13(\mathrm{dd}, J=7.5,1.4 \mathrm{~Hz}, 1 \mathrm{H}), 8.11-8.03(\mathrm{dd}, J=8.4,1.3 \mathrm{~Hz}$, $1 \mathrm{H}), 7.70-7.58(\mathrm{dt}, J=14.4,8.0 \mathrm{~Hz}, 2 \mathrm{H}), 7.55-7.51(\mathrm{~s}, 1 \mathrm{H})$, $7.42-7.34(\mathrm{t}, J=7.8 \mathrm{~Hz}, 1 \mathrm{H}), 4.88-4.78(\mathrm{~s}, 2 \mathrm{H}), 4.48-4.36$ $(\mathrm{q}, J=7.3 \mathrm{~Hz}, 2 \mathrm{H}), 4.25-4.16(\mathrm{~s}, 3 \mathrm{H}), 1.64-1.58(\mathrm{t}, J=7.0 \mathrm{~Hz}, 3 \mathrm{H}), 1.53-1.48(\mathrm{~s}, 9 \mathrm{H}) . \mathrm{MS}$ (MALDI-TOF) calcd for $\mathrm{C}_{29} \mathrm{H}_{28} \mathrm{~N}_{4} \mathrm{O}_{9}\left(\mathrm{M}+\mathrm{H}^{+}\right), 576.18$, obsd: 576.03.


TLC (Hexane:Ethylacetate, 60:40 v/v): $\mathrm{R}_{\mathrm{F}}=0.55$; ${ }^{1} \mathrm{H}$ NMR ( 400 MHz , Chloroform-d) $\delta 12.26-$ $12.21(\mathrm{~s}, 1 \mathrm{H}), 12.18-12.13(\mathrm{~s}, 1 \mathrm{H}), 9.09-8.98$ (ddd, $J=13.8,7.7,1.3 \mathrm{~Hz}, 2 \mathrm{H}), 8.49-8.41(\mathrm{dd}, J$ $=8.4,1.5 \mathrm{~Hz}, 1 \mathrm{H}), 8.18-8.11(\mathrm{dd}, J=8.4,1.3 \mathrm{~Hz}$, $1 \mathrm{H}), 8.06-7.97(\mathrm{dd}, J=8.4,1.3 \mathrm{~Hz}, 1 \mathrm{H}), 7.95-$ $7.90(\mathrm{~s}, 1 \mathrm{H}), 7.82-7.67(\mathrm{~m}, 3 \mathrm{H}), 7.64-7.56$ (dd, $J=7.5,1.5 \mathrm{~Hz}, 1 \mathrm{H}), 7.48-7.35(\mathrm{~m}, 1 \mathrm{H}), 6.72-6.67(\mathrm{~s}, 1 \mathrm{H}), 4.96-4.89(\mathrm{~s}, 2 \mathrm{H}), 4.65-4.60(\mathrm{~s}, 2 \mathrm{H})$, $4.57-4.47(\mathrm{q}, ~ J=6.9 \mathrm{~Hz}, 2 \mathrm{H}), 3.47-3.41(\mathrm{~s}, 3 \mathrm{H}), 1.74-1.64(\mathrm{t}, J=7.0 \mathrm{~Hz}, 3 \mathrm{H}), 1.68-1.53(\mathrm{~m}$, 18H). MS (MALDI-TOF) calcd for $\mathrm{C}_{45} \mathrm{H}_{44} \mathrm{~N}_{6} \mathrm{O}_{13}\left(\mathrm{M}+\mathrm{H}^{+}\right), 876.88$, obsd: 875.26.


TLC (Hexane:Ethylacetate, 60:40 $\mathrm{v} / \mathrm{v}$ ): $\mathrm{R}_{\mathrm{F}}=0.42 ;{ }^{1} \mathrm{H}$ NMR ( 400 MHz , Chloroform-d) $\delta 12.34-12.26(\mathrm{~s}$, $1 \mathrm{H}), 11.91-11.84(\mathrm{~s}, 1 \mathrm{H}), 11.69-$ $11.61(\mathrm{~s}, 1 \mathrm{H}), 9.15-9.08(\mathrm{dd}, J=$ $7.6,1.2 \mathrm{~Hz}, 1 \mathrm{H}), 8.61-8.52$ (dd, $J$ $=8.4,1.4 \mathrm{~Hz}, 1 \mathrm{H}), 8.44-8.35(\mathrm{dd}$, $J=7.7,1.2 \mathrm{~Hz}, 1 \mathrm{H}), 8.23-8.15$ (dd, $J=7.7,1.2 \mathrm{~Hz}, 1 \mathrm{H}), 8.12-8.06(\mathrm{dd}, J=8.4,1.2 \mathrm{~Hz}, 1 \mathrm{H}), 8.04-7.95(\mathrm{ddd}, J=8.6,6.2,1.2 \mathrm{~Hz}$, $2 \mathrm{H}), 7.77-7.76(\mathrm{~s}, 1 \mathrm{H}), 7.75-7.70(\mathrm{t}, J=8.1 \mathrm{~Hz}, 1 \mathrm{H}), 7.65-7.57(\mathrm{~m}, 2 \mathrm{H}), 7.48-7.44(\mathrm{~s}, 1 \mathrm{H}), 7.42-$ $7.32(\mathrm{~m}, 2 \mathrm{H}), 6.89-6.85(\mathrm{~s}, 1 \mathrm{H}), 6.64-6.59(\mathrm{~s}, 1 \mathrm{H}), 4.99-4.87(\mathrm{~s}, 2 \mathrm{H}), 4.73-4.58(\mathrm{~m}, 4 \mathrm{H}), 4.26-$ $4.14(\mathrm{~d}, J=7.5 \mathrm{~Hz}, 2 \mathrm{H}), 3.49-3.37(\mathrm{~s}, 3 \mathrm{H}), 1.80-1.73(\mathrm{t}, J=7.0 \mathrm{~Hz}, 3 \mathrm{H}), 1.61-1.58(\mathrm{~s}, 9 \mathrm{H}), 1.60-$ $1.55(\mathrm{~m}, 3 \mathrm{H}), 1.53-1.50(\mathrm{~s}, 9 \mathrm{H})$. MS (MALDI-TOF) calcd for $\mathrm{C}_{57} \mathrm{H}_{54} \mathrm{~N}_{8} \mathrm{O}_{15}\left(\mathrm{M}+\mathrm{H}^{+}\right), 1191.10$, obsd: 1190.91.


TLC (Hexane:Ethylacetate, 70:30 v/v): $\mathrm{R}_{\mathrm{F}}=0.60 ;{ }^{1} \mathrm{H}$ NMR (400 MHz, Chloroform-d) $\delta 11.93$ - 11.80 (s, 1H), $9.10-9.03(\mathrm{dd}, J=$ $7.8,1.3 \mathrm{~Hz}, 1 \mathrm{H}), 8.67-8.58(\mathrm{dd}, J=8.4,1.4 \mathrm{~Hz}, 1 \mathrm{H}), 8.27-8.17$ $(\mathrm{dd}, J=7.5,1.4 \mathrm{~Hz}, 1 \mathrm{H}), 8.04-7.98(\mathrm{dd}, J=8.4,1.3 \mathrm{~Hz}, 1 \mathrm{H}), 7.89-$ $7.86(\mathrm{~s}, 1 \mathrm{H}), 7.73-7.66(\mathrm{dd}, J=8.5,7.5 \mathrm{~Hz}, 1 \mathrm{H}), 7.66-7.60(\mathrm{~m}$, $2 \mathrm{H}), 4.98-4.89(\mathrm{~s}, 2 \mathrm{H}), 4.44-4.33(\mathrm{q}, J=7.0 \mathrm{~Hz}, 2 \mathrm{H}), 4.24-4.18(\mathrm{~s}, 3 \mathrm{H}), 1.64-1.57(\mathrm{t}, J=7.0 \mathrm{~Hz}$, $3 \mathrm{H}), 1.54-1.53(\mathrm{~s}, 9 \mathrm{H})$. MS (MALDI-TOF) calcd for $\mathrm{C}_{29} \mathrm{H}_{28} \mathrm{~N}_{4} \mathrm{O}_{9}\left(\mathrm{M}+\mathrm{H}^{+}\right), 576.18$, obsd: 576.12.


TLC (Hexane:Ethylacetate, 70:30 v/v): $\mathrm{R}_{\mathrm{F}}=0.51 ;{ }^{1} \mathrm{H}$ NMR (400 MHz, Chloroform-d) $\delta 12.22-12.20(\mathrm{~s}, 1 \mathrm{H})$, $12.19-12.16(\mathrm{~s}, 1 \mathrm{H}), 9.04-8.99(\mathrm{~m}, 1 \mathrm{H}), 8.98-8.91$ (m, 1H), $8.51-8.43(\mathrm{dd}, J=8.2,1.4 \mathrm{~Hz}, 1 \mathrm{H}), 8.17-$ $8.07(\mathrm{~m}, 1 \mathrm{H}), 7.93-7.88(\mathrm{~m}, 2 \mathrm{H}), 7.77-7.72(\mathrm{~s}, 1 \mathrm{H})$, $7.72-7.66$ (td, $J=8.1,3.8 \mathrm{~Hz}, 2 \mathrm{H}), 7.56-7.52(\mathrm{dd}, J=7.6,1.7 \mathrm{~Hz}, 1 \mathrm{H}), 7.38-7.32(\mathrm{t}, J=7.9 \mathrm{~Hz}$, $1 \mathrm{H}), 6.80-6.65(\mathrm{~s}, 1 \mathrm{H}), 4.95-4.89(\mathrm{~s}, 2 \mathrm{H}), 4.57-4.42(\mathrm{q}, J=7.0 \mathrm{~Hz}, 2 \mathrm{H}), 4.18-4.02(\mathrm{q}, J=7.0 \mathrm{~Hz}$, $2 \mathrm{H}), 3.46-3.41(\mathrm{~s}, 3 \mathrm{H}), 1.72-1.51(\mathrm{~m}, 15 \mathrm{H})$. MS (MALDI-TOF) calcd for $\mathrm{C}_{41} \mathrm{H}_{38} \mathrm{~N}_{6} \mathrm{O}_{11}\left(\mathrm{M}+\mathrm{H}^{+}\right)$, 790.26, obsd: 789.93.
 TLC (Hexane:Ethylacetate, 70:30 v/v): $\mathrm{R}_{\mathrm{F}}=0.43$; ${ }^{1} \mathrm{H}$ NMR ( 500 MHz , Chloroformd) $\delta 12.33-12.27(\mathrm{~s}, 1 \mathrm{H}), 11.92-11.87(\mathrm{~s}$, $1 \mathrm{H}), 11.71-11.62(\mathrm{~s}, 1 \mathrm{H}), 9.22-9.12(\mathrm{~d}, J$ $=7.6 \mathrm{~Hz}, 1 \mathrm{H}), 8.68-8.63(\mathrm{dd}, J=8.3,1.5$ $\mathrm{Hz}, 1 \mathrm{H}), 8.39-8.33(\mathrm{~d}, J=7.5 \mathrm{~Hz}, 1 \mathrm{H})$, $8.11-8.07(\mathrm{dd}, J=8.5,1.3 \mathrm{~Hz}, 1 \mathrm{H}), 8.02-7.97(\mathrm{~m}, 3 \mathrm{H}), 7.95-7.90(\mathrm{dd}, J=8.4,1.3 \mathrm{~Hz}, 1 \mathrm{H}), 7.88-$ $7.86(\mathrm{~s}, 1 \mathrm{H}), 7.83-7.75(\mathrm{t}, J=8.0 \mathrm{~Hz}, 1 \mathrm{H}), 7.64-7.60(\mathrm{t}, J=8.2 \mathrm{~Hz}, 1 \mathrm{H}), 7.59-7.54(\mathrm{~m}, 2 \mathrm{H}), 7.51-$ $7.46(\mathrm{t}, J=7.9 \mathrm{~Hz}, 1 \mathrm{H}), 6.84-6.78(\mathrm{~s}, 1 \mathrm{H}), 6.75-6.66(\mathrm{~s}, 1 \mathrm{H}), 5.05-5.00(\mathrm{~s}, 2 \mathrm{H}), 4.73-4.67(\mathrm{~s}, 2 \mathrm{H})$, $4.22-4.13(\mathrm{q}, J=6.9 \mathrm{~Hz}, 2 \mathrm{H}), 3.86-3.79(\mathrm{q}, J=7.2 \mathrm{~Hz}, 3 \mathrm{H}), 3.46-3.46(\mathrm{~s}, 3 \mathrm{H}), 1.75-1.68(\mathrm{t}, J=$ $7.0 \mathrm{~Hz}, 4 \mathrm{H}), 1.63-1.62(\mathrm{~s}, 9 \mathrm{H}), 1.56-1.55(\mathrm{~s}, 9 \mathrm{H}), 1.40-1.34(\mathrm{t}, J=7.2 \mathrm{~Hz}, 3 \mathrm{H})$. MS (MALDI-TOF) calcd for $\mathrm{C}_{57} \mathrm{H}_{54} \mathrm{~N}_{8} \mathrm{O}_{15}\left(\mathrm{M}+\mathrm{H}^{+}\right), 1191.10$, obsd: 1190.81.

${ }^{1} \mathrm{H}$ NMR (600 MHz, DMSO- $d_{6}$ ) $\delta 11.77(\mathrm{~s}, 1 \mathrm{H}), 11.74(\mathrm{~s}, 1 \mathrm{H}), 10.51-10.41(\mathrm{~s}, 3 \mathrm{H}), 8.91-8.77(\mathrm{dd}, J$ $=8.1,2.6 \mathrm{~Hz}, 1 \mathrm{H}), 8.63-8.53(\mathrm{~d}, J=8.6 \mathrm{~Hz}, 1 \mathrm{H}), 8.17-8.12(\mathrm{~m}, 1 \mathrm{H}), 8.12-8.07(\mathrm{dd}, J=9.0,4.4 \mathrm{~Hz}$, $2 \mathrm{H}), 7.86-7.81(\mathrm{dd}, J=8.3,2.2 \mathrm{~Hz}, 4 \mathrm{H}), 7.61-7.57(\mathrm{~m}, 1 \mathrm{H}), 7.57-7.54(\mathrm{~d}, J=4.1 \mathrm{~Hz}, 1 \mathrm{H}), 7.48-$ $7.39(\mathrm{dt}, J=15.6,7.8 \mathrm{~Hz}, 2 \mathrm{H}), 7.25-7.22(\mathrm{~d}, J=8.2 \mathrm{~Hz}, 2 \mathrm{H}), 7.18-7.15(\mathrm{~m}, 1 \mathrm{H}), 7.15-7.11(\mathrm{~m}, 2 \mathrm{H})$, $6.66-6.65(\mathrm{~d}, J=2.5 \mathrm{~Hz}, 2 \mathrm{H}), 6.61-6.60(\mathrm{~s}, 1 \mathrm{H}), 6.60-6.59(\mathrm{~s}, 1 \mathrm{H}), 6.57-6.54(\mathrm{dd}, J=8.5,2.1 \mathrm{~Hz}$, $2 \mathrm{H}), 3.75-3.70(\mathrm{q}, J=6.2 \mathrm{~Hz}, 2 \mathrm{H}), 3.64-3.52(\mathrm{dt}, J=14.6,7.2 \mathrm{~Hz}, 4 \mathrm{H}), 3.45-3.35(\mathrm{dt}, J=15.2,5.6$ $\mathrm{Hz}, 4 \mathrm{H}), 3.23-3.17(\mathrm{p}, J=7.0 \mathrm{~Hz}, 2 \mathrm{H}), 1.23-1.20(\mathrm{t}, J=7.1 \mathrm{~Hz}, 3 \mathrm{H}), 0.99-0.96(\mathrm{t}, J=7.5 \mathrm{~Hz}, 3 \mathrm{H})$. MS (MALDI-TOF) calcd for $\mathrm{C}_{71} \mathrm{H}_{53} \mathrm{~N}_{11} \mathrm{O}_{19} \mathrm{~S}\left(\mathrm{M}+\mathrm{H}^{+}\right)$, 1396.3318, obsd: 1396.3367.


To a solution of $14(26.5 \mathrm{mg}, 25 \mu \mathrm{M})$ in chloroform (5 mL, anhydrous), trimethylamine ( $7 \mu \mathrm{~L}$, anhydrous) was added and the reaction was stirred at 0 ${ }^{\circ} \mathrm{C}$ for 15 min . under inert atmosphere. To this reaction mixture, a slution of (1S)-(-) camphanyl chloride or (1R)(+) camphanyl chloride ( $5.5 \mathrm{mg}, 25$ $\mu \mathrm{M})$ in $\mathrm{CHCl}_{3}$ ( 3 mL , anhydrous) was added dropwise at $0{ }^{\circ} \mathrm{C}$ under inert atmosphere. The reaction mixture was stirred for 15 min . at $0{ }^{\circ} \mathrm{C}$ and then for 24 h at r.t. The solvents were removed on rotovap and the desired product was purified using column chromatography ( 0 to $50 \%$ ethylacetate in hexane, $\mathrm{v} / \mathrm{v}$ ) as a pale yellow solid (see Table 1 for \% yield). TLC (Hexane:Ethylacetate, $50: 50 \mathrm{v} / \mathrm{v}): \mathrm{R}_{\mathrm{F}}=0.45 ;{ }^{1} \mathrm{H}$ NMR ( 400 MHz , Chloroform- $d$ ) $\delta 12.49-12.43(\mathrm{~s}, 1 \mathrm{H}), 11.89-11.83(\mathrm{~s}, 1 \mathrm{H})$, $11.80-11.71(\mathrm{~s}, 1 \mathrm{H}), 9.94-9.84(\mathrm{~s}, 1 \mathrm{H}), 9.06-8.93(\mathrm{~m}, 1 \mathrm{H}), 8.60-8.51(\mathrm{~m}, 1 \mathrm{H}), 8.09-8.04(\mathrm{dd}, J=$ $8.3,1.3 \mathrm{~Hz}, 1 \mathrm{H}), 8.02-7.94(\mathrm{~m}, 3 \mathrm{H}), 7.93-7.91(\mathrm{~s}, 1 \mathrm{H}), 7.71-7.66(\mathrm{t}, J=8.0 \mathrm{~Hz}, 2 \mathrm{H}), 7.65-7.59(\mathrm{t}$, $J=8.0 \mathrm{~Hz}, 1 \mathrm{H}), 7.59-7.56(\mathrm{~s}, 1 \mathrm{H}), 7.54-7.49(\mathrm{~m}, 1 \mathrm{H}), 7.41-7.39(\mathrm{~s}, 1 \mathrm{H}), 7.34-7.28(\mathrm{~m}, 1 \mathrm{H}), 6.80$ $-6.76(\mathrm{~s}, 1 \mathrm{H}), 6.62-6.60(\mathrm{~s}, 1 \mathrm{H}), 4.94-4.84(\mathrm{~d}, J=2.9 \mathrm{~Hz}, 2 \mathrm{H}), 4.72-4.58(\mathrm{~m}, 3 \mathrm{H}), 4.58-4.45(\mathrm{~m}$, $2 \mathrm{H}), 4.27-4.11(\mathrm{dq}, J=9.7,3.3 \mathrm{~Hz}, 2 \mathrm{H}), 3.53-3.45(\mathrm{~s}, 3 \mathrm{H}), 2.35-2.22(\mathrm{~m}, 2 \mathrm{H}), 2.08-1.95(\mathrm{~m}, 1 \mathrm{H})$, $1.83-1.72(\mathrm{t}, J=7.0 \mathrm{~Hz}, 4 \mathrm{H}), 1.62-1.56(\mathrm{~s}, 11 \mathrm{H}), 1.57-1.49(\mathrm{~s}, 11 \mathrm{H}), 1.43-1.36(\mathrm{~s}, 4 \mathrm{H}), 0.80-$ $0.76(\mathrm{~s}, 3 \mathrm{H}), 0.75-0.71(\mathrm{~s}, 3 \mathrm{H}) . \mathrm{MS}($ MALDI-TOF $)$ calcd for $\mathrm{C}_{67} \mathrm{H}_{68} \mathrm{~N}_{8} \mathrm{O}_{16}\left(\mathrm{M}+\mathrm{H}^{+}\right), 1240.47$, obsd: 1240.17.


TLC (Hexane:Ethylacetate, 60:40 v/v): $\mathrm{R}_{\mathrm{F}}=0.38 ;{ }^{1} \mathrm{H}$ NMR (500 MHz, Chloroform- $d$ ) $\delta$ $11.98-11.95(\mathrm{~s}, 1 \mathrm{H}), 11.77-$ 11.74 (s, 1H), $11.74-11.72$ (s, $1 \mathrm{H}), 11.57-11.52(\mathrm{~s}, 1 \mathrm{H}), 8.66$ $-8.60(\mathrm{dd}, J=8.3,1.4 \mathrm{~Hz}, 1 \mathrm{H})$,
$8.52-8.47(\mathrm{ddd}, J=7.5,4.8,1.3 \mathrm{~Hz}, 2 \mathrm{H}), 8.23-8.16(\mathrm{ddd}, J=11.9,7.6,1.2 \mathrm{~Hz}, 2 \mathrm{H}), 8.13-8.08(\mathrm{dd}$, $J=8.3,1.2 \mathrm{~Hz}, 1 \mathrm{H}), 8.08-8.06(\mathrm{dd}, J=2.2,1.2 \mathrm{~Hz}, 1 \mathrm{H}), 8.06-8.01(\mathrm{~m}, 2 \mathrm{H}), 7.96-7.92(\mathrm{dd}, J=8.2$, $1.3 \mathrm{~Hz}, 1 \mathrm{H}), 7.71-7.63(\mathrm{dt}, J=16.0,8.0 \mathrm{~Hz}, 2 \mathrm{H}), 7.59-7.51(\mathrm{~m}, 2 \mathrm{H}), 7.51-7.50(\mathrm{~s}, 1 \mathrm{H}), 7.47-7.42$ $(\mathrm{m}, 2 \mathrm{H}), 7.37-7.31(\mathrm{t}, J=8.0 \mathrm{~Hz}, 1 \mathrm{H}), 6.86-6.82(\mathrm{~s}, 1 \mathrm{H}), 6.75-6.71(\mathrm{~s}, 1 \mathrm{H}), 6.54-6.51(\mathrm{~s}, 1 \mathrm{H})$, $5.07-5.01(\mathrm{~d}, J=5.1 \mathrm{~Hz}, 2 \mathrm{H}), 5.02-4.96(\mathrm{dq}, J=17.2,1.7 \mathrm{~Hz}, 1 \mathrm{H}), 4.95-4.91(\mathrm{ddt}, J=10.0,2.3,1.3$ $\mathrm{Hz}, 1 \mathrm{H}), 4.71-4.68(\mathrm{~d}, J=5.4 \mathrm{~Hz}, 1 \mathrm{H}), 4.67-4.64(\mathrm{~d}, J=2.9 \mathrm{~Hz}, 2 \mathrm{H}), 4.60-4.53(\mathrm{dd}, J=15.6,8.9$ $\mathrm{Hz}, 2 \mathrm{H}), 4.52-4.48(\mathrm{ddd}, J=6.0,3.5,1.2 \mathrm{~Hz}, 3 \mathrm{H}), 1.83-1.74(\mathrm{~m}, 6 \mathrm{H}), 1.69-1.63(\mathrm{~s}, 9 \mathrm{H}), 1.65-1.61$ (s, 9H), $1.55-1.50(\mathrm{~s}, 9 \mathrm{H})$. MS (MALDI-TOF) calcd for $\mathrm{C}_{73} \mathrm{H}_{70} \mathrm{~N}_{10} \mathrm{O}_{19}\left(\mathrm{M}+\mathrm{H}^{+}\right)$, 1391.41, obsd: 1391.50.


TLC (Hexane:Ethylacetate, 50:50 $\mathrm{v} / \mathrm{v}$ ): $\mathrm{R}_{\mathrm{F}}=0.42 ;{ }^{1} \mathrm{H}$ NMR ( 400 MHz , Chloroform-d) $\delta 11.98-11.95$ (s, $1 \mathrm{H}), 11.78-11.72(\mathrm{~d}, J=3.1 \mathrm{~Hz}$, 2H), $11.56-11.51(\mathrm{~s}, 1 \mathrm{H}), 8.59-$ $8.54(\mathrm{dd}, J=8.3,1.5 \mathrm{~Hz}, 1 \mathrm{H}), 8.54$ - 8.44 (m, 2H), $8.24-8.14$ (ddd, $J$ $=15.6,8.1,1.2 \mathrm{~Hz}, 2 \mathrm{H}), 8.14-8.07(\mathrm{ddd}, J=8.4,3.5,1.2 \mathrm{~Hz}, 2 \mathrm{H}), 8.05-7.95(\mathrm{ddd}, J=17.3,8.4,1.2$ $\mathrm{Hz}, 2 \mathrm{H}), 7.85-7.80(\mathrm{dd}, J=8.4,1.2 \mathrm{~Hz}, 1 \mathrm{H}), 7.70-7.61(\mathrm{~m}, 2 \mathrm{H}), 7.50-7.49(\mathrm{~d}, J=1.6 \mathrm{~Hz}, 1 \mathrm{H}), 7.42$ $-7.38(\mathrm{~m}, 2 \mathrm{H}), 7.38-7.34(\mathrm{~m}, 2 \mathrm{H}), 6.80-6.77(\mathrm{~s}, 1 \mathrm{H}), 6.76-6.73(\mathrm{~s}, 1 \mathrm{H}), 6.59-6.56(\mathrm{~s}, 1 \mathrm{H}), 5.07-$ $5.01(\mathrm{~d}, J=2.6 \mathrm{~Hz}, 2 \mathrm{H}), 4.76-4.69(\mathrm{~d}, J=8.6 \mathrm{~Hz}, 2 \mathrm{H}), 4.52-4.44(\mathrm{~m}, 2 \mathrm{H}), 4.14-4.07(\mathrm{~m}, 2 \mathrm{H}), 3.92$ $-3.82(\mathrm{~m}, 2 \mathrm{H}), 3.20-3.17(\mathrm{~s}, 3 \mathrm{H}), 1.85-1.73(\mathrm{t}, J=7.0 \mathrm{~Hz}, 3 \mathrm{H}), 1.67-1.64(\mathrm{~d}, J=7.0 \mathrm{~Hz}, 3 \mathrm{H}), 1.62$
$-1.61(\mathrm{~s}, 10 \mathrm{H}), 1.60-1.57(\mathrm{~d}, J=6.7 \mathrm{~Hz}, 3 \mathrm{H}), 1.53-1.51(\mathrm{~s}, 9 \mathrm{H})$. MS (MALDI-TOF) calcd for $\mathrm{C}_{69} \mathrm{H}_{64} \mathrm{~N}_{10} \mathrm{O}_{17}\left(\mathrm{M}+\mathrm{H}^{+}\right), 1305.32$, obsd: 1305.72.

${ }^{1} \mathrm{H}$ NMR ( 600 MHz , DMSO- $d_{6}$ ) $\delta 13.69$ $13.15(\mathrm{~s}, 2 \mathrm{H}), 12.12-12.03(\mathrm{~s}, 1 \mathrm{H}), 11.69$ $-11.59(\mathrm{~s}, 1 \mathrm{H}), 11.53-11.43(\mathrm{~s}, 1 \mathrm{H})$, $9.02-8.99(\mathrm{dd}, J=7.5,1.3 \mathrm{~Hz}, 1 \mathrm{H}), 8.54$ - $8.51(\mathrm{dd}, J=8.2,1.4 \mathrm{~Hz}, 1 \mathrm{H}), 8.41-$ $8.38(\mathrm{dd}, J=7.5,1.3 \mathrm{~Hz}, 1 \mathrm{H}), 8.01-7.97$ (dd, $J=7.6,1.3 \mathrm{~Hz}, 1 \mathrm{H}), 7.95-7.92$ (dd, $J=8.4,1.3 \mathrm{~Hz}, 1 \mathrm{H}), 7.92-7.90(\mathrm{dd}, J=8.4,1.3 \mathrm{~Hz}, 1 \mathrm{H}), 7.89-7.86(\mathrm{dd}, J=8.4,1.3 \mathrm{~Hz}, 1 \mathrm{H}), 7.80-$ $7.79(\mathrm{~d}, J=2.7 \mathrm{~Hz}, 1 \mathrm{H}), 7.79-7.75(\mathrm{~m}, 2 \mathrm{H}), 7.72-7.68(\mathrm{dd}, J=7.5,1.4 \mathrm{~Hz}, 1 \mathrm{H}), 7.63-7.59(\mathrm{dd}, J=$ $8.3,7.5 \mathrm{~Hz}, 1 \mathrm{H}), 7.50-7.46(\mathrm{~m}, 1 \mathrm{H}), 7.35-7.30(\mathrm{~s}, 1 \mathrm{H}), 6.85-6.80(\mathrm{~s}, 1 \mathrm{H}), 6.61-6.57(\mathrm{~s}, 1 \mathrm{H}), 5.39-$ $5.07(\mathrm{~m}, 2 \mathrm{H}), 5.03-4.76(\mathrm{~m}, 2 \mathrm{H}), 4.76-4.50(\mathrm{~m}, 2 \mathrm{H}), 4.39-4.08(\mathrm{dd}, J=68.0,11.0 \mathrm{~Hz}, 2 \mathrm{H}), 3.35-$ $3.32(\mathrm{~s}, 3 \mathrm{H}), 1.73-1.68(\mathrm{t}, J=7.0 \mathrm{~Hz}, 3 \mathrm{H}), 1.54-1.49(\mathrm{t}, J=7.0 \mathrm{~Hz}, 3 \mathrm{H})$. HRMS-ESI $(\mathrm{m} / \mathrm{z}):$ calculated for $\mathrm{C}_{49} \mathrm{H}_{39} \mathrm{~N}_{8} \mathrm{O}_{15}{ }^{+}[(\mathrm{M}+\mathrm{H})+]$ : 979.2529, found 979.2530.

${ }^{1} \mathrm{H}$ NMR ( 500 MHz , DMSO- $d_{6}$ ) $\delta 14.04-12.77(\mathrm{~s}, 3 \mathrm{H}), 11.69-$ 11.61 (s, 1H), $11.54-11.48$ (s, 1H), 11.48 - 11.43 (s, 1H), 11.34 - 11.27 (s, 1H), 8.51 $8.41(\mathrm{~m}, 2 \mathrm{H}), 8.40-8.32(\mathrm{~d}, J=$ $7.5 \mathrm{~Hz}, 1 \mathrm{H}), 8.02-7.98(\mathrm{~d}, J=7.6 \mathrm{~Hz}, 1 \mathrm{H}), 7.98-7.95(\mathrm{~d}, J=8.4 \mathrm{~Hz}, 1 \mathrm{H}), 7.94-7.90(\mathrm{~d}, J=8.3 \mathrm{~Hz}$, $1 \mathrm{H}), 7.87-7.84(\mathrm{~d}, J=8.3 \mathrm{~Hz}, 1 \mathrm{H}), 7.83-7.76(\mathrm{~m}, 2 \mathrm{H}), 7.75-7.71(\mathrm{t}, J=8.0 \mathrm{~Hz}, 1 \mathrm{H}), 7.70-7.66(\mathrm{~d}$, $J=8.2 \mathrm{~Hz}, 1 \mathrm{H}), 7.55-7.50(\mathrm{~m}, 2 \mathrm{H}), 7.50-7.45(\mathrm{t}, J=8.0 \mathrm{~Hz}, 1 \mathrm{H}), 7.37-7.33(\mathrm{t}, J=8.0 \mathrm{~Hz}, 1 \mathrm{H})$, $7.32-7.30(\mathrm{~s}, 1 \mathrm{H}), 7.21-7.15(\mathrm{~s}, 1 \mathrm{H}), 6.76-6.68(\mathrm{~s}, 1 \mathrm{H}), 6.68-6.62(\mathrm{~s}, 1 \mathrm{H}), 6.44-6.39(\mathrm{~s}, 1 \mathrm{H}), 5.25$ -5.17 (d, $J=4.0 \mathrm{~Hz}, 2 \mathrm{H}), 4.98-4.90(\mathrm{~d}, J=16.1 \mathrm{~Hz}, 1 \mathrm{H}), 4.88-4.79(\mathrm{~m}, 2 \mathrm{H}), 4.74-4.61(\mathrm{~m}, 2 \mathrm{H})$, $4.62-4.53(\mathrm{~m}, 1 \mathrm{H}), 4.33-4.22(\mathrm{dq}, J=9.6,7.0 \mathrm{~Hz}, 1 \mathrm{H}), 4.18-4.09(\mathrm{dq}, J=9.5,6.8 \mathrm{~Hz}, 1 \mathrm{H}), 3.09-$ $2.98(\mathrm{~s}, 3 \mathrm{H}), 1.72-1.63(\mathrm{t}, J=6.9 \mathrm{~Hz}, 3 \mathrm{H}), 1.56-1.46(\mathrm{t}, J=6.9 \mathrm{~Hz}, 3 \mathrm{H})$. HRMS-ESI (m/z): calculated for $\mathrm{C}_{61} \mathrm{H}_{47} \mathrm{~N}_{10} \mathrm{O}_{19}{ }^{+}[(\mathrm{M}+\mathrm{H})+]: 1223.3031$, found 1223.3031.

${ }^{1} \mathrm{H}$ NMR ( 400 MHz , DMSO- $d_{6}$ ) $\delta$ 13.91 - 12.89 (br, s, 2H), 11.71 $11.66(\mathrm{~s}, 1 \mathrm{H}), 11.58-11.51(\mathrm{~d}, J=$ $9.4 \mathrm{~Hz}, 2 \mathrm{H}), 11.36$ - $11.31(\mathrm{~s}, 1 \mathrm{H})$, $8.55-8.46(m, 2 H), 8.40-8.33$ (d, $J=7.5 \mathrm{~Hz}, 1 \mathrm{H}), 8.07-7.93(\mathrm{~m}$, 3H), $7.91-7.78(\mathrm{~m}, 3 \mathrm{H}), 7.77-7.68(\mathrm{~m}, 2 \mathrm{H}), 7.60-7.48(\mathrm{~m}, 3 \mathrm{H}), 7.42-7.33(\mathrm{~m}, 2 \mathrm{H}), 7.23-7.18(\mathrm{~s}$, $1 \mathrm{H}), 6.79-6.74(\mathrm{~s}, 1 \mathrm{H}), 6.70-6.65(\mathrm{~s}, 1 \mathrm{H}), 6.54-6.49(\mathrm{~s}, 1 \mathrm{H}), 5.28-5.21(\mathrm{~d}, \mathrm{~J}=4.8 \mathrm{~Hz}, 2 \mathrm{H}), 5.02-$ $4.84(\mathrm{~m}, 3 \mathrm{H}), 4.76-4.59(\mathrm{ddd}, J=32.6,9.6,7.0 \mathrm{~Hz}, 2 \mathrm{H}), 4.27-4.06(\mathrm{~m}, 4 \mathrm{H}), 3.15-3.07(\mathrm{~s}, 3 \mathrm{H}), 1.79$ - $1.66(\mathrm{t}, J=6.9 \mathrm{~Hz}, 3 \mathrm{H}), 1.60-1.48(\mathrm{dt}, J=13.6,6.9 \mathrm{~Hz}, 6 \mathrm{H})$. HRMS-ESI $(\mathrm{m} / \mathrm{z})$ : calculated for $\mathrm{C}_{61} \mathrm{H}_{49} \mathrm{~N}_{10} \mathrm{O}_{17}{ }^{+}[(\mathrm{M}+\mathrm{H})+]$ : 1193.3272 , found 1193.3274.

${ }^{1} \mathrm{H}$ NMR $\left(600 \mathrm{MHz}\right.$, DMSO- $\left.d_{6}\right) \delta 12.25-12.20(\mathrm{~s}, 1 \mathrm{H}), 11.65-11.61(\mathrm{~s}, 1 \mathrm{H}), 11.61-11.56(\mathrm{~s}, 1 \mathrm{H})$, $9.80-9.69(\mathrm{~s}, 1 \mathrm{H}), 8.98-8.88(\mathrm{~d}, J=7.4 \mathrm{~Hz}, 1 \mathrm{H}), 8.50-8.44(\mathrm{~d}, J=7.6 \mathrm{~Hz}, 1 \mathrm{H}), 7.93-7.87(\mathrm{~m}, 2 \mathrm{H})$, $7.87-7.82(\mathrm{~m}, 3 \mathrm{H}), 7.82-7.75(\mathrm{~m}, 2 \mathrm{H}), 7.73-7.68(\mathrm{t}, J=8.0 \mathrm{~Hz}, 1 \mathrm{H}), 7.63-7.59(\mathrm{~s}, 1 \mathrm{H}), 7.44-7.36$ (dt, $J=13.7,7.9 \mathrm{~Hz}, 2 \mathrm{H}), 7.27-7.22(\mathrm{~s}, 1 \mathrm{H}), 6.77-6.72(\mathrm{~s}, 1 \mathrm{H}), 6.58-6.55(\mathrm{~s}, 1 \mathrm{H}), 5.23-4.92(\mathrm{~d}, J$ $=35.7 \mathrm{~Hz}, 4 \mathrm{H}), 4.72-4.51(\mathrm{~m}, 3 \mathrm{H}), 4.34-4.17(\mathrm{~m}, 2 \mathrm{H}), 2.03-1.89(\mathrm{ddd}, J=18.8,9.7,5.3 \mathrm{~Hz}, 3 \mathrm{H})$, $1.74-1.66(\mathrm{t}, J=7.0 \mathrm{~Hz}, 3 \mathrm{H}), 1.61-1.51(\mathrm{t}, J=6.9 \mathrm{~Hz}, 4 \mathrm{H}), 1.49-1.30(\mathrm{~m}, 2 \mathrm{H}), 0.86-0.78(\mathrm{t}, J=$ $6.9 \mathrm{~Hz}, 2 \mathrm{H}), 0.72-0.67(\mathrm{~s}, 3 \mathrm{H}), 0.67-0.63(\mathrm{~s}, 3 \mathrm{H})$. HRMS-ESI (m/z): calculated for $\mathrm{C}_{59} \mathrm{H}_{53} \mathrm{~N}_{8} \mathrm{O}_{10}{ }^{+}$ $[(\mathrm{M}+\mathrm{H})+\mathrm{]}: 1129.3574$, found 1129.3575 .

${ }^{1} \mathrm{H}$ NMR ( 600 MHz, DMSO- $\mathrm{d}_{6}$ ) $\delta 12.24-12.19(\mathrm{~s}, 1 \mathrm{H}), 11.66-11.61(\mathrm{~s}, 1 \mathrm{H}), 11.58-11.54(\mathrm{~s}, 1 \mathrm{H})$, $9.77-9.71(\mathrm{~s}, 1 \mathrm{H}), 8.95-8.92(\mathrm{~d}, J=7.5 \mathrm{~Hz}, 1 \mathrm{H}), 8.46-8.41(\mathrm{~d}, J=7.5 \mathrm{~Hz}, 1 \mathrm{H}), 7.91-7.87(\mathrm{~d}, J=$ $8.4 \mathrm{~Hz}, 2 \mathrm{H}), 7.87-7.82(\mathrm{~m}, 3 \mathrm{H}), 7.81-7.78(\mathrm{~d}, J=7.6 \mathrm{~Hz}, 1 \mathrm{H}), 7.76-7.72(\mathrm{t}, J=7.9 \mathrm{~Hz}, 1 \mathrm{H}), 7.72-$ $7.68(\mathrm{t}, J=7.9 \mathrm{~Hz}, 1 \mathrm{H}), 7.59-7.54(\mathrm{~s}, 1 \mathrm{H}), 7.42-7.36(\mathrm{t}, J=8.0 \mathrm{~Hz}, 2 \mathrm{H}), 7.28-7.24(\mathrm{~s}, 1 \mathrm{H}), 6.76-$ $6.71(\mathrm{~s}, 1 \mathrm{H}), 6.55-6.51(\mathrm{~s}, 1 \mathrm{H}), 5.02-4.84(\mathrm{~m}, 2 \mathrm{H}), 4.73-4.52(\mathrm{ddd}, J=68.5,9.3,7.0 \mathrm{~Hz}, 2 \mathrm{H}), 4.53$ $-4.40(\mathrm{~d}, J=23.7 \mathrm{~Hz}, 2 \mathrm{H}), 4.33-4.19(\mathrm{~m}, 2 \mathrm{H}), 3.40-3.37(\mathrm{~s}, 3 \mathrm{H}), 2.01-1.98(\mathrm{~d}, J=7.5 \mathrm{~Hz}, 3 \mathrm{H})$, $1.73-1.67(\mathrm{t}, J=6.9 \mathrm{~Hz}, 4 \mathrm{H}), 1.60-1.54(\mathrm{t}, J=7.0 \mathrm{~Hz}, 4 \mathrm{H}), 1.46-1.40(\mathrm{t}, J=7.2 \mathrm{~Hz}, 2 \mathrm{H}), 1.09-$ $1.04(\mathrm{~d}, J=6.6 \mathrm{~Hz}, 3 \mathrm{H})$. HRMS-ESI (m/z): calculated for $\mathrm{C}_{59} \mathrm{H}_{53} \mathrm{~N}_{8} \mathrm{O}_{16}{ }^{+}[(\mathrm{M}+\mathrm{H})+]$ : 1129.3574, found 1129.3578.

## Supplementary References

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