Palladium Catalyzed Aryl C–H Olefination with Unactivated, Aliphatic Alkenes

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Supporting Information

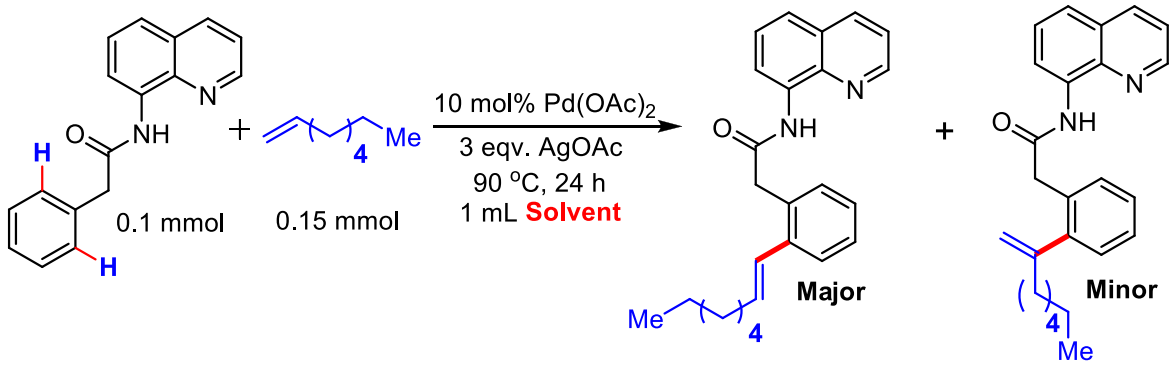
General considerations:

Reagent information: Unless otherwise stated, all reactions were carried out under oxygen (O_2) atmosphere in screw cap reaction tubes. All the solvents were bought from Sigma-Aldrich and Merck in sure sealed bottle and were used as received. Palladium (II) acetate was obtained from Alfa-Aesar. Aryl acetic acids and olefins were bought from Aldrich and Alfa-Aesar. For column chromatography, silica gel (60-120 mesh or 100–200 mesh) from SRL Co. and neutral alumina from Merck was used. A gradient elution-using pet–ether and ethyl acetate was performed, based on Merck aluminium TLC sheets (silica gel $60F_{254}$).

Analytical Information: All isolated compounds were characterized by ^{1}H NMR, ^{13}C NMR spectroscopy, gas chromatography mass spectra (GC–MS), HRMS, IR and melting point. Copies of the ^{1}H NMR, ^{13}C NMR can be found in the Supporting Information. Unless otherwise stated, all Nuclear Magnetic Resonance spectra were recorded on a Bruker 400 MHz and 500 MHz instrument. All ^{1}H NMR experiments were reported in units, parts per million (ppm), and were measured relative to the signals for residual chloroform (7.26 ppm) in the deuterated solvent, unless otherwise stated. All ^{13}C NMR spectra were reported in ppm relative to deuterochloroform (77.23 ppm), unless otherwise stated, and all were obtained with ^{1}H decoupling. All GC analysis was performed on an Agilent 7890A GC system with an FID detector using a J & W DB–1 column (10 m, 0.1 mm I.D.) and *n*-decane was used as an internal standard. All GCMS analysis was done by Agilent 7890A GC system connected with 5975C inert XL EI/CI MSD (with triple axis detector). High-resolution mass spectra (HRMS) were recorded on a micro mass ESI TOF (time of flight) mass spectrometer. IR spectra were recorded using Perkin-Elmer instrument.

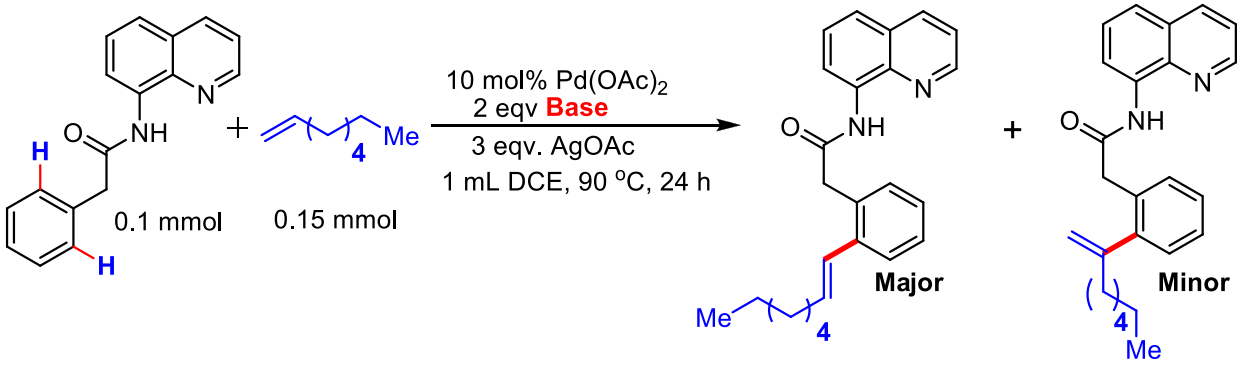
Optimization details for Olefination:

Table S1: Optimization by varying different solvents



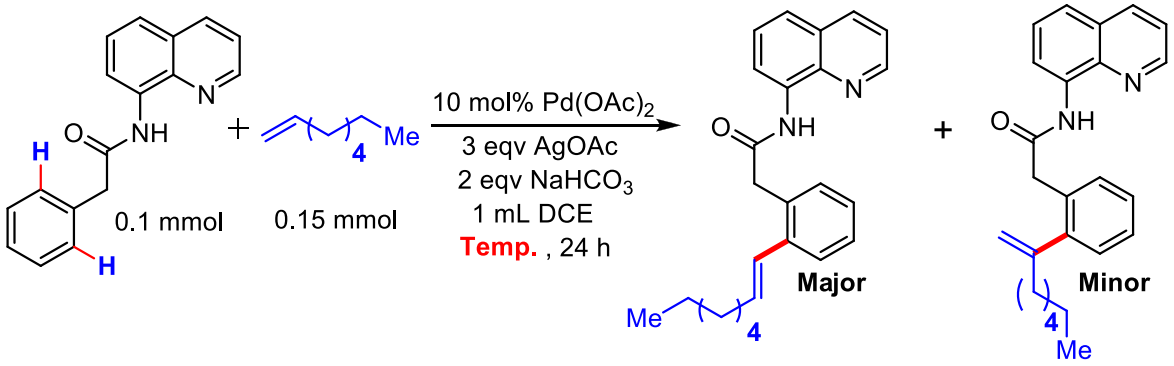
Sr. No	Solvent (1 mL)	GC Yield (%)	Ratio
1.	2-ethoxy ethanol	**33**	**3:1**
2.	1,2,3-TCP	**40**	**3.3:1**
3.	MeOH	-	-
4.	PivOH	-	-
5.	^{t}BuOH	**35**	**4.3:1**
6.	TFT	**35**	**5.5:1**
7.	NMP	-	-
8.	Xylene	**35**	**3:1**
9.	DMF	-	-
10.	MeCN	-	-
11.	DMSO	-	-
12.	^{t}Amyl alcohol	-	-
13.	THF	**35**	**5:1**
14.	DCE	**40**	**4:1**

Table S2: Optimization by varying different Base



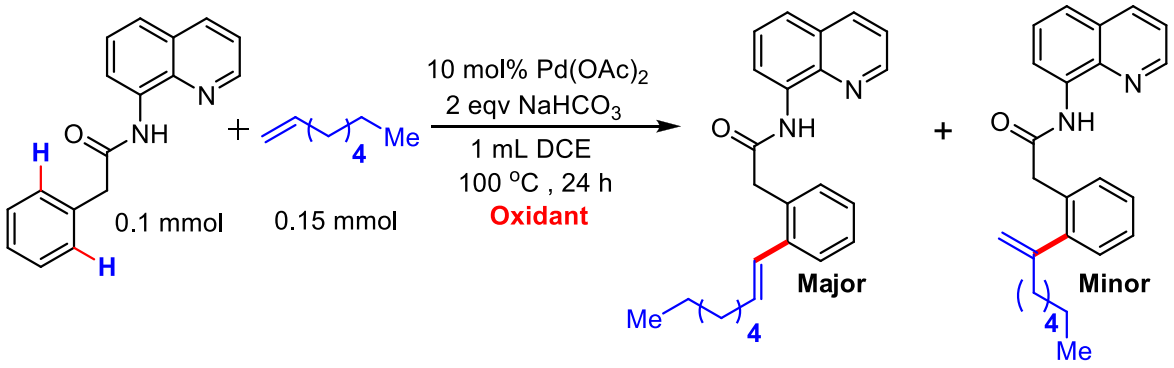
Sr. No	Base	GC Yield (%)	Ratio
1.	$KHCO_3$	**21**	**2:1**
2.	$Cu(OAc)_2$	**33**	**3:1**
3.	Na_2CO_3	**31**	**4:1**
4.	K_2CO_3	**25**	**3:1**
5.	NaOAc	**40**	**3:1**
6.	KOAc	**10**	**3:1**
7.	Ag_2CO_3	**33**	**4:1**
8.	Cs_2CO_3	**10**	**2:1**
9.	$NaHCO_3$	**40**	**4.3:1**
10.	CF_3COONa	**36**	**4.1:1**
11.	K_3PO_4	**20**	**1.2:1**
12.	$BaCO_3$	**32**	**3.1:1**

Table S3: Optimization by varying temperature



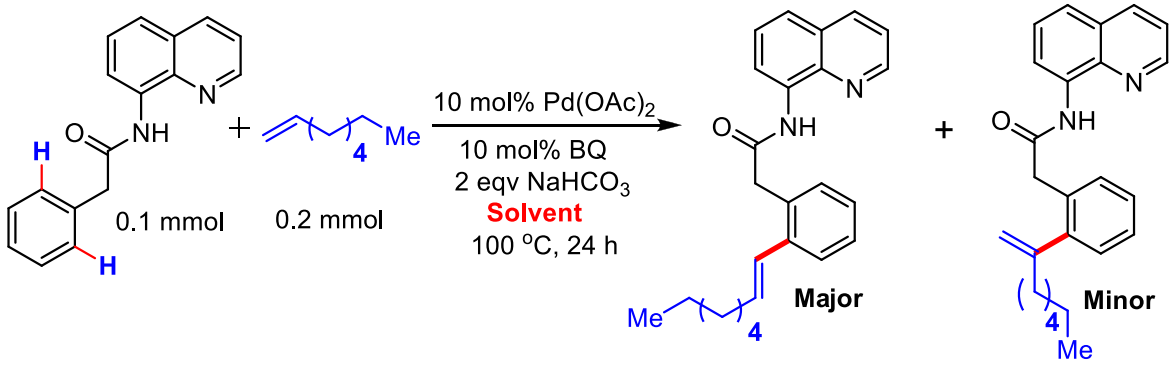
Sr. No	Temperature	GC Yield (%)	Ratio
1.	70 °C	**26**	**4:1**
2.	90 °C	**40**	**4.3:1**
3.	100 °C	**45**	**4:1**
4.	110 °C	**39**	**4:1**
5.	120 °C	**43**	**4:1**
6.	130 °C	**45**	**4.5:1**
7.	140 °C	**35**	**4:1**

Table S4: Optimization by varying different oxidant



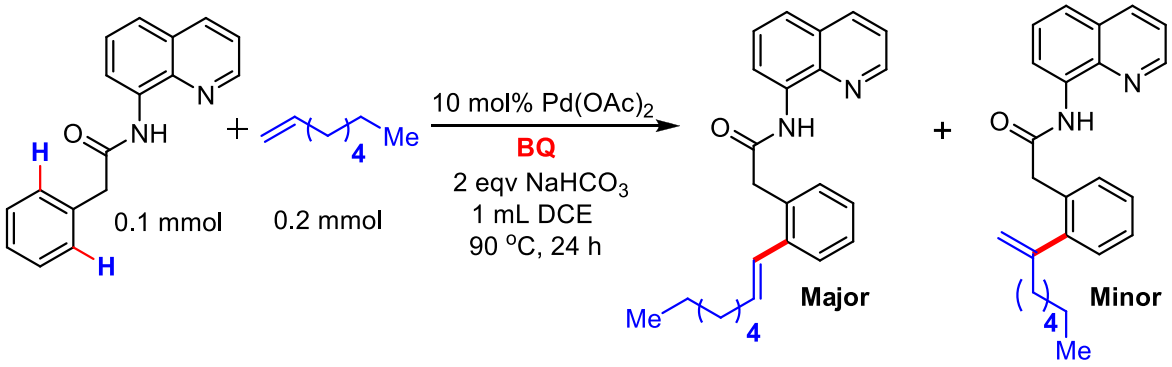
Sr. No	Oxidant	GC Yield (%)	Ratio
1.	3 equiv. AgOAc	**45**	**4:1**
2.	10 mol% BQ	**62**	**8:1**
3.	O_2 atm.	**40**	**4:1**
4.	50 mol% FePC + 50 mol% AgOAc	**-**	**-**
5.	1 equiv. AgOAc + 50 mol% BQ	**51**	**6:1**
6.	50 mol% FePC + 50 mol% BQ	-	-
7.	1 equiv. BQ + 50 mol% AgOAc	**45**	**7:1**
8.	1 equiv. BQ + O_2 atm.	**65**	**8:1**

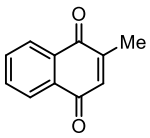
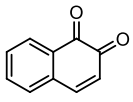
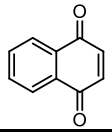
Table S5: Optimization by varying different solvent in presence of BQ



Sr. No	Solvent	GC Yield (%)	Ratio
1.	DCE	**65**	**8:1**
2.	Isoamyl alcohol	**50**	**5:1**
3.	TCP	**45**	**6:1**
4.	TFT	**50**	**6:1**

Table S6: Optimization by varying different derivatives of quinone



Sr. No	Benzoquinones	GC Yield (%)	Ratio
1.		**40**	**5:1**
2.		**45**	**6:1**
3.		**43**	**6:1**

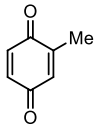
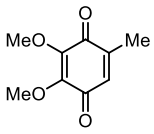
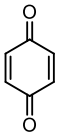
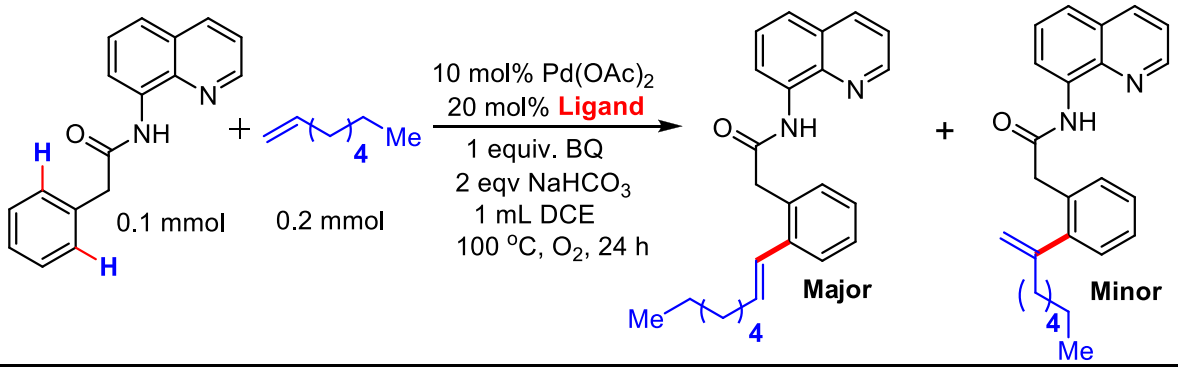
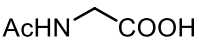
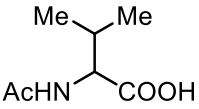
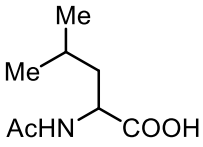
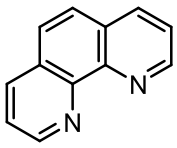
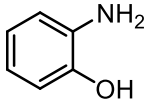
4.		**32**	**6:1**
5.		**35**	**5:1**
6.		**62**	**8:1**

Table S7: Optimization by varying different ligands



Sr. No	Ligand	GC Yield (%)	Ratio
1.		**68**	**5:1**
2.		**83**	**8:1**
3.		**75**	**6:1**
4.		**20**	**4:1**
5.		**74**	**7:1**

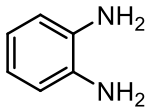
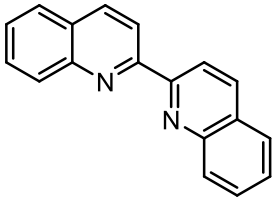
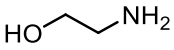
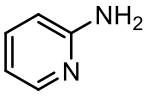
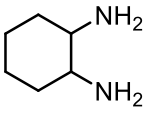
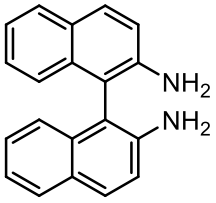
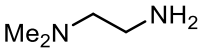
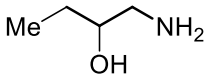
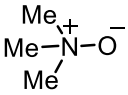
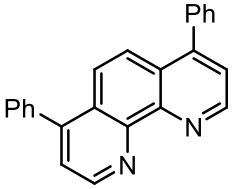
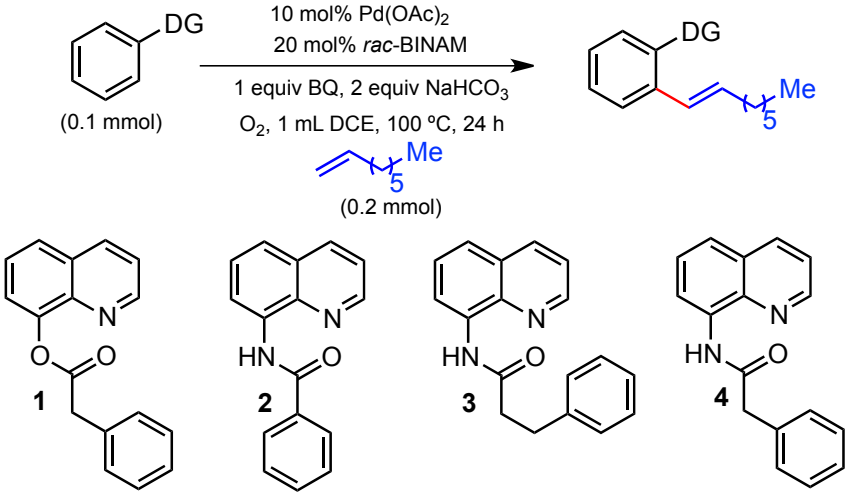
Sr. No	Ligand	GC Yield (%)	Ratio
6.		–	–
7.		**15**	**8:1**
8.		–	–
9.		–	–
10.		–	–
11.		**90**	**8:1**
12.		–	–
13.		–	–
14.		**74**	**6.5:1**
15.		**10**	**4:1**

Table S8: Optimization by varying different substrate scaffolds



Sr. No	Scaffold	GC Yield (%)	Ratio
1.	**1**	–	–
2.	**2**	–	–
3.	**3**	–	–
4.	**4**	**90**	**8:1**

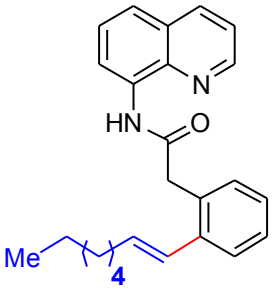
General Procedure A for Olefination with Unactivated Olefins:

A clean, oven-dried screw cap reaction tube with previously placed magnetic stir-bar was charged with phenyl acetamide (0.1 mmol, 26.2 mg), palladium (II) acetate (10 mol%, 0.01 mmol, 2.3 mg) and *rac*-BINAM (1,1´-binaphthyl-2,2´-diamine) (20 mol%, 0.02 mmol, 5.6 mg). Then sodium hydrogen carbonate (0.2 mmol, 16 mg) and benzoquinone (0.1 mmol, 10.8 mg) was introduced in this reaction mixture. The cap was fitted with a rubber septum and the reaction tube was evacuated and back filled with oxygen and this sequence was repeated three additional times. Liquid 1-octene (0.2 mmol, 32 µL) and oxygenated dichloroethane (DCE, 1 mL) was added to this mixture by syringe under the positive pressure of oxygen. The reaction mixture was vigorously stirred (600 rpm on Heidolph MR Hei-Standard stirrer) for 24 h in O_2 atmosphere in a preheated oil bath of 100 ºC. The reaction mixture was cooled to room temperature and extracted thrice with ethyl acetate (3X10 mL) through celite filter. The organic layer was collected and dried over anhydrous Na_2SO_4. After filtration and evaporation of the solvent, the crude mixture was purified by column chromatography using silica gel (60-120/100-200 mesh size) and petroleum-ether/ethyl acetate as the eluent. Isolated yields were determined as combined yield of linear and branched product (except the cases where single isomer was obtained). The major/minor ratio was determined based on the GC analysis of crude reaction mixture. For linear unactivated olefins (entries **3a**-**3f**, Table 1 and entries **5a**-**5d** and **5k**, Table 3) 3-5% diolefinated product (GC) was detected. However, we could not isolate these compounds in pure form. For all other cases we did not detect the diolefination product.

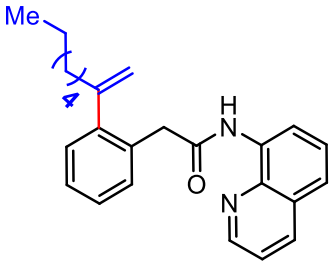
General Procedure B for Preparation of Aryl Acetamides:

A clean, oven-dried screw cap reaction tube with previously placed magnetic stir-bar was charged with phenyl acetic acid (5 mmol, 680 mg), catalytic amount DMF and 10 mL dichloromethane. The reaction mixture was vigorously stirred (600 rpm on Heidolph MR Hei-Standard stirrer) on an ice bath. Under this ice cold condition oxalyl chloride was added drop by drop. The cap was fitted with a rubber septum and the reaction tube was evacuated and back filled with nitrogen. This sequence was repeated three additional times. The ice bath was removed and the reaction mixture was left for vigorous stirring under room temperature for 24 h. A clean, dried round bottom flask was charged with 8-aminoquinoline (4 mmol, 576 mg), triethylamine (6 mmol, 850 µL) and 15 mL dichloromethane. The flask was placed on an ice bath and under this ice-cold condition the aforementioned reaction mixture with aryl acetic acid was added drop wise. The reaction mixture was kept for vigorous stirring under room temperature for 24h. The reaction mixture was extracted thrice with dichloromethane (3X20 mL) and water (3X10 mL). The organic layer was collected and dried over anhydrous Na_2SO_4. After filtration and evaporation of the solvent, the crude mixture was purified by column chromatography using silica gel (60-120/100-200 mesh size) and petroleum-ether/ethyl acetate as the eluent.

NMR data:

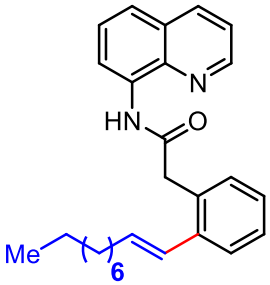


(*E*)-2-(2-(oct-1-enyl)phenyl)-N-(quinolin-8-yl)acetamide (Table 1, entry 3a): Olefination was done by general procedure A with phenyl acetamide (0.1 mmol, 26.2 mg) as the substrate. Pure linear olefinated product (major) was isolated by column chromatography through a silica gel column (mesh 100-200) [major/minor ratio; 8:1]. Eluent: ethyl acetate/ petroleum ether (3:97 v/v); yellowish liquid; isolated yield: 75% (28 mg). Another fraction was isolated as an inseparable mixture of linear and branched products (**3a** plus **3a´**, total 7%). **^{1}H NMR** (500 MHz, $CDCl_3$) δ 0.81 (td, *J* = 7.0, 1.1 Hz, 3H), 1.10 – 1.41 (m, 7H), 2.12 – 2.20 (m, 2H), 3.95 (s, 2H), 6.11 (dtd, *J* = 15.3, 7.0, 1.1 Hz, 1H), 6.68 (dd, *J* = 15.5, 1.4 Hz, 1H), 7.28 – 7.34 (m, 2H), 7.35 – 7.40 (m, 2H), 7.43 – 7.55 (m, 3H), 8.10 (dt, *J* = 8.2, 1.4 Hz, 1H), 8.63 (dt, *J* = 4.4, 1.4 Hz, 1H), 8.74 (dt, *J* = 7.5, 1.3 Hz, 1H), 9.85 (s, 1H). **^{13}C NMR** (126 MHz, $CDCl_3$) δ 14.29, 22.75, 29.01, 29.46, 31.87, 33.50, 43.35, 116.48, 121.65, 121.69, 126.95, 127.51, 127.63, 128.09, 129.25, 130.83, 131.05, 131.72, 134.62, 135.07, 136.31, 138.40, 138.67, 148.27, 169.64. **DEPT-135**: δ 14.29, 22.74, 29.00, 29.46, 31.86, 33.50, 43.35, 116.47, 121.65, 121.69, 126.95, 126.98, 127.51, 127.62, 128.09, 131.05, 135.07, 136.31, 148.26. **IR** (thin film): 3346, 2926, 2854, 1682, 1531, 1486, 1327, 1261, 964, 754 cm^{-1}. **HRMS (ESI)**: calcd. for $C_{25}H_{28}N_2NaO$: 395.2094, found: 395.2095.

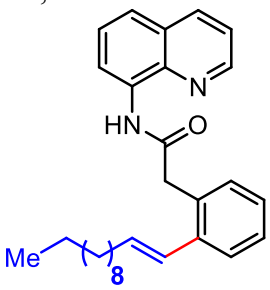


2-(2-(oct-1-en-2-yl)phenyl)-N-(quinolin-8-yl)acetamide (Table 1, entry 3a´, minor product): Minor branched olefination product was obtained following general procedure A, the titled compound (minor) was obtained in 6% (3 mg) by column chromatography through a silica gel column (mesh 100-200). Eluent: ethyl acetate/ petroleum ether (3:97 v/v) **^{1}H NMR** (500 MHz, $CDCl_3$) δ 0.77 (t, *J* = 7.1 Hz, 3H), 0.88 (ddd, *J* = 10.2, 6.5, 3.2 Hz, 1H), 1.05 – 1.23 (m, 4H), 1.23 – 1.33 (m, 2H), 1.38 (p, *J* = 7.7 Hz, 2H), 2.33 (t, *J* = 7.8 Hz, 2H), 3.91 (s, 2H), 4.99 (d, *J* = 1.8 Hz, 1H), 5.24 (d, *J* = 1.9 Hz, 1H), 7.20 (dd, *J* = 6.5, 2.4 Hz, 1H), 7.32 (tt, *J* = 7.4, 5.4 Hz, 2H), 7.38 (dd, *J* = 8.2, 4.2 Hz, 1H), 7.45 – 7.51 (m, 3H), 8.11 (dd, *J* = 8.3, 1.7 Hz, 1H), 8.64 (dd,

J = 4.3, 1.7 Hz, 1H), 8.74 (dd, J = 7.4, 1.5 Hz, 1H), 9.83 (s, 1H). **^{13}C NMR** (126 MHz, $CDCl_3$) δ 14.24, 22.77, 27.90, 29.30, 31.83, 38.72, 42.89, 115.02, 116.43, 121.67, 127.38, 127.55, 127.63, 128.03, 129.25, 130.84, 131.75, 134.64, 136.34, 138.65, 139.05, 144.19, 148.26, 149.49, 170.27. **IR** (thin film): 3341, 2927, 2855, 1687, 1528, 1486, 1328, 757 cm^{-1} . **HRMS (ESI)**: calcd. for $C_{25}H_{28}N_2NaO$: 395.2094, found: 395.2095.

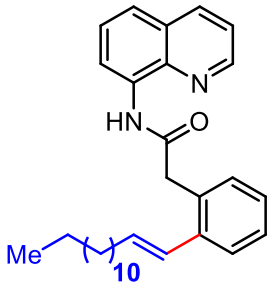


(*E*)-2-(2-(dec-1-enyl)phenyl)-N-(quinolin-8-yl)acetamide (Table 1, entry 3b): Olefination was done by general procedure A with phenyl acetamide (0.1 mmol, 26.2 mg) as the substrate. Pure linear olefinated product (major) was isolated by column chromatography through a silica gel column (mesh 100-200) [major/minor ratio; 8:1]. Eluent: ethyl acetate/ petroleum ether (3:97 v/v); yellowish liquid; isolated yield: 85% (35 mg). Unreacted 1-decene was recovered (7 mg). **^{1}H NMR** (400 MHz, $CDCl_3$) δ 0.85 (t, J = 7.0 Hz, 3H), 1.10 – 1.42 (m, 12H), 2.16 (qd, J = 7.2, 1.5 Hz, 2H), 3.95 (s, 2H), 6.11 (dt, J = 15.5, 7.0 Hz, 1H), 6.68 (dt, J = 15.5, 1.5 Hz, 1H), 7.26 – 7.34 (m, 2H), 7.35 – 7.40 (m, 2H), 7.44 – 7.55 (m, 3H), 8.07 – 8.12 (m, 1H), 8.63 (dd, J = 4.2, 1.7 Hz, 1H), 8.75 (dd, J = 7.3, 1.7 Hz, 1H), 9.85 (s, 1H). **^{13}C NMR** (101 MHz, $CDCl_3$) δ 14.32, 22.86, 29.35, 29.41, 29.51, 29.63, 32.08, 33.51, 43.36, 116.48, 121.65, 121.68, 126.88, 126.98, 127.00, 127.51, 127.55, 127.63, 128.02, 128.08, 131.05, 131.75, 135.09, 136.30, 138.42, 148.27, 169.64. **IR** (thin film): 3349, 2926, 2854, 1682, 1530, 1486, 1328, 1216, 756 cm^{-1}. **HRMS (ESI)**: calcd. for $C_{27}H_{32}KN_2O$: 439.2146, found: 439.2147.

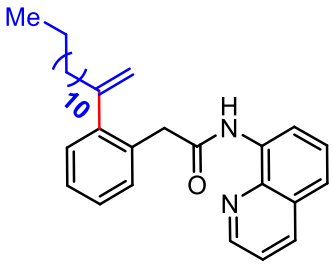


(*E*)-2-(2-(dodec-1-enyl)phenyl)-N-(quinolin-8-yl)acetamide (Table 1, entry 3c): Olefination was done by general procedure A with phenyl acetamide (0.1 mmol, 26.2 mg) as the substrate. Pure linear olefinated product (major) was isolated by column chromatography through a silica gel column (mesh 100-200) [major/minor ratio; 9:1]. Eluent: ethyl acetate/ petroleum ether (3:97 v/v); yellowish liquid; isolated yield: 85% (37 mg). Unreacted 1-dodecene was recovered (9.5 mg). **^{1}H NMR** (500 MHz, $CDCl_3$) δ 0.87 (t, J = 7.0 Hz, 3H), 1.04 – 1.40 (m, 16H), 2.16 (qd, J = 7.2, 1.5 Hz, 2H), 3.95 (s, 2H), 6.11 (dt, J = 15.5, 7.0 Hz, 1H), 6.68 (dd, J = 15.6, 1.5 Hz, 1H), 7.27 – 7.34 (m, 2H), 7.34 – 7.41 (m, 2H), 7.43 – 7.55 (m, 3H), 8.10 (dd, J = 8.3, 1.8 Hz, 1H),

8.63 (dd, J = 4.3, 1.7 Hz, 1H), 8.75 (dd, J = 7.5, 1.5 Hz, 1H), 9.85 (s, 1H). **^{13}C NMR** (126 MHz, $CDCl_3$) δ 14.35, 22.91, 29.36, 29.52, 29.54, 29.68, 29.76, 29.83, 32.13, 33.51, 43.35, 116.48, 121.66, 121.70, 126.97, 126.98, 127.52, 127.63, 128.01, 128.09, 130.98, 131.05, 131.73, 134.64, 135.11, 136.31, 138.41, 148.28, 169.66. **IR** (thin film): 3348, 2925, 2853, 1686, 1529, 1486, 1327, 1261, 964, 753 cm^{-1}. **HRMS (ESI)**: calcd. for $C_{29}H_{37}N_2O$: 429.2900, found: 429.2901.

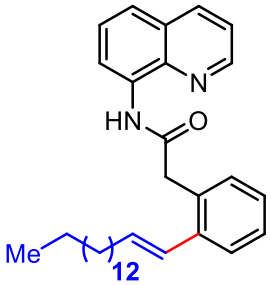


(*E*)-N-(quinolin-8-yl)-2-(2-(tetradec-1-enyl)phenyl)acetamide (Table 1, entry 3d): Olefination was done by general procedure A with phenyl acetamide (0.1 mmol, 26.2 mg) as the substrate. Pure linear olefinated product (major) was isolated by column chromatography through a silica gel column (mesh 100-200) [major/minor ratio; 8:1]. Eluent: ethyl acetate/ petroleum ether (3:97 v/v); yellowish liquid; isolated yield: 73% (33 mg). Another fraction was isolated as an inseparable mixture of linear and branched products (**3d** plus **3d´**, total 6%). Unreacted 1-tetradecene was recovered (12 mg). **^{1}H NMR** (500 MHz, $CDCl_3$) δ 0.88 (t, J = 6.6 Hz, 3H), 1.15 – 1.32 (m, 20H), 2.16 (q, J = 7.3 Hz, 2H), 3.95 (s, 2H), 6.12 (dt, J = 14.7, 6.9 Hz, 1H), 6.68 (d, J = 15.5 Hz, 1H), 7.30 (dd, J = 9.4, 7.3 Hz, 2H), 7.34 – 7.41 (m, 2H), 7.45 – 7.52 (m, 3H), 8.10 (d, J = 8.3 Hz, 1H), 8.63 (dd, J = 4.2, 2.0 Hz, 1H), 8.75 (d, J = 7.4 Hz, 1H), 9.85 (s, 1H). **^{13}C NMR** (126 MHz, $CDCl_3$) δ 14.36, 22.92, 29.36, 29.36, 29.52, 29.52, 29.58, 29.68, 29.76, 29.88, 32.14, 33.51, 43.35, 116.46, 121.65, 121.69, 126.96, 127.51, 127.62, 128.00, 128.09, 131.04, 131.72, 134.63, 135.10, 136.30, 138.40, 138.68, 148.28, 169.65. **IR** (thin film): 3347, 2924, 2853, 1682, 1531, 1486, 1327, 1261, 964, 754 cm^{-1}. **HRMS (ESI)**: calcd. for $C_{31}H_{41}N_2O$: 457.3213, found: 457.3218.

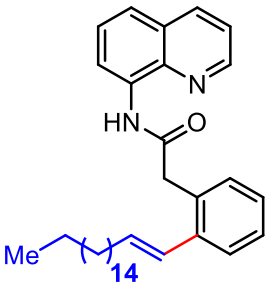


N-(quinolin-8-yl)-2-(2-(tetradec-1-en-2-yl)phenyl)acetamide (Table 1, entry 3d´, minor product): Minor branched olefination product was obtained following general procedure A, the titled compound (minor) was obtained in 5% (4 mg) by column chromatography through a silica gel column (mesh 100-200). Eluent: ethyl acetate/ petroleum ether (3:97 v/v). **^{1}H NMR** (500 MHz, Chloroform-*d*) δ 0.83 – 0.91 (m, 3H), 1.07 – 1.33 (m, 20H), 1.38 (h, J = 7.1, 6.7 Hz, 2H),

2.33 (t, J = 7.8 Hz, 2H), 3.91 (s, 2H), 4.99 (d, J = 2.0 Hz, 1H), 5.24 (q, J = 1.5 Hz, 1H), 7.17 – 7.23 (m, 1H), 7.31 (dtdt, J = 7.5, 5.5, 3.2, 1.8 Hz, 2H), 7.39 (ddd, J = 8.3, 4.2, 1.4 Hz, 1H), 7.43 – 7.54 (m, 3H), 8.11 (dt, J = 8.3, 1.6 Hz, 1H), 8.64 (dt, J = 4.2, 1.5 Hz, 1H), 8.71 – 8.77 (m, 1H), 9.83 (s, 1H). **HRMS (ESI)**: calcd. for $C_{31}H_{41}N_2O$: 457.3213, found: 457.3218.

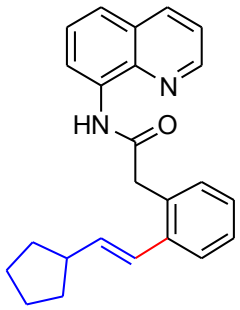


(*E*)-2-(2-(hexadec-1-enyl)phenyl)-N-(quinolin-8-yl)acetamide (Table 1, entry 3e): Olefination was done by general procedure A with phenyl acetamide (0.1 mmol, 26.2 mg) as the substrate. Pure linear olefinated product (major) was isolated by column chromatography through a silica gel column (mesh 100-200) [major/minor ratio; 8:1]. Eluent: ethyl acetate/ petroleum ether (3:97 v/v); yellowish semisolid; isolated yield: 85% (41 mg). Unreacted 1-hexadecene was recovered (15 mg). **^{1}H NMR** (400 MHz, $CDCl_3$) δ 0.89 (t, J = 6.8 Hz, 3H), 1.22 – 1.29 (m, 23H), 2.17 (qd, J = 7.1, 1.5 Hz, 2H), 3.96 (s, 2H), 6.12 (dt, J = 15.6, 7.0 Hz, 1H), 6.63 – 6.74 (m, 1H), 7.27 – 7.35 (m, 2H), 7.35 – 7.40 (m, 2H), 7.44 – 7.55 (m, 3H), 8.10 (dt, J = 8.3, 2.3 Hz, 1H), 8.64 (td, J = 4.5, 1.7 Hz, 1H), 8.76 (dd, J = 7.4, 1.6 Hz, 1H), 9.85 (d, J = 8.7 Hz, 1H). **^{13}C NMR** (101 MHz, $CDCl_3$) δ 14.35, 22.91, 29.35, 29.51, 29.58, 29.63, 29.68, 29.75, 29.82, 29.88, 29.91, 29.92, 32.14, 33.51, 43.34, 76.91, 77.23, 77.55, 116.48, 121.64, 121.68, 126.97, 127.51, 127.62, 127.99, 128.08, 131.04, 131.72, 134.62, 135.08, 136.31, 138.39, 138.66, 148.26, 169.63. **IR** (thin film): 3345, 2925, 2853, 1681, 1530, 1486, 1328, 1216, 964, 758 cm^{-1}. **HRMS (ESI)**: calcd. for $C_{33}H_{45}N_2O$: 485.3526, found: 485.3525.

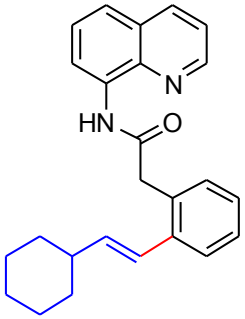


(*E*)-2-(2-(octadec-1-enyl)phenyl)-N-(quinolin-8-yl)acetamide (Table 1, entry 3f): Olefination was done by general procedure A with phenyl acetamide (0.1 mmol, 26.2 mg) as the substrate. Pure linear olefinated product (major) was isolated by column chromatography through a silica gel column (mesh 100-200) [major/minor ratio; 8:1]. Eluent: ethyl acetate/ petroleum ether (3:97 v/v); yellowish semisolid; isolated yield: 86% (44 mg). Unreacted 1-octadecene was recovered (16.5 mg). **^{1}H NMR** (400 MHz, Chloroform-*d*) δ 0.87 (t, 3H), 1.23 (d, J = 16.5 Hz, 28H), 2.16 (qd, J = 7.1, 1.5 Hz, 2H), 3.95 (s, 2H), 6.12 (dt, J = 15.5, 7.0 Hz, 1H), 6.68 (dd, J = 15.6, 1.5 Hz, 1H), 7.31 (qd, J = 7.1, 6.7, 1.8 Hz, 2H), 7.35 – 7.40 (m, 2H), 7.46 (dd, J = 8.3, 1.7 Hz, 1H), 7.49

(d, J = 7.4 Hz, 1H), 7.51 – 7.54 (m, 1H), 8.10 (dd, J = 8.3, 1.7 Hz, 1H), 8.63 (dd, J = 4.2, 1.7 Hz, 1H), 8.75 (dd, J = 7.4, 1.7 Hz, 1H), 9.85 (s, 1H). **^{13}C NMR** (101 MHz, $CDCl_3$) δ 14.36, 22.92, 29.37, 29.52, 29.59, 29.69, 29.71, 29.77, 29.79, 29.85, 29.89, 29.93, 31.07, 32.15, 33.52, 35.02, 43.35, 116.48, 121.66, 121.69, 126.84, 126.86, 126.96, 126.97, 127.52, 127.63, 128.01, 128.04, 128.09, 131.05, 131.73, 135.10, 135.10, 136.32, 148.27, 169.65. **IR** (thin film): 3351, 2925, 2854, 2682, 1531, 1486, 1385, 1217, 760 cm^{-1}. **HRMS (ESI)**: calcd. for $C_{35}H_{49}N_2O$: 513.3839, found: 513.3840.

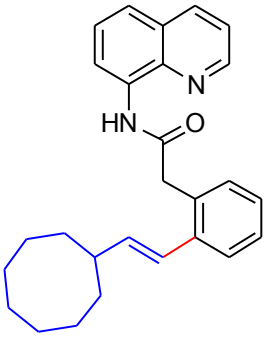


(*E*)-2-(2-(2-cyclopentylvinyl)phenyl)-N-(quinolin-8-yl)acetamide (Table 1, entry 3g): Olefination was done by general procedure A with phenyl acetamide (0.1 mmol, 26.2 mg) as the substrate. Pure linear olefinated product (major) was isolated by column chromatography through a silica gel column (mesh 100-200) [major/minor ratio; 8:1]. Eluent: ethyl acetate/ petroleum ether (2:98 v/v); yellowish liquid; isolated yield: 75% (26 mg). **^{1}H NMR** (500 MHz, Chloroform-*d*) δ 9.85 (s, 1H), 8.76 – 8.74 (m, 1H), 8.63 (dd, J = 4.2, 1.7 Hz, 1H), 8.11 – 8.09 (m, 1H), 7.54 – 7.50 (m, 2H), 7.49 – 7.45 (m, 2H), 7.38 – 7.36 (m, 1H), 7.31 – 7.28 (m, 2H), 6.72 – 6.63 (m, 1H), 6.08 (dd, J = 15.5, 7.9 Hz, 1H), 3.95 (s, 2H), 2.57 (dt, J = 8.8, 7.5 Hz, 1H), 1.74 (dddd, J = 14.2, 7.0, 5.8, 3.6 Hz, 2H), 1.58 – 1.48 (m, 2H), 1.30 – 1.25 (m, 4H). **^{13}C NMR** (126 MHz, $CDCl_3$) δ 169.69, 148.28, 139.46, 138.72, 138.39, 136.32, 134.65, 131.77, 131.05, 128.07, 128.02, 127.58, 127.51, 126.92, 125.11, 121.70, 121.66, 116.49, 44.15, 43.40, 33.33, 25.35. **IR** (thin film): 3346, 3016, 2954, 1682, 1531, 1486, 1328, 1216, 965, 757 cm^{-1}. **HRMS (ESI)**: calcd. for $C_{24}H_{24}KN_2O$: 395.1519, found: 395.1520.

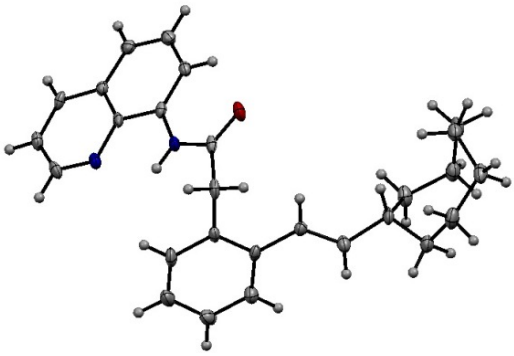


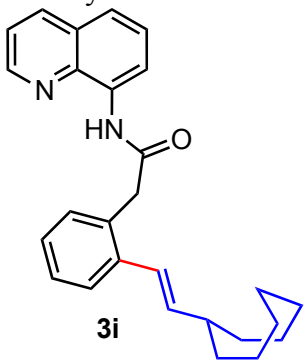
(*E*)-2-(2-(2-cyclohexylvinyl)phenyl)-N-(quinolin-8-yl)acetamide (Table 1, entry 3h): Olefination was done by general procedure A with phenyl acetamide (0.1 mmol, 26.2 mg) as the substrate. Pure linear olefinated product (major) was isolated by column chromatography through a silica gel column (mesh 100-200) [major/minor ratio; 10:1]. Eluent: ethyl acetate/ petroleum ether (3:97 v/v); white solid; isolated yield: 78% (28 mg). **^{1}H NMR** (400 MHz,

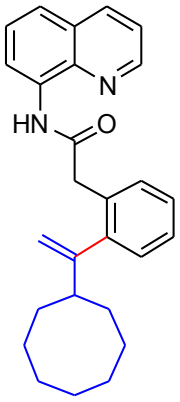
$CDCl_3$) δ 0.82 – 0.90 (m, 2H), 1.07 (dddd, *J* = 14.0, 12.4, 10.4, 8.1 Hz, 3H), 1.13 – 1.24 (m, 2H), 1.64 – 1.73 (m, 3H), 2.05 – 2.15 (m, 1H), 3.94 (s, 2H), 6.04 (dd, *J* = 15.7, 7.0 Hz, 1H), 6.65 (dd, *J* = 15.7, 1.3 Hz, 1H), 7.26 – 7.32 (m, 2H), 7.34 – 7.41 (m, 2H), 7.44 – 7.55 (m, 3H), 8.10 (dd, *J* = 8.3, 1.7 Hz, 1H), 8.64 (dd, *J* = 4.2, 1.7 Hz, 1H), 8.74 (dd, *J* = 7.4, 1.7 Hz, 1H), 9.85 (s, 1H). **^{13}C NMR** (101 MHz, $CDCl_3$) δ 26.12, 26.27, 29.92, 33.01, 41.51, 43.42, 116.48, 121.66, 121.70, 124.58, 126.90, 127.51, 127.59, 128.01, 128.07, 131.03, 131.88, 134.63, 136.32, 138.51, 138.69, 140.64, 148.28, 169.69. **IR** (thin film): 3348, 2925, 2851, 1682, 1531, 1486, 1385, 1328, 1217, 966, 826, 753 cm^{-1}. **HRMS (ESI)**: calcd. for $C_{25}H_{27}N_2O$: 371.2118, found: 371.2116.



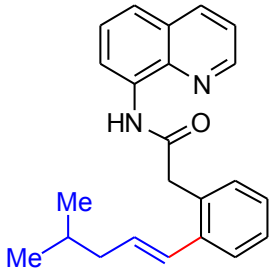
(*E*)-2-(2-(2-cyclooctylvinyl)phenyl)-N-(quinolin-8-yl)acetamide (Table 1, entry 3i): Olefination was done by general procedure A with phenyl acetamide (0.1 mmol, 26.2 mg) as the substrate. Pure linear olefinated product (major) was isolated by column chromatography through a silica gel column (mesh 100-200) [major/minor ratio; 12:1]. Eluent: ethyl acetate/ petroleum ether (3:97 v/v); white solid; isolated yield: 57% (23 mg). Unreacted vinyl cyclooctane was recovered (8 mg). **^{1}H NMR** (400 MHz, Chloroform-d) δ 1.35 – 1.54 (m, 7H), 1.53 – 1.71 (m, 7H), 2.28 – 2.40 (m, 1H), 3.95 (s, 2H), 6.07 (dd, *J* = 15.6, 7.6 Hz, 1H), 6.61 (dd, *J* = 15.7, 1.2 Hz, 1H), 7.31 (qd, *J* = 7.0, 1.7 Hz, 2H), 7.34 – 7.41 (m, 2H), 7.43 – 7.54 (m, 3H), 8.10 (dd, *J* = 8.3, 1.8 Hz, 1H), 8.63 (dd, *J* = 4.3, 1.7 Hz, 1H), 8.75 (dd, *J* = 7.4, 1.7 Hz, 1H), 9.85 (s, 1H). **^{13}C NMR** (101 MHz, $CDCl_3$) δ 25.08, 26.02, 27.56, 31.78, 41.64, 43.43, 116.47, 121.65, 121.69, 124.16, 126.95, 127.50, 127.54, 128.08, 131.05, 131.84, 134.63, 136.31, 137.53, 138.65, 138.69, 141.65, 148.29, 169.71. **IR** (thin film): 3350, 2924, 2854, 1683, 1530, 1486, 1385, 1328, 1217, 965, 756 cm^{-1}. **HRMS (ESI)**: calcd. for $C_{27}H_{30}KN_2O$: 437.1990, found: 437.1991. X-ray structure of the compound confirmed the *trans* geometry.





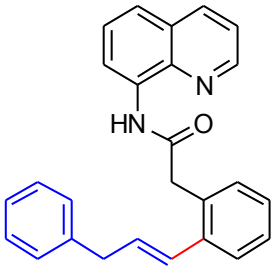


(E)-2-(2-(2-cyclooctylvinyl)phenyl)-N-(quinolin-8-yl)acetamide (Table 1, entry 3i′): Olefination was done by general procedure A with phenyl acetamide (0.1 mmol, 26.2 mg) as the substrate. Pure branched olefinated product (minor) was isolated by column chromatography through a silica gel column (mesh 100-200). Eluent: ethyl acetate/ petroleum ether (2:98 v/v); yellowish liquid; isolated yield: 5% (4 mg). **^{1}H NMR** (500 MHz, Chloroform-*d*) δ 0.81 – 0.93 (m, 1H), 1.09 – 1.26 (m, 5H), 1.70 (q, *J* = 7.3, 4.3 Hz, 3H), 1.84 – 1.92 (m, 5H), 2.13 (t, *J* = 10.6 Hz, 1H), 3.87 (s, 2H), 4.98 (d, *J* = 1.4 Hz, 1H), 5.21 (t, *J* = 1.5 Hz, 1H), 7.17 (dd, *J* = 7.1, 2.0 Hz, 1H), 7.27 – 7.35 (m, 2H), 7.38 (dd, *J* = 8.2, 4.2 Hz, 1H), 7.44 – 7.54 (m, 3H), 8.11 (dd, *J* = 8.3, 1.7 Hz, 1H), 8.64 (dd, *J* = 4.2, 1.7 Hz, 1H), 8.74 (dd, *J* = 7.4, 1.6 Hz, 1H), 9.81 (s, 1H). **HRMS (ESI)**: calcd. for $C_{27}H_{30}KN_2O$: 437.1990, found: 437.1991.

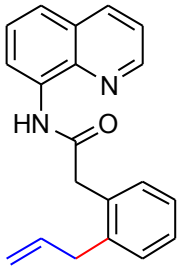


(*E*)-2-(2-(4-methylpent-1-enyl)phenyl)-N-(quinolin-8-yl)acetamide (Table 1, entry 3j): Olefination was done by general procedure A with phenyl acetamide (0.1 mmol, 26.2 mg) as the substrate. Pure linear olefinated product was isolated by column chromatography through a silica gel column (mesh 100-200). Eluent: ethyl acetate/ petroleum ether (3:97 v/v); yellowish liquid; isolated yield: 50% (17 mg). **^{1}H NMR** (400 MHz, $CDCl_3$) δ 0.82 (d, *J* = 6.7 Hz, 6H), 1.61 – 1.63 (m, 1H), 2.06 (td, *J* = 7.1, 1.4 Hz, 2H), 3.95 (s, 2H), 6.10 (dt, *J* = 15.5, 7.3 Hz, 1H), 6.67 (dt, *J* = 15.5, 1.4 Hz, 1H), 7.26 – 7.35 (m, 2H), 7.35 – 7.40 (m, 2H), 7.43 – 7.56 (m, 3H), 8.10 (dd, *J* = 8.3, 1.7 Hz, 1H), 8.63 (dd, *J* = 4.2, 1.7 Hz, 1H), 8.74 (dd, *J* = 7.3, 1.7 Hz, 1H), 9.85 (s, 1H).**^{13}C NMR** (101 MHz, $CDCl_3$) δ 22.46, 28.69, 42.76, 43.36, 116.48, 121.66, 121.70, 127.02, 127.50, 127.68, 128.11, 128.14, 128.20, 131.06, 131.73, 131.76, 133.72, 134.62, 136.31, 138.42, 148.29,

169.65. **IR** (thin film): 3339, 3018, 2956, 1682, 1531, 1486, 1328, 1217, 967, 756 cm^{-1}. **HRMS (ESI)**: calcd. for $C_{23}H_{24}N_2NaO$: 367.1781, found: 367.1779.

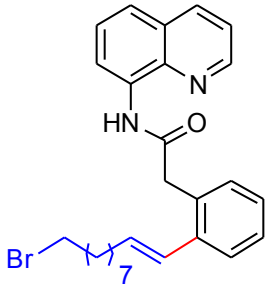


(E)-2-(2-(3-phenylprop-1-enyl)phenyl)-N-(quinolin-8-yl)acetamide (Table 2, entry 4a): Olefination was done by general procedure A with phenyl acetamide (0.1 mmol, 26.2 mg) as the substrate. Pure linear olefinated product was isolated by column chromatography through a silica gel column (mesh 100-200) [major/minor ratio; 11:1]. Eluent: ethyl acetate/ petroleum ether (2:98 v/v); yellowish liquid; isolated yield: 72% (27 mg). Unreacted allyl benzene was recovered (7.5 mg). **^{1}H NMR** (500 MHz, Chloroform-*d*) δ 3.67 (dd, *J* = 7.1, 1.5 Hz, 2H), 4.12 (s, 2H), 6.40 (dt, *J* = 15.6, 7.0 Hz, 1H), 6.95 (d, *J* = 15.4 Hz, 1H), 7.39 – 7.50 (m, 4H), 7.51 – 7.62 (m, 4H), 7.63 – 7.74 (m, 4H), 8.25 (dd, *J* = 8.3, 1.7 Hz, 1H), 8.75 (dd, *J* = 4.2, 1.7 Hz, 1H), 8.92 (dd, *J* = 7.5, 1.5 Hz, 1H), 10.01 (s, 1H). **^{13}C NMR** (126 MHz, $CDCl_3$) δ 39.77, 43.38, 116.50, 121.68, 121.76, 126.22, 127.02, 127.51, 127.97, 128.15, 128.37, 128.51, 128.72, 129.17, 129.73, 131.13, 131.94, 132.90, 134.59, 136.30, 137.89, 140.07, 148.31, 169.50. **IR** (thin film): 3344, 2922, 2851, 1682, 1530, 1485, 1327, 1217, 966, 753 cm^{-1}. **HRMS (ESI)**: calcd. for $C_{26}H_{22}N_2NaO$: 401.1624, found: 401.1627.

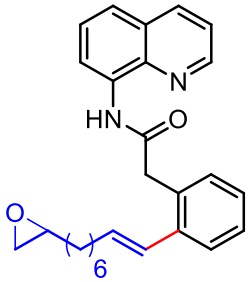


2-(2-allylphenyl)-N-(quinolin-8-yl)acetamide (Table 2, entry 4b): Olefination was done by general procedure A with phenyl acetamide (0.1 mmol, 26.2 mg) as the substrate. Pure linear olefinated product was isolated by column chromatography through a silica gel column (mesh 100-200). Eluent: ethyl acetate/ petroleum ether (3:97 v/v); yellowish liquid; isolated yield: 63% (19 mg). **^{1}H NMR** (400 MHz, $CDCl_3$) δ 3.51 (dt, *J* = 6.2, 1.6 Hz, 2H), 3.92 (s, 2H), 4.94 – 5.11 (m, 2H), 5.97 (ddt, *J* = 16.6, 10.3, 6.3 Hz, 1H), 7.30 (dtd, *J* = 9.3, 6.1, 3.2 Hz, 3H), 7.37 – 7.42 (m, 2H), 7.46 – 7.54 (m, 2H), 8.11 (dd, *J* = 8.3, 1.7 Hz, 1H), 8.64 (dd, *J* = 4.2, 1.7 Hz, 1H), 8.74 (dd, *J* = 7.3, 1.7 Hz, 1H), 9.85 (s, 1H). **^{13}C NMR** (101 MHz, $cdcl_3$) δ 37.75, 42.88, 116.45, 116.54, 121.70, 121.75, 127.31, 127.55, 128.07, 128.13, 130.54, 131.20, 133.37, 134.63, 136.36,

136.72, 138.73, 139.07, 148.35, 169.68. **HRMS (ESI)**: calcd. for $C_{20}H_{19}N_2O$: 303.1492, found: 303.1492.

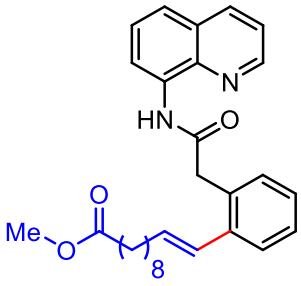


(*E*)-2-(2-(10-bromodec-1-enyl)phenyl)-N-(quinolin-8-yl)acetamide (Table 2, entry 4c): Olefination was done by general procedure A with phenyl acetamide (0.1 mmol, 26.2 mg) as the substrate. Pure linear olefinated product was isolated by column chromatography through a silica gel column (mesh 100-200) [major/minor ratio; 8:1]. Eluent: ethyl acetate/ petroleum ether (3:97 v/v); yellowish liquid; isolated yield: 65% (31 mg). **^{1}H NMR** (400 MHz, Chloroform-*d*) δ 1.10 – 1.24 (m, 5H), 1.28 – 1.39 (m, 5H), 1.75 – 1.84 (m, 2H), 2.16 (qd, *J* = 7.2, 1.5 Hz, 2H), 3.37 (t, *J* = 6.9 Hz, 2H), 3.95 (s, 2H), 6.11 (dt, *J* = 15.5, 7.0 Hz, 1H), 6.68 (dd, *J* = 15.5, 1.5 Hz, 1H), 7.24 – 7.36 (m, 2H), 7.35 – 7.40 (m, 2H), 7.45 – 7.54 (m, 3H), 8.08 – 8.13 (m, 1H), 8.63 (dd, *J* = 4.2, 1.7 Hz, 1H), 8.75 (dd, *J* = 7.2, 1.8 Hz, 1H), 9.85 (s, 1H). **^{13}C NMR** (126 MHz, $CDCl_3$) δ 28.34, 28.81, 29.15, 29.40, 29.42, 33.00, 33.43, 34.27, 43.37, 116.47, 121.67, 126.97, 127.11, 127.52, 127.67, 128.02, 128.11, 129.87, 131.08, 131.73, 134.65, 134.92, 136.32, 138.37, 138.70, 148.29, 169.64. **DEPT-135**: δ 28.34, 28.81, 29.15, 29.39, 29.41, 33.00, 33.43, 34.27, 43.37, 116.47, 121.67, 121.71, 126.97, 127.11, 127.52, 127.67, 128.11, 131.08, 134.92, 136.32, 148.29. **IR** (thin film): 3335, 2928, 2854, 1682, 1531, 1486, 1328, 1217, 965, 757, 640, 565 cm^{-1}. **HRMS (ESI)**: calcd. for $C_{27}H_{31}BrN_2NaO$: 501.1512, found: 501.1515.

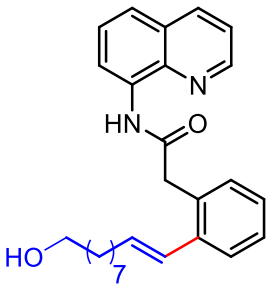


(*E*)-2-(2-(8-(oxiran-2-yl)oct-1-enyl)phenyl)-N-(quinolin-8-yl)acetamide (Table 2, entry 4d): Olefination was done by general procedure A with phenyl acetamide (0.1 mmol, 26.2 mg) as the substrate. Pure linear olefinated product was isolated by column chromatography through a silica gel column (mesh 100-200) [major/minor ratio; 8:1]. Eluent: ethyl acetate/ petroleum ether (5:95 v/v); yellowish liquid; isolated yield: 65% (28 mg). **^{1}H NMR** (500 MHz, Chloroform-*d*) δ 1.28 – 1.41 (m, 8H), 1.43 – 1.48 (m, 2H), 2.17 (qd, *J* = 7.1, 1.5 Hz, 2H), 2.43 (dd, *J* = 5.1, 2.8 Hz, 1H), 2.72 (dd, *J* = 5.0, 4.0 Hz, 1H), 2.85 (tdd, *J* = 5.6, 4.0, 2.7 Hz, 1H), 3.95 (s, 2H), 6.10 (dt, *J* =

15.6, 7.0 Hz, 1H), 6.68 (dd, *J* = 15.5, 1.6 Hz, 1H), 7.27 – 7.34 (m, 2H), 7.35 – 7.39 (m, 2H), 7.43 – 7.55 (m, 3H), 8.08 – 8.13 (m, 1H), 8.63 (dd, *J* = 4.3, 1.7 Hz, 1H), 8.74 (dd, *J* = 7.4, 1.6 Hz, 1H), 9.85 (s, 1H). **^{13}C NMR** (126 MHz, $CDCl_3$) δ 25.55, 28.99, 29.22, 29.36, 29.39, 29.91, 33.28, 34.40, 43.39, 50.71, 71.60, 116.53, 121.67, 121.73, 127.02, 127.26, 127.52, 127.69, 128.04, 128.12, 131.09, 131.75, 134.66, 134.81, 136.32, 138.42, 138.74, 148.30, 169.68. **IR** (thin film): 3343, 2928, 1682, 1531, 1486, 1328, 1217, 964, 756 cm^{-1}. **HRMS (ESI)**: calcd. for $C_{27}H_{30}KN_2O_2$: 453.1939, found: 453.1938.

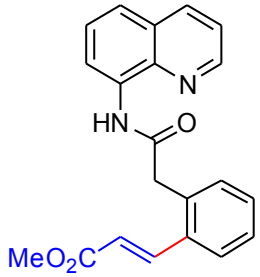


(*E*)-methyl 11-(2-(2-oxo-2-(quinolin-8-ylamino)ethyl)phenyl)undec-10-enoate (Table 2, entry 4e) : Olefination was done by general procedure A with phenyl acetamide (0.1 mmol, 26.2 mg) as the substrate. Pure linear olefinated product [E/Z – 5:1] was isolated by column chromatography through a silica gel column (mesh 100-200) [major/minor ratio; 10:1]. Eluent: ethyl acetate/ petroleum ether (5:95 v/v); yellowish liquid; isolated yield: 68% (31 mg). Unreacted methyl 10-undecenoate was recovered (9 mg). **^{1}H NMR** (500 MHz, Chloroform-*d*) δ 1.10 – 1.26 (m, 10H), 1.27 – 1.38 (m, 3H), 1.56 (pd, *J* = 7.5, 3.2 Hz, 3H), 2.16 (qd, *J* = 7.2, 1.5 Hz, 2H), 2.27 (td, *J* = 7.5, 2.7 Hz, 4H), 3.66 (s, 5H), 3.95 (s, 2H), 6.02 – 6.07 (m, 0H), 6.11 (dt, *J* = 15.3, 6.8 Hz, 1H), 6.64 – 6.71 (m, 1H), 7.30 (ddd, *J* = 9.1, 7.1, 1.6 Hz, 1H), 7.34 – 7.41 (m, 2H), 7.43 – 7.54 (m, 4H), 8.09 (ddd, *J* = 8.3, 3.8, 1.7 Hz, 1H), 8.59 (dp, *J* = 3.9, 1.9 Hz, 0H), 8.62 (dd, *J* = 4.3, 1.7 Hz, 1H), 8.74 (dd, *J* = 7.5, 1.6 Hz, 1H), 9.82 (s, 0H), 9.85 (s, 1H). **^{13}C NMR** (126 MHz, $CDCl_3$) δ 25.09, 27.87, 29.19, 29.23, 29.28, 29.36, 29.41, 29.50, 33.43, 34.27, 38.64, 39.26, 43.32, 51.63, 116.43, 121.58, 121.63, 121.69, 126.15, 126.93, 127.01, 127.36, 127.44, 127.46, 127.50, 127.62, 127.83, 127.92, 127.95, 127.97, 128.07, 128.76, 130.83, 131.03, 131.69, 134.59, 134.95, 135.41, 136.17, 136.28, 138.34, 138.65, 139.21, 148.17, 148.25, 169.63, 174.53. **IR** (thin film) 3344, 2928, 1737, 1682, 1528, 1486, 1425, 1327, 1217, 965, 756 cm^{-1}. **HRMS (ESI)**: calcd. for $C_{29}H_{35}N_2O_3$: 459.2642, found: 459.2652.

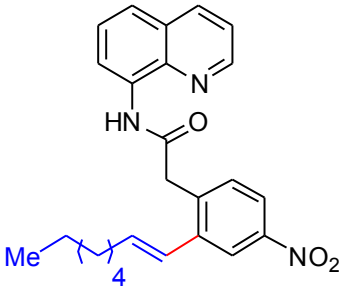


(*E*)-2-(2-(10-hydroxydec-1-enyl)phenyl)-N-(quinolin-8-yl)acetamide (Table 2, entry 4f): Olefination was done by general procedure A with phenyl acetamide (0.1 mmol, 26.2 mg) as the

substrate. Pure linear olefinated product was isolated by column chromatography through a silica gel column (mesh 100-200). Eluent: ethyl acetate/ petroleum ether (3:97 v/v); yellowish liquid; isolated yield: 61% (26 mg). **^{1}H NMR** (500 MHz, Chloroform-*d*) δ 1.14 – 1.24 (m, 6H), 1.30 – 1.38 (m, 4H), 1.71 (dt, *J* = 14.3, 6.9 Hz, 2H), 2.17 (qd, *J* = 7.2, 1.5 Hz, 2H), 3.49 (t, *J* = 6.8 Hz, 2H), 3.96 (s, 2H), 6.11 (dt, *J* = 15.6, 6.9 Hz, 1H), 6.69 (d, *J* = 15.5 Hz, 1H), 7.30 (dtd, *J* = 16.4, 7.4, 1.7 Hz, 2H), 7.35 – 7.41 (m, 2H), 7.45 – 7.54 (m, 3H), 8.07 – 8.14 (m, 1H), 8.64 (dt, *J* = 4.3, 2.6 Hz, 1H), 8.76 (dd, *J* = 7.5, 1.5 Hz, 1H), 9.88 (s, 1H). **^{13}C NMR** (126 MHz, $CDCl_3$) δ 27.01, 28.90, 29.12, 29.37, 29.41, 32.78, 33.40, 43.30, 45.35, 116.64, 121.62, 121.71, 126.92, 127.09, 127.54, 127.62, 128.01, 128.06, 131.05, 131.71, 134.53, 134.85, 136.46, 136.48, 138.33, 148.14, 169.64. **IR** (thin film): 3343, 3016, 2928, 1682, 1530, 1485, 1328, 1217, 965, 755, 668 cm^{-1}.

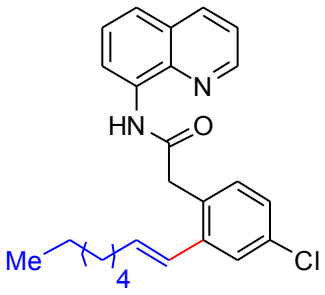


(*E*)-methyl 3-(2-(2-oxo-2-(quinolin-8-ylamino)ethyl)phenyl)acrylate (Table 2, entry 4g): Olefination was done by general procedure A with phenyl acetamide (0.1 mmol, 26.2 mg) as the substrate. Pure olefinated product was isolated by column chromatography through a silica gel column (mesh 100-200). Eluent: ethyl acetate/ petroleum ether (4:96 v/v); yellowish solid; isolated yield: 80% (30 mg). **^{1}H NMR** (500 MHz, Chloroform-*d*) δ 3.75 (s, 3H), 4.05 (s, 2H), 6.42 (d, *J* = 15.8 Hz, 1H), 7.35 – 7.42 (m, 2H), 7.42 – 7.47 (m, 2H), 7.47 – 7.52 (m, 2H), 7.67 (dd, *J* = 7.7, 1.3 Hz, 1H), 8.06 – 8.13 (m, 2H), 8.68 (dd, *J* = 4.3, 1.7 Hz, 1H), 8.72 (dd, *J* = 6.9, 2.1 Hz, 1H), 9.88 (s, 1H). **^{13}C NMR** (126 MHz, $CDCl_3$) δ 42.66, 51.94, 116.62, 120.92, 121.75, 121.89, 127.48, 128.02, 128.29, 130.68, 131.50, 134.28, 134.44, 134.46, 134.52, 136.42, 138.58, 141.88, 148.33, 167.21, 168.63. **IR** (thin film): 3341, 3017, 2950, 1711, 1634, 1528, 1486, 1425, 1324, 1173, 976, 758 cm^{-1}. **HRMS (ESI)**: calcd. for $C_{21}H_{18}N_2NaO_3$: 369.1210, found: 369.1206.

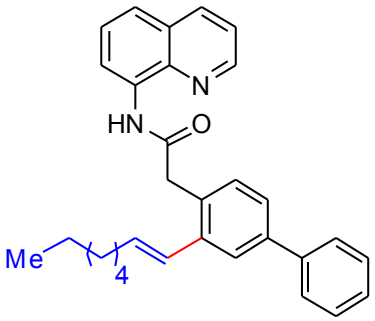


(*E*)-2-(4-nitro-2-(oct-1-enyl)phenyl)-N-(quinolin-8-yl)acetamide (Table 3, entry 5a): Olefination was done by general procedure A with 4-nitro phenyl acetamide (0.1 mmol, 31 mg) as the substrate. Pure linear olefinated product [E/Z–5:1] was isolated by column chromatography through a silica gel column (mesh 100-200) [major/minor ratio; 9:1]. Eluent:

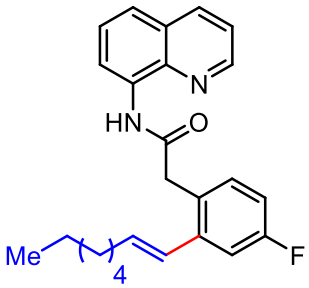
ethyl acetate/ petroleum ether (5:95 v/v); yellowish liquid; isolated yield: 85% (35 mg). **^{1}H NMR** (500 MHz, Chloroform-*d*) δ 0.80 (dt, *J* = 21.3, 7.0 Hz, 4H), 1.14 – 1.28 (m, 8H), 1.38 (q, *J* = 7.5 Hz, 2H), 2.22 (qd, *J* = 7.2, 1.5 Hz, 2H), 3.97 (s, 0H), 4.03 (s, 2H), 5.89 – 5.93 (m, 0H), 6.30 (dt, *J* = 15.5, 7.0 Hz, 1H), 6.56 (d, *J* = 11.5 Hz, 0H), 6.69 (dt, *J* = 15.5, 1.6 Hz, 1H), 7.41 – 7.46 (m, 1H), 7.49 – 7.55 (m, 3H), 8.10 (dd, *J* = 8.5, 2.5 Hz, 1H), 8.14 – 8.18 (m, 1H), 8.36 (d, *J* = 2.4 Hz, 1H), 8.68 – 8.73 (m, 2H), 9.88 (s, 1H). **^{13}C NMR** (126 MHz, $CDCl_3$) δ 167.75, 148.45, 147.90, 139.99, 138.83, 138.54, 138.20, 136.56, 134.23, 131.94, 128.09, 127.53, 125.34, 122.14, 121.93, 121.88, 121.73, 116.72, 42.92, 33.49, 31.82, 29.91, 29.04, 22.73, 14.26. **DEPT 135**: δ 138.20, 136.56, 131.94, 127.53, 125.33, 122.13, 121.93, 121.88, 121.73, 116.72, 42.91, 33.49, 31.82, 29.91, 29.17, 22.72, 14.26. **IR** (thin film): 3346, 2928, 2857, 1690, 1524, 1481, 1349, 965, 760 cm^{-1}. **HRMS (ESI)**: calcd. for $C_{25}H_{28}N_3O_3$: 418.2125, found: 418.2130.



(*E*)-2-(4-chloro-2-(oct-1-enyl)phenyl)-N-(quinolin-8-yl)acetamide (Table 3, entry 5b): Olefination was done by general procedure A with 4-chloro phenyl acetamide (0.1 mmol, 30 mg) as the substrate. Pure linear olefinated product was isolated by column chromatography through a silica gel column (mesh 100-200) [major/minor ratio; 10:1]. Eluent: ethyl acetate/ petroleum ether (3:97 v/v); yellowish liquid; isolated yield: 78% (32 mg). **^{1}H NMR** (400 MHz, Chloroform-*d*) δ 9.85 (s, 1H), 8.72 (dd, *J* = 7.0, 2.0 Hz, 1H), 8.67 (dd, *J* = 4.2, 1.7 Hz, 1H), 8.11 (dd, *J* = 8.3, 1.7 Hz, 1H), 7.53 – 7.46 (m, 3H), 7.40 (dd, *J* = 8.3, 4.3 Hz, 1H), 7.29 (d, *J* = 8.2 Hz, 1H), 7.24 (dd, *J* = 8.2, 2.3 Hz, 1H), 6.61 (dt, *J* = 15.6, 1.5 Hz, 1H), 6.14 (dt, *J* = 15.5, 7.0 Hz, 1H), 3.90 (s, 2H), 2.16 (qd, *J* = 7.1, 1.5 Hz, 2H), 1.40 – 1.09 (m, 8H), 0.82 (t, *J* = 6.9 Hz, 3H). **^{13}C NMR** (101 MHz, $CDCl_3$) δ 169.03, 148.38, 140.06, 138.60, 136.41, 134.44, 133.83, 132.30, 130.22, 129.00, 128.02, 127.49, 127.43, 126.81, 125.98, 121.85, 121.74, 116.51, 42.61, 33.43, 31.83, 29.30, 28.99, 22.72, 14.27. **DEPT 135**: δ 138.20, 136.56, 131.94, 127.53, 125.33, 122.13, 121.93, 121.88, 121.73, 116.72, 42.91, 33.49, 31.82, 29.91, 29.17, 22.72, 14.26. **IR** (thin film): 3342, 2928, 2855, 1682, 1528, 1486, 1328, 1216, 965, 757(br) cm^{-1}. **HRMS (ESI)**: calcd. for $C_{25}H_{28}ClN_2O$: 407.1885, found: 407.1887.

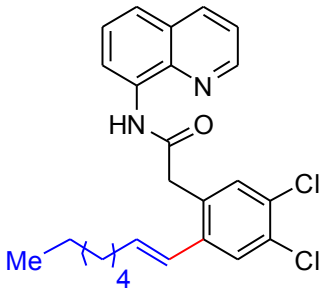


(*E*)-2-(3-(oct-1-enyl)biphenyl-4-yl)-N-(quinolin-8-yl)acetamide (Table 3, entry 5c): Olefination was done by general procedure A with 4-biphenyl acetamide (0.1 mmol, 34 mg) as the substrate. Pure linear olefinated product was isolated by column chromatography through a silica gel column (mesh 100-200) [major/minor ratio; 8:1]. Eluent: ethyl acetate/ petroleum ether (3:97 v/v); yellowish liquid; isolated yield: 67% (30 mg). Unreacted 1-octene was recovered (4 mg). **^{1}H NMR** (500 MHz, Chloroform-*d*) δ 10.00 (s, 1H), 8.78 (dd, *J* = 7.5, 1.5 Hz, 1H), 8.65 (dd, *J* = 4.3, 1.7 Hz, 1H), 8.15 (d, *J* = 8.3 Hz, 1H), 7.73 (d, *J* = 1.9 Hz, 1H), 7.67 – 7.61 (m, 2H), 7.56 – 7.43 (m, 6H), 7.41 (dd, *J* = 8.3, 4.3 Hz, 1H), 7.38 – 7.34 (m, 1H), 6.75 (dd, *J* = 15.5, 1.6 Hz, 1H), 6.20 (dt, *J* = 15.5, 7.0 Hz, 1H), 4.01 (s, 2H), 2.20 (qd, *J* = 7.1, 1.5 Hz, 2H), 1.36 (ddd, *J* = 13.1, 8.6, 6.9 Hz, 2H), 1.31 – 1.14 (m, 6H), 0.82 (t, *J* = 6.9 Hz, 3H). **^{13}C NMR** (126 MHz, $CDCl_3$) δ 169.71, 147.91, 141.30, 141.00, 138.76, 135.33, 131.52, 130.92, 128.97, 128.18, 128.16, 127.84, 127.82, 127.78, 127.76, 127.50, 127.36, 127.13, 126.37, 125.78, 121.83, 121.62, 42.90, 33.54, 31.88, 29.48, 29.04, 22.75, 14.28. **DEPT 135**: δ 138.20, 136.56, 131.94, 127.53, 125.33, 122.13, 121.93, 121.88, 121.73, 116.72, 42.91, 33.49, 31.82, 29.91, 29.17, 22.72, 14.26. **HRMS (ESI)**: calcd. for $C_{31}H_{33}N_2O$: 449.2587, found: 449.2589. **IR** (thin film): 3342, 2925, 2853, 1682, 1531, 1327, 1261, 964, 759 cm^{-1}.

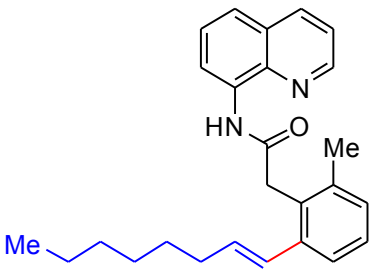


(*E*)-2-(4-fluoro-2-(oct-1-enyl)phenyl)-N-(quinolin-8-yl)acetamide (Table 3, entry 5d): Olefination was done by general procedure A with 4-fluoro phenyl acetamide (0.1 mmol, 28 mg) as the substrate. Pure linear olefinated product was isolated by column chromatography through a silica gel column (mesh 100-200) [major/minor ratio; 8:1]. Eluent: ethyl acetate/ petroleum ether (3:97 v/v); yellowish liquid; isolated yield: 55% (21 mg). Unreacted 1-octene was recovered (5 mg). **^{1}H NMR** (500 MHz, Chloroform-*d*) δ 0.81 (t, *J* = 6.9 Hz, 3H), 1.14 – 1.25 (m, 6H), 1.29 – 1.34 (m, 2H), 2.16 (qd, *J* = 7.2, 1.5 Hz, 2H), 3.91 (s, 2H), 6.13 (dt, *J* = 15.5, 7.0 Hz, 1H), 6.62 (dq, *J* = 15.4, 1.6 Hz, 1H), 6.98 (td, *J* = 8.3, 2.8 Hz, 1H), 7.22 (dd, *J* = 10.2, 2.8 Hz, 1H), 7.32 (dd, *J* = 8.4, 5.8 Hz, 1H), 7.39 (dd, *J* = 8.3, 4.2 Hz, 1H), 7.45 – 7.54 (m, 2H), 8.11 (dd, *J* = 8.3, 1.7 Hz, 1H), 8.66 (dd, *J* = 4.2, 1.7 Hz, 1H), 8.73 (dd, *J* = 7.3, 1.7 Hz, 1H), 9.84 (s, 1H). **^{13}C NMR** (126 MHz, $CDCl_3$) δ 14.26, 22.72, 28.98, 29.30, 31.83, 33.39, 42.49, 113.33 (d, *J* = 21.42 Hz), 114.33 (d, *J* = 21.42 Hz), 116.49, 121.81, 121.76, 126.23, 126.21, 127.50, 127.54 (d, *J* = 2.52 Hz), 128.03, 132.62 (d, *J* = 8.82 Hz), 134.49, 136.36, 136.21, 138.64, 140.43 (d, *J* = 8.82 Hz), 148.35, 162.70 (d, *J* = 245.7 Hz), 169.38. **IR** (thin film): 3343, 2927, 2855, 1682,1531,

1486, 1327, 1270, 1158, 964, 556 cm^{-1}. **HRMS (ESI)**: calcd. for $C_{25}H_{28}FN_2O$: 391.2180, found: 391.2181.

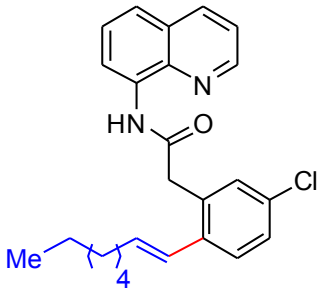


(*E*)-2-(4,5-dichloro-2-(oct-1-enyl)phenyl)-N-(quinolin-8-yl)acetamide (Table 3, entry 5e): Olefination was done by general procedure A with 3,4-dichloro phenyl acetamide (0.1 mmol, 33 mg) as the substrate. Pure linear olefinated product was isolated by column chromatography through a silica gel column (mesh 100-200) [major/minor ratio; 15:1]. Eluent: ethyl acetate/ petroleum ether (3:97 v/v); yellowish liquid; isolated yield: 49 % (22 mg). Unreacted 1-octene was recovered (5 mg). **^{1}H NMR** (500 MHz, Chloroform-*d*) δ 9.88 (s, 1H), 8.72 – 8.69 (m, 2H), 8.15 – 8.12 (m, 1H), 7.57 (s, 1H), 7.54 – 7.48 (m, 2H), 7.46 (s, 1H), 7.43 (dd, *J* = 8.3, 4.2 Hz, 1H), 6.56 (dt, *J* = 15.6, 1.5 Hz, 1H), 6.13 (dt, *J* = 15.4, 7.0 Hz, 1H), 3.88 (s, 2H), 2.15 (td, *J* = 7.3, 1.5 Hz, 2H), 1.37 – 1.32 (m, 2H), 1.25 – 1.14 (m, 6H), 0.82 (t, *J* = 7.0 Hz, 3H). **^{13}C NMR** (126 MHz, $CDCl_3$) δ 168.26, 148.46, 138.60, 138.42, 136.89, 136.46, 134.32, 132.54, 131.92, 131.82, 130.89, 128.51, 128.06, 127.52, 125.16, 121.99, 121.83, 116.61, 42.23, 33.44, 31.82, 29.24, 29.01, 22.72, 14.27. **DEPT 135**: δ 148.47, 136.89, 136.46, 132.55, 128.51, 127.52, 125.16, 121.99, 121.83, 116.61, 42.23, 33.44, 31.82, 29.24, 29.01, 22.72, 14.27. **HRMS (ESI)**: calcd. for $C_{25}H_{27}Cl_2N_2O$: 441.1495, found: 441.1498.

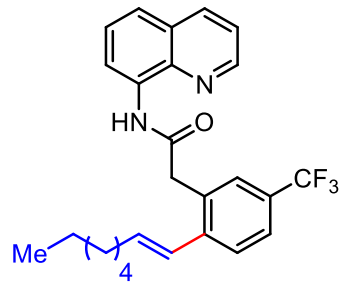


(*E*)-2-(2-methyl-6-(oct-1-enyl)phenyl)-N-(quinolin-8-yl)acetamide (Table 3, entry 5f): Olefination was done by general procedure A with 2-methyl phenyl acetamide (0.1 mmol, 33 mg) as the substrate. Pure linear olefinated product was isolated by column chromatography through a silica gel column (mesh 100-200) [major/minor ratio; 7:1]. Eluent: ethyl acetate/ petroleum ether (2:98 v/v); yellowish liquid; isolated yield: 58% (24 mg). Unreacted 1-octene

was recovered (5.5 mg). **^{1}H NMR** (500 MHz, Chloroform-*d*) δ 0.81 (t, *J* = 6.9 Hz, 3H), 1.11 – 1.25 (m, 8H), 1.34 (dq, *J* = 8.1, 6.9 Hz, 3H), 2.16 (qd, *J* = 7.2, 1.5 Hz, 2H), 2.39 (s, 0H), 2.42 (s, 3H), 3.99 (s, 2H), 6.08 (dt, *J* = 15.4, 7.0 Hz, 1H), 6.68 – 6.74 (m, 1H), 7.16 – 7.19 (m, 1H), 7.23 (t, *J* = 7.6 Hz, 1H), 7.34 – 7.39 (m, 2H), 7.45 – 7.52 (m, 2H), 8.09 (dt, *J* = 8.2, 2.1 Hz, 1H), 8.59 (td, *J* = 4.2, 1.7 Hz, 1H), 8.74 (dd, *J* = 7.5, 1.5 Hz, 1H), 9.83 (s, 1H). **^{13}C NMR** (126 MHz, $CDCl_3$) δ 14.26, 20.64, 22.74, 28.99, 29.47, 31.86, 33.48, 39.34, 116.49, 121.62, 121.66, 125.39, 127.47, 127.80, 127.88, 127.99, 129.59, 130.41, 134.66, 135.47, 136.22, 137.77, 138.75, 139.26, 148.28, 169.45. **DEPT 135** δ 14.26, 20.64, 22.73, 28.98, 29.47, 31.86, 33.48, 39.34, 116.49, 121.62, 121.66, 125.39, 127.47, 127.80, 127.88, 129.59, 135.47, 136.22, 148.28.

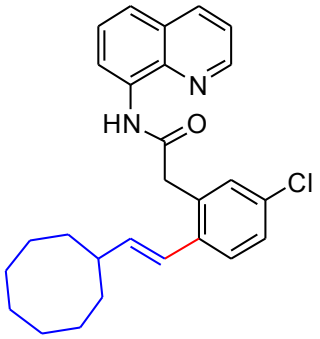


(*E*)-2-(5-chloro-2-(oct-1-enyl)phenyl)-N-(quinolin-8-yl)acetamide (Table 3, entry 5g): Olefination was done by general procedure A with 3-chloro phenyl acetamide (0.1 mmol, 30 mg) as the substrate. Pure linear olefinated product was isolated by column chromatography through a silica gel column (mesh 100-200) [major/minor ratio; 10:1]. Eluent: ethyl acetate/ petroleum ether (3:97 v/v); yellowish liquid; isolated yield: 80% (32 mg). **^{1}H NMR** (500 MHz, Chloroform-*d*) δ 9.89 (s, 1H), 8.77 – 8.61 (m, 2H), 8.12 (dt, *J* = 8.3, 2.1 Hz, 1H), 7.53 – 7.47 (m, 2H), 7.44 (d, *J* = 8.4 Hz, 1H), 7.40 (dd, *J* = 8.3, 4.2 Hz, 1H), 7.37 (d, *J* = 2.2 Hz, 1H), 7.28 (dd, *J* = 8.4, 2.3 Hz, 1H), 6.62 (dd, *J* = 15.6, 1.6 Hz, 1H), 6.11 (dt, *J* = 15.5, 7.0 Hz, 1H), 3.91 (s, 2H), 2.20 – 2.13 (m, 2H), 1.46 – 1.29 (m, 3H), 1.26 – 1.11 (m, 5H), 0.82 (t, *J* = 7.0 Hz, 3H). **^{13}C NMR** (126 MHz, $CDCl_3$) δ 168.72, 148.38, 138.66, 136.91, 136.37, 135.70, 134.45, 133.42, 132.97, 130.81, 128.23, 128.14, 128.03, 127.51, 126.02, 121.86, 121.75, 116.55, 42.91, 33.48, 32.15, 29.88, 29.59, 22.92, 14.34. **HRMS (ESI)**: calcd. for $C_{25}H_{28}ClN_2O$: 407.1887, found: 407.1885.

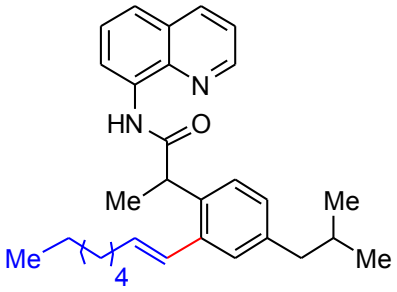


(*E*)-2-(2-(oct-1-enyl)-5-(trifluoromethyl)phenyl)-N-(quinolin-8-yl)acetamide (Table 3, entry 5h): Olefination was done by general procedure A with 3-trifluoro phenyl acetamide (0.1 mmol, 33 mg) as the substrate. Pure linear olefinated product was isolated by column chromatography through a silica gel column (mesh 100-200) [major/minor ratio; 15:1]. Eluent: ethyl acetate/ petroleum ether (3:97 v/v); yellowish liquid; isolated yield: 65% (29 mg). Unreacted 1-octene

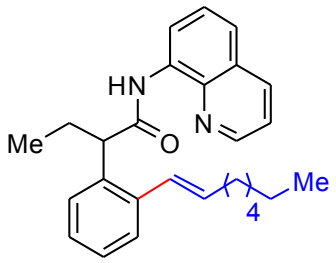
was recovered (3.5 mg). **^{1}H NMR** (500 MHz, Chloroform-*d*) δ 0.83 (t, *J* = 7.0 Hz, 3H), 1.17 – 1.28 (m, 6H), 1.33 – 1.40 (m, 2H), 2.20 (qd, *J* = 7.2, 1.5 Hz, 2H), 3.99 (s, 2H), 6.22 (dt, *J* = 15.6, 7.0 Hz, 1H), 6.66 – 6.76 (m, 1H), 7.39 (dd, *J* = 8.3, 4.2 Hz, 1H), 7.46 – 7.52 (m, 2H), 7.56 (dd, *J* = 8.2, 1.9 Hz, 1H), 7.61 (d, *J* = 8.2 Hz, 1H), 7.64 (d, *J* = 1.8 Hz, 1H), 8.11 (dt, *J* = 8.3, 3.0 Hz, 1H), 8.63 – 8.68 (m, 1H), 8.72 (dt, *J* = 7.2, 1.9 Hz, 1H), 9.90 (s, 1H). **^{13}C NMR** (126 MHz, $CDCl_3$) δ 14.25, 22.72, 29.00, 29.24, 31.82, 33.52, 43.02, 116.49, 121.78, 121.90, 123.28 (*J* = 275 Hz), 124.79 (*J* = 3.78 Hz) 125.47, 127.24, 127.46, 127.90 (*J* = 3.78 Hz) 128.23, 129.40 (*J* = 31.5 Hz) 132.42, 134.35, 136.37, 137.43, 138.59, 141.98, 148.34, 168.49. **DEPT 135** δ 14.25, 22.72, 29.01, 29.24, 31.82, 33.52, 43.03, 116.50, 121.78, 121.90, 124.79 (*J* = 3.78 Hz), 126.05, 127.24, 127.47, 127.90 (*J* = 3.78 Hz), 136.37, 137.44, 148.34. **HRMS (ESI)**: calcd. for $C_{26}H_{28}F_3N_2O$: 441.2148, found: 441.2150.



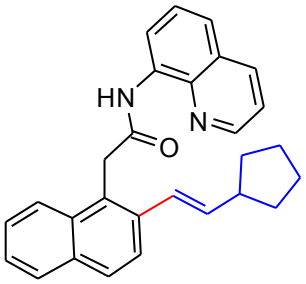
(*E*)-2-(5-chloro-2-(2-cyclooctylvinyl)phenyl)-N-(quinolin-8-yl)acetamide (Table 3, entry 5i): Olefination was done by general procedure A with 3-chloro phenyl acetamide (0.1 mmol, 30 mg) as the substrate. Pure linear olefinated product was isolated by column chromatography through a silica gel column (mesh 100-200) [major/minor ratio; 12:1]. Eluent: ethyl acetate/ petroleum ether (3:97 v/v); yellowish liquid; isolated yield: 55% (24 mg). Unreacted vinyl cyclooctane was recovered (8.5 mg). **^{1}H NMR** (500 MHz, Chloroform-*d*) δ 1.24 – 1.28 (m, 1H), 1.37 – 1.49 (m, 9H), 1.56 – 1.66 (m, 4H), 2.33 (dp, *J* = 10.2, 3.7, 3.1 Hz, 1H), 3.90 (s, 2H), 6.06 (dd, *J* = 15.6, 7.6 Hz, 1H), 6.55 (d, *J* = 15.6 Hz, 1H), 7.28 (d, *J* = 2.3 Hz, 1H), 7.36 (d, *J* = 2.2 Hz, 1H), 7.38 – 7.44 (m, 2H), 7.46 – 7.55 (m, 2H), 8.12 (dd, *J* = 8.3, 1.7 Hz, 1H), 8.68 (dd, *J* = 4.2, 1.6 Hz, 1H), 8.72 (dd, *J* = 7.3, 1.8 Hz, 1H), 9.88 (s, 1H). **^{13}C NMR** (126 MHz, $CDCl_3$) δ 25.06, 26.00, 27.51, 31.71, 41.62, 42.99, 116.54, 121.74, 121.85, 123.21, 127.49, 128.02, 128.10, 128.22, 130.79, 132.84, 133.54, 134.44, 136.37, 137.16, 138.65, 142.23, 148.38, 168.76.



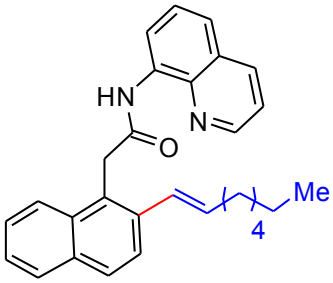
(*E*)-2-(4-isobutyl-2-(oct-1-enyl)phenyl)-N-(quinolin-8-yl)propanamide (Table 3, entry 5j): Olefination was done by general procedure A with 2-(4-isobutylphenyl)-N-(quinolin-8-yl)propanamide (0.1 mmol, 33 mg) as the substrate. Pure linear olefinated product was isolated by column chromatography through a silica gel column (mesh 100-200). Eluent: ethyl acetate/ petroleum ether (3:97 v/v); yellowish liquid; isolated yield: 65% (29 mg). Unreacted 1-octene was recovered (4 mg). **^{1}H NMR** (400 MHz, Chloroform-*d*) δ 9.78 (s, 1H), 8.76 (dd, *J* = 7.5, 1.5 Hz, 1H), 8.59 (dd, *J* = 4.2, 1.7 Hz, 1H), 8.08 (dd, *J* = 8.3, 1.7 Hz, 1H), 7.53 – 7.47 (m, 1H), 7.44 (dd, *J* = 8.3, 1.5 Hz, 1H), 7.36 (dd, *J* = 8.2, 4.3 Hz, 2H), 7.22 (d, *J* = 1.9 Hz, 1H), 7.08 (dd, *J* = 7.9, 1.9 Hz, 1H), 6.75 (dt, *J* = 15.5, 1.6 Hz, 1H), 6.06 (dt, *J* = 15.4, 6.9 Hz, 1H), 4.20 (q, *J* = 7.1 Hz, 1H), 2.47 (d, *J* = 7.2 Hz, 2H), 2.21 (qd, *J* = 7.1, 1.5 Hz, 2H), 1.88 (dq, *J* = 13.6, 6.8 Hz, 1H), 1.67 (d, *J* = 7.2 Hz, 3H), 1.46 – 1.20 (m, 8H), 0.93 (d, *J* = 6.6 Hz, 6H), 0.85 (t, 3H). **^{13}C NMR** (126 MHz, $CDCl_3$) δ 173.52, 148.15, 140.95, 138.75, 137.56, 136.27, 135.17, 135.03, 134.93, 128.69, 128.12, 128.04, 127.54, 127.44, 127.08, 121.60, 121.44, 116.37, 45.34, 44.46, 33.57, 31.93, 30.42, 29.53, 29.13, 22.80, 22.64, 18.17, 14.31. **DEPT 135**: δ 148.16, 136.27, 135.04, 128.69, 128.13, 127.54, 127.44, 127.08, 121.60, 121.45, 116.38, 45.34, 44.47, 33.57, 31.93, 30.42, 29.53, 29.13, 22.81, 22.65, 18.17, 14.31. **IR** (thin film): 3328, 2926, 2854, 1693, 1526, 1486, 1326, 1167, 963, 756 cm^{-1}. **HRMS (ESI)**: calcd. for $C_{30}H_{38}N_2NaO$: 465.2876, found: 465.2879.



(*E*)-2-(2-(oct-1-enyl)phenyl)-N-(quinolin-8-yl)butanamide (Table 3, entry 5k): Olefination was done by general procedure A with 2- phenyl butyric acetamide (0.1 mmol, 29 mg) as the substrate. Pure linear olefinated product was isolated by column chromatography through a silica gel column (mesh 100-200) [major/minor ratio; 8:1]. Eluent: ethyl acetate/ petroleum ether (3:97 v/v); yellowish liquid; isolated yield: 68% (27 mg). Unreacted 1-octene was recovered (4.5 mg). **^{1}H NMR** (500 MHz, Chloroform-*d*) δ 0.86 – 0.89 (m, 3H), 1.00 (t, *J* = 7.4 Hz, 3H), 1.27 – 1.38 (m, 6H), 1.48 (p, *J* = 7.2 Hz, 2H), 1.95 (dq, *J* = 14.7, 7.4 Hz, 1H), 2.29 (qd, *J* = 7.2, 1.5 Hz, 2H), 2.36 (dd, *J* = 14.0, 7.1 Hz, 1H), 4.02 (t, *J* = 7.5 Hz, 1H), 6.09 (dt, *J* = 15.5, 6.9 Hz, 1H), 6.86 (d, *J* = 15.4 Hz, 1H), 7.22 (td, *J* = 7.4, 1.5 Hz, 1H), 7.26 – 7.32 (m, 1H), 7.37 – 7.47 (m, 3H), 7.50 (ddd, *J* = 7.8, 4.8, 3.4 Hz, 2H), 8.11 (dd, *J* = 8.3, 1.8 Hz, 1H), 8.67 – 8.72 (m, 1H), 8.76 (dd, *J* = 7.6, 1.4 Hz, 1H), 9.85 (s, 1H). **^{13}C NMR** (126 MHz, $CDCl_3$) δ 12.69, 14.32, 22.85, 26.17, 29.16, 29.55, 29.92, 31.96, 33.59, 51.95, 76.98, 77.23, 77.48, 116.61, 121.51, 121.63, 126.71, 127.34, 127.36, 127.46, 127.51, 127.57, 127.59, 127.74, 128.07, 134.80, 135.46, 136.50, 136.78, 138.22, 148.11, 172.48. **IR** (thin film): 3351, 2928, 2851, 1692, 1525, 1486, 1385, 1322, 1163, 965, 751, 666, 485 cm^{-1}. **HRMS (ESI)**: calcd. for $C_{27}H_{33}N_2O$: 401.2587, found: 401.2584.

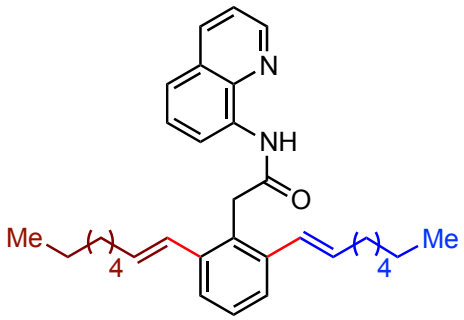


(*E*)-2-(2-(2-cyclopentylvinyl)naphthalen-1-yl)-N-(quinolin-8-yl)acetamide (Table 3, entry 5l): Olefination was done by general procedure A with 1-naphthyl acetamide (0.1 mmol, 31 mg) as the substrate. Pure linear olefinated product was isolated by column chromatography through a silica gel column (mesh 100-200) [major/minor ratio; 8:1]. Eluent: ethyl acetate/ petroleum ether (4:96 v/v); yellowish liquid; isolated yield: 50% (20 mg). **^{1}H NMR** (500 MHz, Chloroform-*d*) δ 0.87 (dt, *J* = 12.8, 6.5 Hz, 1H), 1.35 – 1.43 (m, 2H), 1.56 (d, *J* = 3.0 Hz, 1H), 1.66 (ddq, *J* = 8.8, 5.8, 2.7 Hz, 2H), 1.80 – 1.87 (m, 2H), 2.68 (p, *J* = 8.0 Hz, 1H), 4.44 (s, 2H), 6.30 (dd, *J* = 15.5, 7.9 Hz, 1H), 6.97 (d, *J* = 15.5 Hz, 1H), 7.29 (dd, *J* = 8.2, 4.1 Hz, 1H), 7.40 – 7.53 (m, 4H), 7.72 (d, *J* = 8.7 Hz, 1H), 7.80 – 7.86 (m, 2H), 8.03 (dd, *J* = 8.3, 1.7 Hz, 1H), 8.17 (d, *J* = 8.5 Hz, 1H), 8.45 (dd, *J* = 4.3, 1.7 Hz, 1H), 8.72 (dd, *J* = 7.6, 1.3 Hz, 1H), 9.89 (s, 1H). **^{13}C NMR** (126 MHz, $CDCl_3$) δ 25.43, 33.46, 38.50, 44.47, 116.43, 121.56, 121.62, 124.30, 125.33, 125.63, 125.84, 126.77, 127.15, 127.41, 127.91, 128.39, 128.75, 133.10, 133.29, 134.65, 136.02, 136.13, 138.63, 140.76, 148.11, 169.55. **IR** (thin film): 3313, 2952, 2866, 1681, 1526, 1486, 1327, 1261, 964, 825, 754, 666, 467 cm^{-1}. **HRMS (ESI)**: calcd. for $C_{28}H_{27}N_2O$: 407.2118, found: 407.2116.

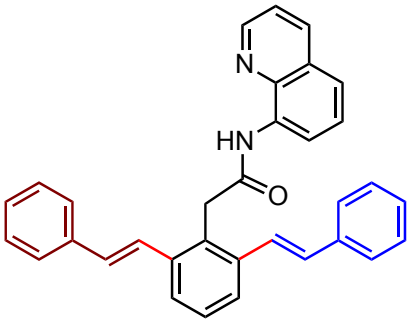


(*E*)-2-(2-(oct-1-enyl)naphthalen-1-yl)-N-(quinolin-8-yl)acetamide (Table 4, entry 5m): Olefination was done by general procedure A with 1-naphthyl acetamide (0.1 mmol, 31 mg) as the substrate. Pure linear olefinated product was isolated by column chromatography through a silica gel column (mesh 100-200). Eluent: ethyl acetate/ petroleum ether (3:97 v/v); yellowish liquid; isolated yield: 62% (26 mg). Unreacted 1-octene was recovered (5.5 mg). **^{1}H NMR** (400 MHz, Chloroform-*d*) δ 9.89 (s, 1H), 8.72 (dt, *J* = 7.5, 1.8 Hz, 1H), 8.45 (dd, *J* = 4.2, 1.7 Hz, 1H), 8.17 (dd, *J* = 8.5, 1.0 Hz, 1H), 8.03 (dd, *J* = 8.3, 1.8 Hz, 1H), 7.86 – 7.80 (m, 2H), 7.70 (d, *J* =

8.7 Hz, 1H), 7.54 – 7.48 (m, 1H), 7.47 – 7.44 (m, 1H), 7.41 (dd, *J* = 8.3, 1.5 Hz, 1H), 7.29 (dd, *J* = 8.3, 4.2 Hz, 1H), 6.98 (dd, *J* = 15.6, 1.6 Hz, 1H), 6.33 (dt, *J* = 15.5, 7.0 Hz, 1H), 4.44 (s, 2H), 2.28 (qd, *J* = 7.2, 1.5 Hz, 2H), 1.43 (q, *J* = 7.6 Hz, 2H), 1.32 (d, *J* = 4.4 Hz, 1H), 1.30 – 1.26 (m, 1H), 1.20 (dtd, *J* = 7.0, 3.4, 2.0 Hz, 3H), 0.93 – 0.86 (m, 1H), 0.86 – 0.77 (m, 3H). **^{13}C NMR** (126 MHz, $CDCl_3$) δ 169.52, 148.10, 138.62, 136.46, 136.12, 134.65, 133.31, 133.07, 128.75, 128.42, 127.92, 127.78, 127.45, 127.42, 127.16, 126.79, 125.66, 125.42, 124.31, 121.62, 121.55, 116.43, 38.52, 33.78, 31.90, 29.51, 29.07, 22.76, 14.28. **IR** (thin film): 3318, 2926, 2853, 1682, 1530, 1486, 1327, 1261, 962, 755, 666, 468 cm^{-1}. **HRMS (ESI)**: calcd. for $C_{29}H_{30}N_2NaO$: 445.2250, found: 445.2249.

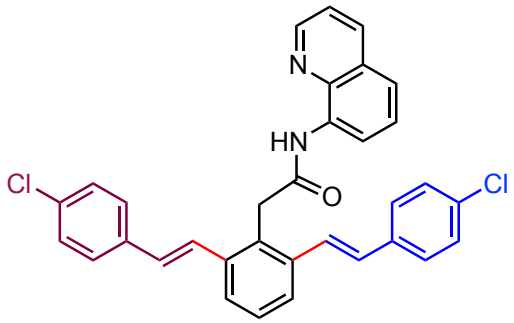


2-(2,6-di((*E*)-oct-1-enyl)phenyl)-N-(quinolin-8-yl)acetamide (Table 4, entry 6a): Olefination was done by general procedure A with (E)-2-(2-(oct-1-enyl)phenyl)-N-(quinolin-8-yl)acetamide (0.1 mmol, 37 mg) as the substrate. Pure linear olefinated product was isolated by column chromatography through a silica gel column (mesh 100-200) [major/minor ratio; 8:1]. Eluent: ethyl acetate/ petroleum ether (2:98 v/v); yellowish liquid; isolated yield: 65% (31 mg). **^{1}H NMR** (400 MHz, Chloroform-*d*) δ 0.79 – 0.83 (m, 6H), 1.17 (td, *J* = 7.9, 7.0, 4.3 Hz, 9H), 1.21 – 1.26 (m, 5H), 1.30 – 1.41 (m, 6H), 2.16 (qd, *J* = 7.1, 1.5 Hz, 4H), 4.03 (s, 2H), 6.07 (dt, *J* = 14.0, 6.0 Hz, 2H), 6.67 – 6.74 (m, 2H), 7.27 – 7.30 (m, 1H), 7.35 (dd, *J* = 8.3, 4.2 Hz, 1H), 7.39 (d, *J* = 7.7 Hz, 2H), 7.43 – 7.46 (m, 1H), 7.49 (d, *J* = 7.5 Hz, 1H), 8.08 (dd, *J* = 8.3, 1.7 Hz, 1H), 8.59 (dd, *J* = 4.2, 1.7 Hz, 1H), 8.74 – 8.76 (m, 1H), 9.83 (s, 1H). **^{13}C NMR** (101 MHz, $CDCl_3$) δ 14.27, 22.75, 29.00, 29.47, 31.87, 33.48, 39.30, 116.47, 121.59, 126.16, 127.46, 127.83, 127.93, 127.98, 128.80, 134.74, 135.52, 136.17, 138.74, 139.28, 148.19, 169.54. **HRMS (ESI)**: calcd. for $C_{33}H_{42}N_2NaO$: 505.3190, found: 505.3192.

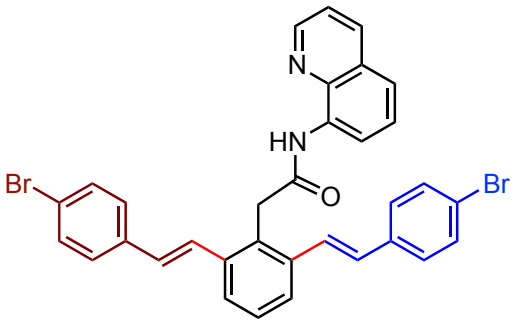


2-(2,6-distyrylphenyl)-N-(quinolin-8-yl)acetamide (Table 4, entry 6b): Sequential one-pot bisolefination was carried out by general procedure A with phenyl acetamide (0.1 mmol, 26.2 mg) as the substrate and 3 equivalents of styrene. Pure bisolefinated product was isolated by

column chromatography through a silica gel column (mesh 100-200). Eluent: ethyl acetate/ petroleum ether (2:98 v/v); white solid; isolated yield: 68% (32 mg). Unreacted styrene was recovered (5 mg). **^{1}H NMR** (400 MHz, Chloroform-*d*) δ 4.17 (s, 2H), 7.00 (d, *J* = 16.0 Hz, 2H), 7.17 – 7.24 (m, 3H), 7.27 – 7.32 (m, 4H), 7.35 (t, *J* = 7.8 Hz, 1H), 7.41 (dd, *J* = 8.3, 1.8 Hz, 1H), 7.44 (d, *J* = 7.3 Hz, 1H), 7.46 – 7.50 (m, 4H), 7.57 (d, *J* = 11.8 Hz, 2H), 7.60 (d, *J* = 3.6 Hz, 2H), 8.04 (dd, *J* = 8.3, 1.7 Hz, 1H), 8.43 (dd, *J* = 4.2, 1.7 Hz, 1H), 8.70 (dd, *J* = 7.3, 1.7 Hz, 1H), 9.96 (s, 1H). **^{13}C NMR** (101 MHz, $CDCl_3$) δ 39.46, 116.67, 121.66, 121.79, 126.58, 126.63, 126.99, 127.45, 128.04, 128.19, 128.86, 130.56, 132.87, 134.61, 136.26, 137.46, 138.72, 148.29, 169.11.

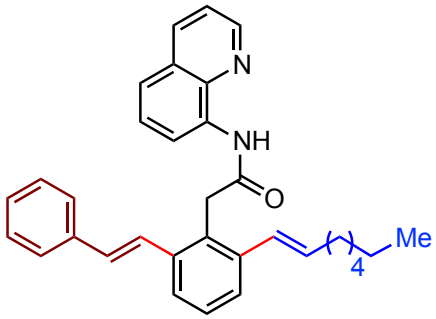


2-(2,6-bis(4-chlorostyryl)phenyl)-N-(quinolin-8-yl)acetamide (Table 4, entry 6c): Sequential one-pot bisolefination was carried out by general procedure A with phenyl acetamide (0.1 mmol, 26.2 mg) as the substrate and 3 equivalents of 4-chloro styrene. Pure bisolefinated product was isolated by column chromatography through a silica gel column (mesh 100-200). Eluent: ethyl acetate/ petroleum ether (2:98 v/v); white solid; isolated yield: 78% (42 mg). Unreacted 4-chloro styrene was recovered (7.5 mg). ^{1}H NMR (500 MHz, Chloroform-*d*) δ 4.18 (s, 2H), 6.97 (d, *J* = 16.0 Hz, 2H), 7.27 (d, *J* = 2.0 Hz, 3H), 7.35 – 7.41 (m, 2H), 7.41 – 7.45 (m, 4H), 7.45 – 7.52 (m, 3H), 7.55 – 7.64 (m, 4H), 8.10 (dd, *J* = 8.3, 1.7 Hz, 1H), 8.48 (dd, *J* = 4.3, 1.7 Hz, 1H), 8.72 (dd, *J* = 7.0, 2.0 Hz, 1H), 9.97 (s, 1H). ^{13}C NMR (126 MHz, $CDCl_3$) δ 39.44, 116.69, 121.75, 121.93, 126.74, 127.22, 127.49, 128.04, 128.16, 128.25, 129.02, 130.70, 131.63, 133.67, 134.49, 135.93, 136.40, 138.45, 148.29, 168.99. **IR** (thin film): 3326, 3027, 2926, 2852, 1682, 1526, 1328, 1216, 960, 756 cm^{-1}. **HRMS (ESI)**: calcd. for $C_{33}H_{24}Cl_2N_2O$: 535.1333, found: 535.1344.

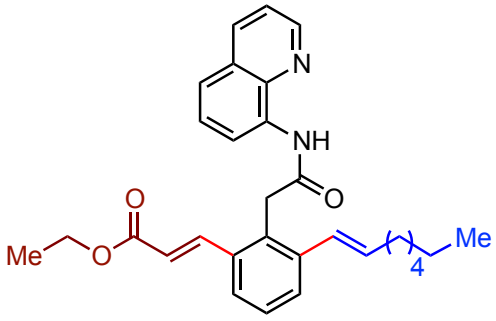


2-(2,6-bis((*E*)-4-bromostyryl)phenyl)-*N*-(quinolin-8-yl)acetamide (Table 4, entry 6d): Sequential one-pot bisolefination was carried out by general procedure A with phenyl acetamide (0.1 mmol, 26.2 mg) as the substrate and 3 equivalents of 4-bromo styrene. Pure bisolefinated

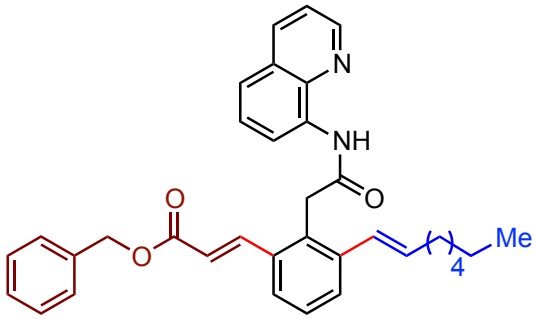
product was isolated by column chromatography through a silica gel column (mesh 100-200). Eluent: ethyl acetate/ petroleum ether (2:98 v/v); white solid; isolated yield: 75% (47 mg). Unreacted 4-bromo styrene was recovered (9 mg). ^{1}H NMR (400 MHz, Chloroform-*d*) δ 4.18 (s, 2H), 6.95 (d, *J* = 15.9 Hz, 2H), 7.35 – 7.39 (m, 5H), 7.39 – 7.46 (m, 5H), 7.46 – 7.51 (m, 2H), 7.56 – 7.65 (m, 4H), 8.10 (dd, *J* = 8.3, 1.7 Hz, 1H), 8.48 (dd, *J* = 4.2, 1.7 Hz, 1H), 8.72 (dd, *J* = 6.8, 2.3 Hz, 1H), 9.97 (s, 1H). ^{13}C NMR (126 MHz, $CDCl_3$) δ 29.92, 116.69, 121.76, 121.86, 121.93, 124.54, 126.77, 127.35, 128.04, 128.26, 128.47, 130.73, 131.69, 131.97, 134.50, 136.38, 136.40, 138.45, 148.29, 168.94. **IR** (thin film): 3303, 2921, 2851, 1650, 1527, 1488, 1317, 1261, 1070, 1026, 959, 802, 732, 632 cm^{-1}. **HRMS (ESI)**: calcd. for $C_{33}H_{24}Br_2N_2O$: 623.0349, found: 623.0334.



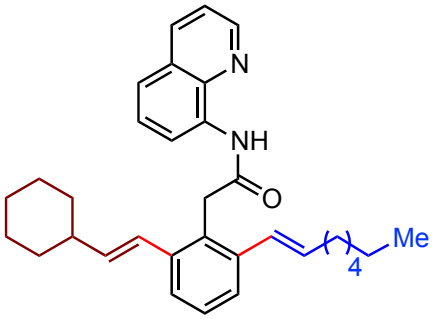
2-(2-(*E*)-oct-1-enyl)-6-styrylphenyl)-N-(quinolin-8-yl)acetamide (Table 4, entry 6e): Olefination was done by general procedure A with (E)-2-(2-(oct-1-enyl)phenyl)-N-(quinolin-8-yl)acetamide (0.1 mmol, 37 mg) as the substrate. Pure linear olefinated product was isolated by column chromatography through a silica gel column (mesh 100-200). Eluent: ethyl acetate/ petroleum ether (3:97 v/v); yellowish liquid; isolated yield: 85% (41 mg). Unreacted styrene was recovered (4 mg). **^{1}H NMR** (500 MHz, Chloroform-*d*) δ 0.83 (t, *J* = 6.9 Hz, 3H), 1.19 (h, *J* = 3.2, 2.2 Hz, 3H), 1.23 – 1.29 (m, 3H), 1.35 – 1.41 (m, 2H), 2.21 (qd, *J* = 7.2, 1.5 Hz, 2H), 4.13 (s, 2H), 6.12 (dt, *J* = 15.4, 7.0 Hz, 1H), 6.79 (dd, *J* = 15.6, 1.6 Hz, 1H), 7.01 (d, *J* = 15.9 Hz, 1H), 7.21 – 7.25 (m, 1H), 7.30 (dd, *J* = 8.3, 6.7 Hz, 2H), 7.35 (dd, *J* = 8.0, 3.9 Hz, 2H), 7.44 – 7.51 (m, 6H), 7.59 (dd, *J* = 7.8, 1.3 Hz, 1H), 8.09 (dd, *J* = 8.3, 1.7 Hz, 1H), 8.57 (dd, *J* = 4.3, 1.7 Hz, 1H), 8.75 (dd, *J* = 7.6, 1.5 Hz, 1H), 9.93 (s, 1H). **^{13}C NMR** (126 MHz, $CDCl_3$) δ 14.28, 22.75, 29.03, 29.46, 31.87, 33.51, 39.34, 116.68, 121.61, 121.71, 125.80, 126.69, 126.93, 126.95, 127.49, 127.77, 127.94, 128.00, 128.06, 128.76, 128.81, 129.69, 132.52, 134.62, 135.87, 136.34, 137.48, 138.39, 139.57, 148.16, 169.34. **IR** (thin film): 3325, 3022, 2926, 2854, 2344,1682, 1526, 1486, 1327, 1157, 961, 754 cm^{-1}. **HRMS (ESI)**: calcd. for $C_{33}H_{34}N_2NaO$: 497.2563, found: 497.2567.



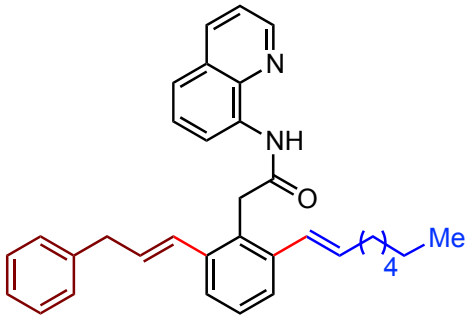
(*E*)-ethyl 3-(3-((*E*)-oct-1-enyl)-2-(2-oxo-2-(quinolin-8-ylamino)ethyl)phenyl)acrylate (Table 4, entry 6f): Olefination was done by general procedure A with (E)-2-(2-(oct-1-enyl)phenyl)-N-(quinolin-8-yl)acetamide (0.1 mmol, 37 mg) as the substrate. Pure linear olefinated product was isolated by column chromatography through a silica gel column (mesh 100-200). Eluent: ethyl acetate/ petroleum ether (5:95 v/v); yellowish liquid; isolated yield: 70% (33 mg). **^{1}H NMR** (500 MHz, Chloroform-*d*) δ 0.81 (t, *J* = 6.9 Hz, 3H), 1.10 – 1.25 (m, 4H), 1.26 (t, *J* = 7.1 Hz, 3H), 1.29 – 1.39 (m, 3H), 2.17 (qd, *J* = 7.1, 1.5 Hz, 2H), 4.11 (s, 2H), 4.21 (q, *J* = 7.2 Hz, 2H), 6.09 (dt, *J* = 15.6, 7.0 Hz, 1H), 6.39 (d, *J* = 15.7 Hz, 1H), 6.69 – 6.74 (m, 1H), 7.33 (t, *J* = 7.8 Hz, 1H), 7.38 (dd, *J* = 8.3, 4.2 Hz, 1H), 7.44 – 7.50 (m, 2H), 7.52 (ddd, *J* = 8.2, 4.8, 1.9 Hz, 2H), 8.08 – 8.14 (m, 2H), 8.63 (dd, *J* = 4.2, 1.7 Hz, 1H), 8.72 (dd, *J* = 7.3, 1.8 Hz, 1H), 9.84 (s, 1H). **^{13}C NMR** (126 MHz, $CDCl_3$) δ 14.25, 14.45, 22.72, 28.99, 29.36, 31.83, 33.47, 38.88, 60.74, 116.59, 121.66, 121.76, 122.05, 126.34, 127.26, 127.46, 127.98, 128.15, 128.99, 130.94, 134.52, 135.41, 136.30, 136.35, 138.61, 139.98, 142.56, 148.23, 166.77, 168.54. **IR** (thin film): 3325, 2927, 1713, 1634, 1526, 1486, 1327, 1178, 1028, 978, 756 cm^{-1}. **HRMS (ESI)**: calcd. for $C_{30}H_{34}N_2NaO_3$: 493.2462, found: 493.2460.



(E)-benzyl 3-(3-((*E*)-oct-1-enyl)-2-(2-oxo-2-(quinolin-8-ylamino)ethyl)phenyl)acrylate (Table 4, entry 6g): Olefination was done by general procedure A with (E)-2-(2-(oct-1-enyl)phenyl)-N-(quinolin-8-yl)acetamide (0.1 mmol, 37 mg) as the substrate. Pure linear olefinated product was isolated by column chromatography through a silica gel column (mesh 100-200). Eluent: ethyl acetate/ petroleum ether (3:97 v/v); yellowish dense liquid; isolated yield: 81% (43 mg). **^{1}H NMR** (500 MHz, Chloroform-*d*) δ 0.82 (t, *J* = 6.9 Hz, 3H), 1.19 (dtd, *J* = 11.6, 7.2, 6.3, 1.7 Hz, 4H), 1.22 – 1.27 (m, 2H), 1.33 – 1.41 (m, 2H), 2.19 (qd, *J* = 7.2, 1.5 Hz, 2H), 4.12 (s, 2H), 5.21 (s, 2H), 6.10 (dt, *J* = 15.5, 7.0 Hz, 1H), 6.42 – 6.49 (m, 1H), 6.74 (d, *J* = 15.2 Hz, 1H), 7.27 – 7.29 (m, 1H), 7.31 (td, *J* = 5.8, 5.0, 3.3 Hz, 2H), 7.35 – 7.38 (m, 3H), 7.45 – 7.50 (m, 2H), 7.51 – 7.55 (m, 2H), 8.07 – 8.12 (m, 1H), 8.21 (d, *J* = 15.7 Hz, 1H), 8.62 (dd, *J* = 4.2, 1.7 Hz, 1H), 8.70 – 8.76 (m, 1H), 9.84 (s, 1H). **^{13}C NMR** (126 MHz, $CDCl_3$) δ 14.24, 22.71, 28.98, 29.34, 31.81, 33.45, 38.86, 66.49, 116.59, 121.54, 121.64, 121.74, 126.31, 127.25, 127.44, 127.96, 128.13, 128.24, 128.31, 128.35, 128.63, 128.67, 129.11, 131.04, 134.50, 135.25, 136.14, 136.26, 136.36, 138.58, 139.99, 143.17, 148.22, 166.54, 168.44. **IR** (thin film): 3326, 2927, 1716, 1634, 1527, 1486, 1327, 1162, 756 cm^{-1}. **HRMS (ESI)**: calcd. for $C_{35}H_{36}N_2NaO_3$: 555.2618, found: 555.2619.

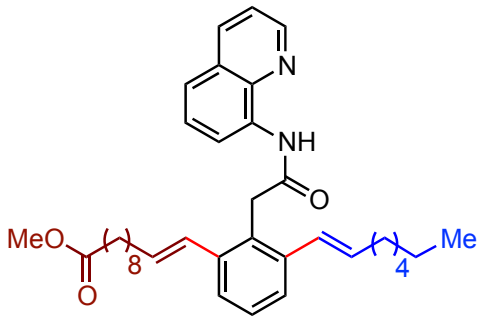


2-(2-((*E*)-2-cyclohexylvinyl)-6-((*E*)-oct-1-enyl)phenyl)-N-(quinolin-8-yl)acetamide (Table 4, entry 6h): Olefination was done by general procedure A with (E)-2-(2-(oct-1-enyl)phenyl)-N-(quinolin-8-yl)acetamide (0.1 mmol, 37 mg) as the substrate. Pure linear olefinated product was isolated by column chromatography through a silica gel column (mesh 100-200) [major/minor ratio; 10:1]. Eluent: ethyl acetate/ petroleum ether (2:98 v/v); yellowish semisolid; isolated yield: 52% (25 mg). **^{1}H NMR** (400 MHz, Chloroform-*d*) δ 0.81 (t, *J* = 6.9 Hz, 3H), 1.06 – 1.25 (m, 12H), 1.30 – 1.37 (m, 2H), 1.63 – 1.76 (m, 4H), 2.09 (tdd, *J* = 7.3, 3.4, 1.3 Hz, 1H), 2.12 – 2.22 (m, 2H), 3.92 – 4.06 (m, 2H), 5.93 – 6.16 (m, 2H), 6.58 – 6.78 (m, 2H), 7.27 (d, *J* = 8.3 Hz, 1H), 7.29 – 7.44 (m, 3H), 7.42 – 7.47 (m, 1H), 7.50 (t, *J* = 7.8 Hz, 1H), 8.08 (dt, *J* = 8.2, 1.6 Hz, 1H), 8.59 (ddd, *J* = 9.9, 4.2, 1.7 Hz, 1H), 8.74 (ddd, *J* = 6.7, 5.1, 1.6 Hz, 1H), 9.78 (d, *J* = 33.6 Hz, 1H). **^{13}C NMR** (126 MHz, $CDCl_3$) δ 14.27, 22.75, 26.13, 26.29, 29.00, 29.48, 31.87, 33.05, 33.49, 39.34, 41.52, 116.49, 121.60, 125.42, 126.10, 126.16, 127.47, 127.87, 127.91, 127.99, 128.95, 134.76, 135.23, 135.53, 136.19, 138.76, 139.27, 139.40, 141.08, 148.20, 169.58. **DEPT135** (126 MHz, $CDCl_3$) δ 14.27, 22.75, 26.13, 26.29, 29.01, 29.48, 31.88, 33.05, 33.49, 39.34, 41.52, 116.49, 121.60, 125.42, 126.11, 126.16, 127.48, 127.88, 127.91, 135.23, 135.53, 136.19, 141.08, 148.20.

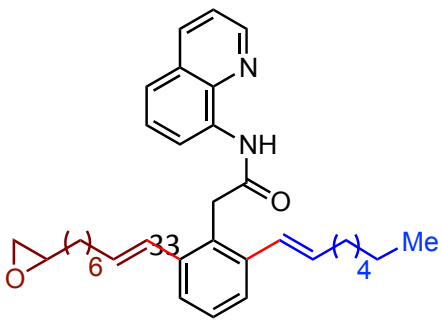


2-(2-((*E*)-oct-1-enyl)-6-((*E*)-3-phenylprop-1-enyl)phenyl)-N-(quinolin-8-yl)acetamide (Table 4, entry 6i): Olefination was done by general procedure A with (E)-2-(2-(oct-1-enyl)phenyl)-N-(quinolin-8-yl)acetamide (0.1 mmol, 37 mg) as the substrate. Pure linear olefinated product was isolated by column chromatography through a silica gel column (mesh 100-200) [major/minor ratio; 8:1]. Eluent: ethyl acetate/ petroleum ether (3:97 v/v); yellowish liquid; isolated yield: 55%

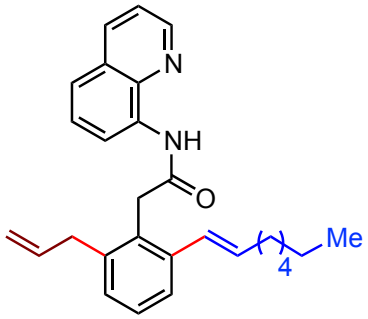
(27 mg). **^{1}H NMR** (500 MHz, Chloroform-*d*) δ 0.81 (t, *J* = 6.9 Hz, 3H), 1.15 – 1.27 (m, 6H), 1.32 – 1.40 (m, 2H), 2.18 (pd, *J* = 7.2, 6.7, 1.5 Hz, 2H), 3.52 (dd, *J* = 7.0, 1.5 Hz, 2H), 4.06 (s, 2H), 6.08 (dt, *J* = 15.5, 7.0 Hz, 1H), 6.21 (dt, *J* = 15.4, 7.1 Hz, 1H), 6.72 (d, *J* = 15.5 Hz, 1H), 6.84 (d, *J* = 15.4 Hz, 1H), 7.04 – 7.10 (m, 2H), 7.12 (d, *J* = 4.3 Hz, 3H), 7.25 (s, 1H), 7.27 (d, *J* = 4.6 Hz, 1H), 7.37 (dd, *J* = 8.2, 4.3 Hz, 1H), 7.38 – 7.44 (m, 2H), 7.50 (s, 1H), 7.53 (t, *J* = 7.9 Hz, 1H), 8.12 (d, *J* = 8.4 Hz, 1H), 8.58 (dd, *J* = 4.3, 1.7 Hz, 1H), 8.77 (dd, *J* = 7.6, 1.5 Hz, 1H), 9.89 (s, 1H). **^{13}C NMR** (126 MHz, $CDCl_3$) δ 14.28, 22.76, 29.02, 29.48, 31.88, 33.50, 39.25, 39.77, 117.19, 121.58, 121.74, 125.48, 125.81, 126.12, 126.19, 126.50, 127.67, 127.80, 127.96, 128.11, 128.45, 128.51, 128.72, 129.06, 129.31, 133.32, 135.63, 138.76, 139.35, 140.21, 147.99, 169.51. **IR** (thin film): 3323, 2927, 1682,1526, 1486, 1327, 1261, 1158, 963, 756 cm^{-1}. **HRMS (ESI)**: calcd. for $C_{34}H_{37}N_2O$: 489.2900, found: 489.2904.



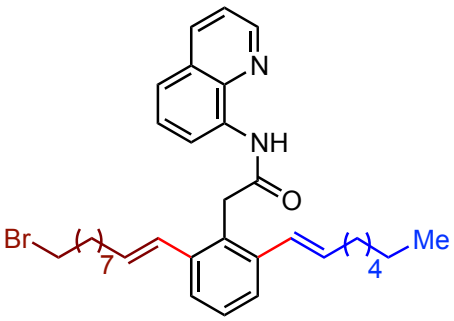
(*E*)-methyl 11-(3-((*E*)-oct-1-enyl)-2-(2-oxo-2-(quinolin-8-ylamino)ethyl)phenyl)undec-10-enoate (Table 4, entry 6j): Olefination was done by general procedure A with (E)-2-(2-(oct-1-enyl)phenyl)-N-(quinolin-8-yl)acetamide (0.1 mmol, 37 mg) as the substrate. Pure linear olefinated product was isolated by column chromatography through a silica gel column (mesh 100-200) [major/minor ratio; 8:1]. Eluent: ethyl acetate/ petroleum ether (3:97 v/v); yellowish liquid; isolated yield: 48% (27 mg). Unreacted methyl 10-undecenoate was recovered (9 mg). **^{1}H NMR** (400 MHz, Chloroform-*d*) δ 0.78 – 0.84 (m, 3H), 1.15 – 1.25 (m, 13H), 1.27 – 1.39 (m, 5H), 1.53 – 1.58 (m, 2H), 2.16 (qt, *J* = 7.2, 1.8 Hz, 4H), 2.27 (t, *J* = 7.6 Hz, 2H), 3.66 (s, 3H), 4.03 (s, 2H), 6.07 (dtd, *J* = 15.5, 7.0, 2.6 Hz, 2H), 6.71 (d, 2H), 7.28 (d, *J* = 7.7 Hz, 1H), 7.33 – 7.37 (m, 1H), 7.37 – 7.41 (m, 2H), 7.45 (dd, *J* = 8.3, 1.6 Hz, 1H), 7.50 (dd, *J* = 8.3, 7.4 Hz, 1H), 8.07 – 8.11 (m, 1H), 8.59 (dd, *J* = 4.2, 1.7 Hz, 1H), 8.73 – 8.77 (m, 1H), 9.83 (s, 1H). **^{13}C NMR** (126 MHz, $CDCl_3$) δ 14.27, 22.75, 25.12, 29.00, 29.23, 29.27, 29.31, 29.45, 29.47, 29.53, 31.87, 33.45, 33.48, 34.31, 39.31, 51.65, 116.47, 121.60, 126.17, 126.18, 127.48, 127.82, 127.89, 127.93, 127.99, 128.81, 134.75, 135.43, 135.53, 136.19, 138.75, 139.26, 139.29, 148.19, 169.53, 174.55. **IR** (thin film): 3324, 2927, 1738, 1682, 1527, 1486, 1327, 971, 757 cm^{-1}. **HRMS (ESI)**: calcd. for $C_{37}H_{48}N_2KO_3$: 607.3297, found: 607.3300.



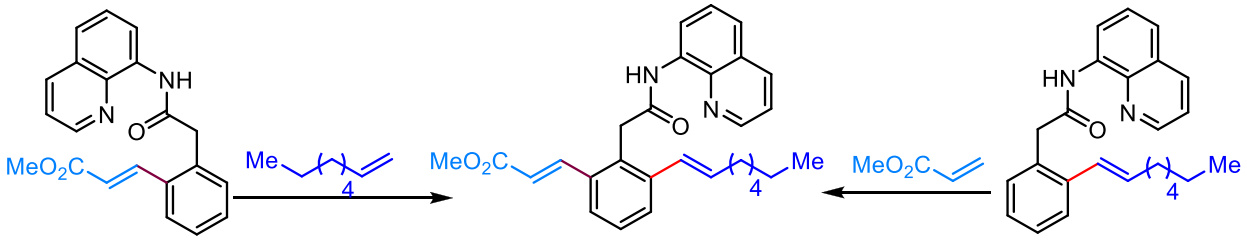
2-(2-((*E*)-oct-1-enyl)-6-((*E*)-8-(oxiran-2-yl)oct-1-enyl)phenyl)-N-(quinolin-8-yl)acetamide (Table 4, entry 6k): Olefination was done by general procedure A with (E)-2-(2-(oct-1-enyl)phenyl)-N-(quinolin-8-yl)acetamide (0.1 mmol, 37 mg) as the substrate. Pure linear olefinated product was isolated by column chromatography through a silica gel column (mesh 100-200) [major/minor ratio; 14:1]. Eluent: ethyl acetate/ petroleum ether (3:97 v/v); yellowish liquid; isolated yield: 50% (26 mg). **^{1}H NMR** (400 MHz, Chloroform-*d*) δ 0.78 – 0.83 (m, 3H), 1.17 – 1.36 (m, 16H), 1.41 – 1.48 (m, 2H), 2.16 (tdd, *J* = 7.5, 5.8, 1.9 Hz, 3H), 2.43 (dd, *J* = 5.1, 2.7 Hz, 1H), 2.72 (dd, *J* = 5.1, 4.0 Hz, 1H), 2.85 (tdd, *J* = 5.6, 4.0, 2.7 Hz, 1H), 4.03 (s, 2H), 6.07 (dtd, *J* = 15.5, 7.0, 3.8 Hz, 2H), 6.63 (s, 0H), 6.71 (dq, *J* = 15.8, 1.8 Hz, 2H), 7.27 – 7.31 (m, 1H), 7.34 – 7.41 (m, 3H), 7.45 (dd, *J* = 8.3, 1.6 Hz, 1H), 7.48 – 7.53 (m, 1H), 8.09 (dt, *J* = 8.3, 2.1 Hz, 1H), 8.59 (dd, *J* = 4.2, 1.7 Hz, 1H), 8.73 – 8.77 (m, 1H), 9.80 (d, *J* = 23.2 Hz, 1H).**^{13}C NMR** (126 MHz, $CDCl_3$) δ 14.27, 22.75, 26.03, 29.00, 29.18, 29.36, 29.43, 29.47, 31.87, 32.64, 33.40, 33.48, 39.31, 47.33, 52.57, 116.38, 116.47, 121.61, 126.17, 126.22, 127.48, 127.81, 127.95, 127.98, 127.99, 128.81, 134.75, 135.31, 135.57, 136.20, 138.75, 139.23, 139.30, 148.21, 169.53. **HRMS (ESI)**: calcd. for $C_{35}H_{45}N_2O_2$: 525.3476, found: 525.3473.



(*E*)-2-(2-allyl-6-(oct-1-enyl)phenyl)-N-(quinolin-8-yl)acetamide (Table 4, entry 6l): Olefination was done by general procedure A with (E)-2-(2-(oct-1-enyl)phenyl)-N-(quinolin-8-yl)acetamide (0.1 mmol, 37 mg) as the substrate. Pure olefinated product was isolated by column chromatography through a silica gel column (mesh 100-200). Eluent: ethyl acetate/ petroleum ether (3:97 v/v); yellowish liquid; isolated yield: 47% (20 mg**). ^{1}H NMR** (500 MHz, Chloroform-*d*) δ 0.79 (t, *J* = 6.9 Hz, 3H), 1.09 – 1.26 (m, 6H), 1.33 (p, *J* = 7.3 Hz, 2H), 2.15 (qd, *J* = 7.2, 1.4 Hz, 2H), 3.52 (dt, *J* = 6.1, 1.7 Hz, 2H), 4.11 (s, 2H), 4.95 – 5.10 (m, 2H), 5.89 – 6.14 (m, 2H), 6.71 (d, *J* = 15.5 Hz, 1H), 7.16 (dd, *J* = 7.7, 1.4 Hz, 1H), 7.25 (s, 1H), 7.38 (dd, *J* = 7.7, 1.3 Hz, 1H), 7.59 (dd, *J* = 18.6, 9.0 Hz, 3H), 8.34 (s, 1H), 8.68 – 8.91 (m, 2H), 10.26 (s, 1H). **^{13}C NMR** (101 MHz, cdcl$_3$) δ 169.59, 148.05, 139.35, 138.73, 138.57, 136.53, 135.53, 135.32, 135.15, 134.73, 128.90, 128.09, 127.92, 127.63, 126.35, 126.23, 121.64, 121.33, 117.29, 116.92, 39.33, 34.17, 33.47, 33.03, 31.88, 29.43, 22.75, 14.25. **IR** (thin film): 3335, 2926, 2853, 1682, 1526, 1486, 1327, 1159, 964, 756 cm^{-1}. **HRMS (ESI)**: calcd. for $C_{28}H_{33}N_2O$: 413.2587, found: 413.2586.

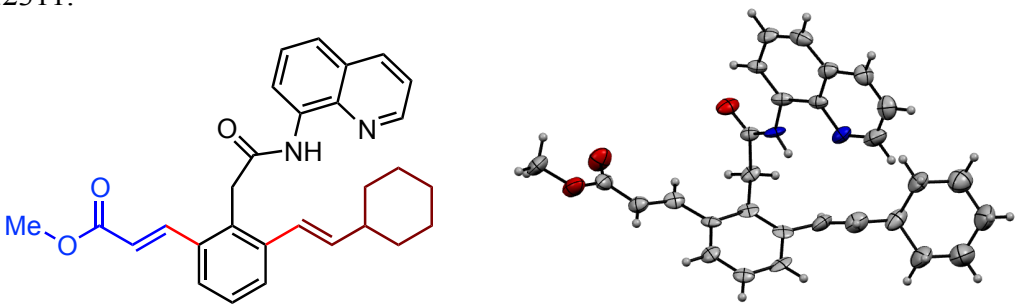


2-(2-((*E*)-10-bromodec-1-enyl)-6-((*E*)-oct-1-enyl)phenyl)-N-(quinolin-8-yl)acetamide (Table 4, entry 6m): Olefination was done by general procedure A with (E)-2-(2-(oct-1-enyl)phenyl)-N-(quinolin-8-yl)acetamide (0.1 mmol, 37 mg) as the substrate. Pure linear olefinated product was isolated by column chromatography through a silica gel column (mesh 100-200) [major/minor ratio; 10:1]. Eluent: ethyl acetate/ petroleum ether (2:98 v/v); yellowish liquid; isolated yield: 48% (28 mg). **^{1}H NMR** (500 MHz, Chloroform-*d*) δ 0.80 (q, *J* = 6.4 Hz, 3H), 1.15 – 1.37 (m, 19H), 1.78 (p, *J* = 7.0 Hz, 2H), 2.16 (qd, *J* = 7.2, 1.4 Hz, 3H), 3.36 (t, *J* = 6.9 Hz, 2H), 4.04 (s, 2H), 6.06 (dtd, *J* = 15.4, 7.0, 3.8 Hz, 2H), 6.61 – 6.75 (m, 2H), 7.28 (d, *J* = 7.8 Hz, 2H), 7.38 (d, *J* = 7.8 Hz, 2H), 7.46 – 7.54 (m, 2H), 8.13 (d, *J* = 8.2 Hz, 1H), 8.57 – 8.64 (m, 1H), 8.72 – 8.78 (m, 1H), 9.89 (s, 1H). **^{13}C NMR** (126 MHz, $CDCl_3$) δ 14.26, 22.75, 28.35, 28.83, 29.01, 29.16, 29.43, 29.50, 29.92, 31.88, 33.02, 33.41, 33.48, 34.21, 39.25, 117.23, 121.55, 121.71, 126.14, 126.18, 127.80, 127.90, 128.02, 128.05, 128.18, 128.88, 128.92, 130.92, 134.55, 135.28, 135.47, 139.26, 139.32, 147.78, 169.68.

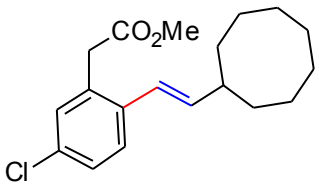


(*E*)-methyl 3-(3-((*E*)-oct-1-enyl)-2-(2-oxo-2-(quinolin-8-ylamino)ethyl)phenyl)acrylate (Table 4, entry 6n): Case 1: Olefination was done by general procedure A with (E)-2-(2-(oct-1-enyl)phenyl)-N-(quinolin-8-yl)acetamide (0.1 mmol, 37 mg) as the substrate. Pure linear olefinated product was isolated by column chromatography through a silica gel column (mesh 100-200). Eluent: ethyl acetate/ petroleum ether (3:97 v/v); yellowish liquid; isolated yield: 72% (33 mg). **Case 2:** Olefination was done by general procedure A with (E)-methyl 3-(2-(2-oxo-2-(quinolin-8-ylamino)ethyl)phenyl)acrylate (0.1 mmol, 35 mg) as the substrate. Pure linear olefinated product was isolated by column chromatography through a silica gel column (mesh 100-200). Eluent: ethyl acetate/ petroleum ether (5:95 v/v); yellowish liquid; isolated yield: 81% (37 mg) [major/minor ratio; 10:1]. **^{1}H NMR** (400 MHz, Chloroform-*d*) δ 0.81 (t, *J* = 6.9 Hz,

3H), 1.16 – 1.26 (m, 6H), 1.32 – 1.37 (m, 2H), 2.18 (qd, *J* = 7.2, 1.5 Hz, 2H), 3.75 (s, 3H), 4.11 (s, 2H), 6.09 (dt, *J* = 15.5, 7.0 Hz, 1H), 6.39 (dd, *J* = 15.7, 1.9 Hz, 1H), 6.72 (dd, *J* = 15.5, 1.6 Hz, 1H), 7.32 – 7.40 (m, 2H), 7.46 – 7.50 (m, 2H), 7.51 – 7.54 (m, 2H), 8.09 – 8.15 (m, 2H), 8.64 (dd, *J* = 4.2, 1.7 Hz, 1H), 8.72 (dd, *J* = 7.0, 2.1 Hz, 1H), 9.84 (s, 1H). **^{13}C NMR** (101 MHz, $CDCl_3$) δ 14.27, 22.74, 29.02, 29.38, 31.85, 33.49, 38.90, 51.94, 116.64, 121.59, 121.69, 121.81, 126.32, 126.35, 127.26, 127.50, 128.01, 128.19, 129.11, 130.99, 134.53, 135.37, 136.33, 136.44, 140.03, 142.87, 148.26, 167.21, 168.53. **DEPT 135** (101 MHz, $CDCl_3$) δ 14.27, 22.74, 29.02, 29.39, 31.85, 33.49, 38.90, 51.95, 116.64, 121.60, 121.70, 121.81, 126.35, 127.27, 127.50, 128.20, 129.12, 136.34, 136.45, 142.87, 148.26. **IR** (thin film): 3336, 2927, 2854, 1721, 1634, 1526, 1486, 1327, 1168, 978, 756 cm^{-1}. **HRMS (ESI)**: calcd. for $C_{29}H_{32}N_2NaO_3$: 479.2308, found: 479.2311.

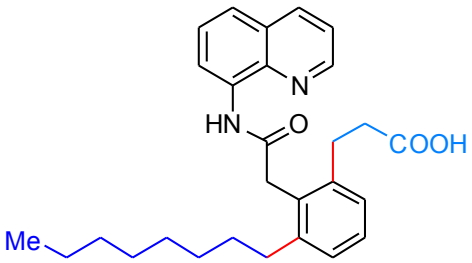


(*E*)-methyl 3-(3-((*E*)-2-cyclohexylvinyl)-2-(2-oxo-2-(quinolin-8-ylamino)ethyl)phenyl)acrylate (Table 4, entry 6n): Olefination was done by general procedure A with (E)-methyl 3-(2-(2-oxo-2-(quinolin-8-ylamino)ethyl)phenyl)acrylate (0.1 mmol, 35 mg) as the substrate. Pure single linear olefinated product was isolated by column chromatography through a silica gel column (mesh 100-200). Eluent: ethyl acetate/ petroleum ether (5:95 v/v); yellowish liquid; isolated yield: 72% (32 mg). X-ray structure of the compound confirmed bisolefination.



(*E*)-methyl 2-(5-chloro-2-(2-cyclooctylvinyl)phenyl)acetate (Scheme 4): Hydrolysis was done by heating (E)-2-(5-chloro-2-(2-cyclooctylvinyl)phenyl)-N-(quinolin-8-yl)acetamide (0.05 mmol, 24 mg) in methanol (5 mL) using p-toluene sulphonic acid as catalyst in 105 ^{o}C. Pure product was isolated by column chromatography through a silica gel column (mesh 100-200). Eluent: ethyl acetate/ petroleum ether (2:98 v/v); yellowish semi-solid; isolated yield: 91% (15 mg). **^{1}H NMR** (400 MHz, Chloroform-*d*) δ 1.40 – 1.59 (m, 10H), 1.68 – 1.84 (m, 4H), 2.39 (dt, *J* = 8.1, 4.2 Hz, 1H), 3.64 (s, 2H), 3.69 (s, 3H), 6.07 (d, *J* = 7.6 Hz, 1H), 6.42 (dd, *J* = 15.7, 1.2 Hz, 1H), 7.18 (s, 1H), 7.20 (d, *J* = 2.3 Hz, 1H), 7.33 – 7.37 (m, 1H). **^{13}C NMR** (101 MHz, $CDCl_3$) δ

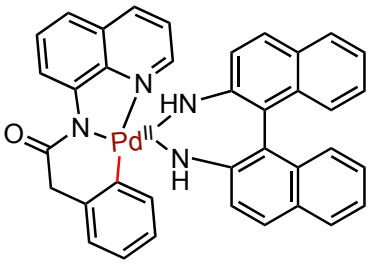
25.20, 27.62, 31.89, 39.00, 41.72, 52.37, 123.26, 127.79, 127.83, 130.52, 132.46, 132.95, 136.73, 141.68, 171.58.



3-(3-octyl-2-(2-oxo-2-(quinolin-8-ylamino)ethyl)phenyl)propanoic acid (Scheme 5): Reduction was done by charging (E)- benzyl 3- (3-((E)-oct-1-enyl)-2-(2-oxo-2-(quinolin-8-ylamino)ethyl)phenyl) acrylate (0.25 mmol, 135 mg) in methanol (5 mL) with activated palladium/charcoal in room temperature under 1 atm hydrogen atmosphere. Pure product was isolated by column chromatography through a silica gel column (mesh 100-200). Eluent: ethyl acetate/ petroleum ether (20:80 v/v); yellowish solid; isolated yield: 50% (28 mg). **^{1}H NMR** (400 MHz, Chloroform-*d*) δ 0.81 (t, *J* = 7.0 Hz, 3H), 0.96 – 1.44 (m, 12H), 1.57 (ddd, *J* = 12.5, 10.3, 6.4 Hz, 2H), 2.69 (t, *J* = 4.4 Hz, 2H), 3.06 (t, *J* = 7.9 Hz, 2H), 4.03 (s, 2H), 7.13 – 7.22 (m, 2H), 7.26 (t, *J* = 7.5 Hz, 1H), 7.35 (dd, *J* = 8.3, 4.2 Hz, 1H), 7.44 – 7.54 (m, 2H), 8.08 (dd, *J* = 8.3, 1.8 Hz, 1H), 8.56 – 8.62 (m, 1H), 8.70 (dd, *J* = 7.1, 1.9 Hz, 1H), 9.80 (s, 1H). **^{13}C NMR** (101 MHz, $CDCl_3$) δ 14.26, 22.78, 28.55, 29.35, 29.65, 29.85, 31.15, 31.97, 34.03, 35.29, 38.23, 116.98, 121.67, 122.03, 127.40, 127.45, 128.02, 128.06, 128.48, 130.77, 134.22, 136.37, 138.69, 140.02, 142.87, 148.35, 170.06, 177.79. **HRMS (ESI)**: calcd. for $C_{28}H_{34}N_2NaO_3$: 469.2462, found: 469.2460.

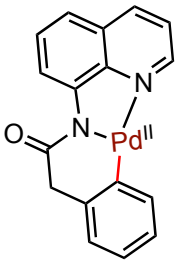
Stoichiometric Study: To get an insight into the mechanism, a stoichiometric reaction was carried out in clean, oven-dried screw cap reaction tube. The tube (with magnetic stir-bar) was charged with phenyl acetamide (0.2 mmol, 52.4 mg), palladium (II) acetate (0.2 mmol, 44.8 mg) and *rac*-BINAM (1,1´-binaphthyl-2,2´-diamine) (0.2 mmol, 56.4 mg). Then sodium hydrogen carbonate (0.4 mmol, 33.6 mg) and benzoquinone (0.2 mmol, 21.6 mg) was introduced in this reaction mixture. The cap was fitted with a rubber septum and the reaction tube was evacuated and back filled with oxygen and this sequence was repeated three additional times. Oxygenated dichloroethane (DCE) (4 mL) was added to this mixture by syringe under the positive pressure of oxygen. The reaction mixture was vigorously stirred (600 rpm on Heidolph MR Hei-Standard stirrer) for 24 h in O_2 atmosphere in a preheated oil bath of 100 ºC. The reaction mixture was cooled to room temperature and insoluble components were filtered off. The resulting solution was concentrated in rotary evaporator. Subsequently the metal complex was washed carefully with ethyl ether and recrystallized from CH_3CN. ESI-MS of the metal

complex was recorded in CH_3CN. Two characteristic peaks at 648.9034 and 365.8877 were obtained due to the intermediate palladium complex(es) as depicted below:



ESI-MS

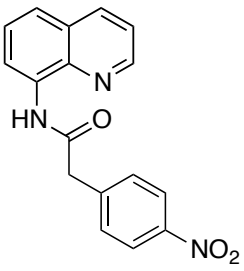
648.9034



365.8877

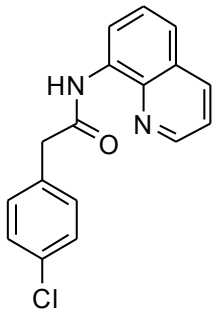
We are presently working towards further characterization of the resultant metal complex. The ESI-MS indicated formation of intermediate **C** along with the features of **C** without BINAM (as depicted above). This resultant metal complex gave the desired product in 20% yield with 1-octene along with five other inseparable mixtures of compounds.

Substituted phenyl acetamides :

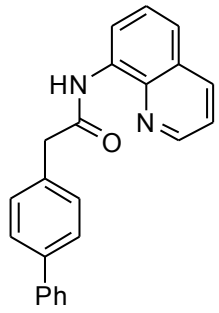


2-(4-nitrophenyl)-N-(quinolin-8-yl)acetamide (s.m. 5a): Acetamide was prepared by general procedure B with 4-nitro phenyl acetic acid as the substrate. Pure product was isolated by

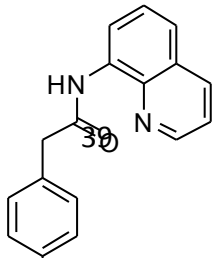
column chromatography through a silica gel column (mesh 100-200). Eluent: ethyl acetate/ petroleum ether (10:90 v/v); yellowish solid. **^{1}H NMR** (500 MHz, Chloroform-*d*) δ 4.00 (s, 2H), 7.46 (dd, *J* = 8.3, 4.2 Hz, 1H), 7.52 (d, *J* = 4.5 Hz, 2H), 7.59 – 7.64 (m, 2H), 8.16 (dd, *J* = 8.3, 1.7 Hz, 1H), 8.23 – 8.27 (m, 2H), 8.72 (p, *J* = 4.4 Hz, 1H), 8.75 (dd, *J* = 4.3, 1.7 Hz, 1H), 9.96 (s, 1H). **^{13}C NMR** (126 MHz, $CDCl_3$) δ 44.87, 116.76, 121.95, 122.25, 124.17, 127.52, 128.09, 130.64, 134.17, 136.64, 138.48, 142.31, 147.44, 148.52, 167.78. **GCMS** : m/z 307.1**.**



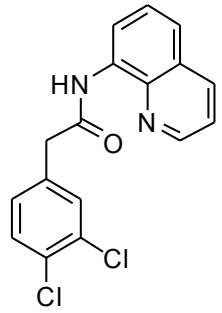
2-(4-chlorophenyl)-N-(quinolin-8-yl)acetamide (s.m. 5b): Acetamide was prepared by general procedure B with 4-chloro phenyl acetic acid as the substrate. Pure product was isolated by column chromatography through a silica gel column (mesh 100-200). Eluent: ethyl acetate/ petroleum ether (5:95 v/v); amorphous white solid. **^{1}H NMR** (400 MHz, Chloroform-*d*) δ 3.86 (s, 2H), 7.37 (s, 4H), 7.43 (dd, *J* = 8.3, 4.3 Hz, 1H), 7.46 – 7.54 (m, 2H), 8.13 (dd, *J* = 8.3, 1.6 Hz, 1H), 8.69 – 8.77 (m, 2H), 9.90 (s, 1H). **^{13}C NMR** (101 MHz, $CDCl_3$) δ 44.70, 116.61, 121.82, 121.96, 127.53, 128.06, 129.24, 131.07, 133.35, 133.48, 134.41, 136.51, 138.57, 148.44, 169.09. **GCMS** : m/z 296.1.



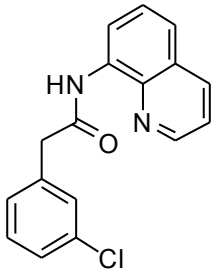
2-(biphenyl-4-yl)-N-(quinolin-8-yl)acetamide (s.m. 5c): Acetamide was prepared by general procedure B with 4-biphenyl acetic acid as the substrate. Pure product was isolated by column chromatography through a silica gel column (mesh 100-200). Eluent: ethyl acetate/ petroleum ether (5:95 v/v); amorphous light yellowish solid. **^{1}H NMR** (400 MHz, Chloroform-*d*) δ 3.94 (s, 2H), 7.33 – 7.39 (m, 1H), 7.41 (dd, *J* = 8.3, 4.2 Hz, 1H), 7.43 – 7.48 (m, 2H), 7.49 – 7.55 (m, 4H), 7.60 – 7.66 (m, 4H), 8.13 (dd, *J* = 8.3, 1.7 Hz, 1H), 8.70 (dd, *J* = 4.2, 1.7 Hz, 1H), 8.78 (dd, *J* = 7.3, 1.7 Hz, 1H), 9.97 (s, 1H). **^{13}C NMR** (101 MHz, $CDCl_3$) δ 45.16, 116.58, 121.76, 121.84, 127.30, 127.51, 127.55, 127.90, 128.06, 128.99, 130.16, 133.92, 134.57, 136.46, 138.63, 140.49, 141.04, 148.39, 169.65. **GCMS** : m/z 338.1



2-(4-fluorophenyl)-N-(quinolin-8-yl)acetamide (s.m. 5d): Acetamide was prepared by general procedure B with 4-fluoro phenyl acetic acid as the substrate. Pure product was isolated by column chromatography through a silica gel column (mesh 100-200). Eluent: ethyl acetate/ petroleum ether (5:95 v/v); dark yellowish liquid. **^{1}H NMR** (400 MHz, Chloroform-*d*) δ 3.84 (s, 2H), 7.02 – 7.13 (m, 2H), 7.37 (ddd, *J* = 8.3, 6.8, 4.7 Hz, 3H), 7.41 – 7.50 (m, 2H), 8.07 (dd, *J* = 8.3, 1.7 Hz, 1H), 8.68 (dd, *J* = 4.3, 1.7 Hz, 1H), 8.75 (dd, *J* = 7.3, 1.8 Hz, 1H), 9.90 (s, 1H).). **^{13}C NMR** (101 MHz, $CDCl_3$) δ 44.34, 115.70, 115.92, 116.43, 121.65, 121.81, 127.32, 127.90, 130.52, 131.15, 131.23, 134.30, 136.33, 138.40, 148.27, 161.00, 163.44, 169.34. **GCMS** : m/z 280.2.

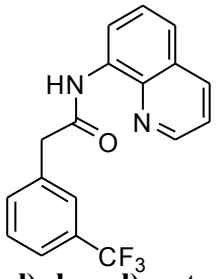


2-(3,4-dichlorophenyl)-N-(quinolin-8-yl)acetamide (s.m. 5e): Acetamide was prepared by general procedure B with 3,4-dichloro phenyl acetic acid as the substrate. Pure product was isolated by column chromatography through a silica gel column (mesh 100-200). Eluent: ethyl acetate/ petroleum ether (5:95 v/v); light yellowish solid. **^{1}H NMR** (400 MHz, Chloroform-*d*) δ 3.85 (s, 2H), 7.28 (dd, *J* = 8.2, 2.1 Hz, 1H), 7.43 – 7.48 (m, 2H), 7.51 (s, 1H), 7.53 (d, *J* = 2.5 Hz, 1H), 7.55 (d, *J* = 2.0 Hz, 1H), 8.16 (dd, *J* = 8.3, 1.7 Hz, 1H), 8.62 – 8.81 (m, 2H), 9.94 (s, 1H). **^{13}C NMR** (126 MHz, $CDCl_3$) δ 44.27, 116.72, 121.91, 122.13, 127.55, 128.10, 129.13, 130.95, 131.67, 133.03, 134.28, 135.01, 135.19, 136.60, 138.57, 148.53, 168.35. **GCMS** : m/z 332.1.

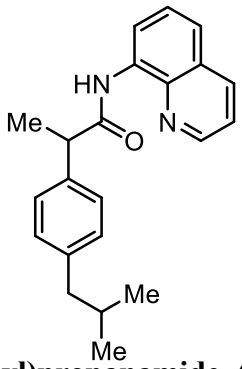


2-(3-chlorophenyl)-N-(quinolin-8-yl)acetamide (s.m. 5f, 5g): Acetamide was prepared by general procedure B with 3,4-dichloro phenyl acetic acid as the substrate. Pure product was isolated by column chromatography through a silica gel column (mesh 100-200). Eluent: ethyl

acetate/ petroleum ether (5:95 v/v); light yellowish solid. **^{1}H NMR** (400 MHz, Chloroform-*d*) δ 3.86 (s, 2H), 7.29 – 7.35 (m, 3H), 7.39 – 7.47 (m, 2H), 7.47 – 7.55 (m, 2H), 8.13 (dd, *J* = 8.3, 1.7 Hz, 1H), 8.71 – 8.77 (m, 2H), 9.93 (s, 1H). **^{13}C NMR** (101 MHz, $CDCl_3$) δ 44.94, 116.62, 121.82, 121.98, 127.50, 127.72, 127.90, 128.05, 129.84, 130.31, 134.37, 134.86, 136.49, 136.78, 138.58, 148.45, 168.78. **GCMS** : m/z 297.8.

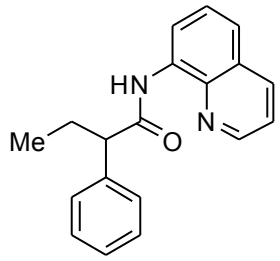


N-(quinolin-8-yl)-2-(3-(trifluoromethyl)phenyl)acetamide (s.m. 5h): Acetamide was prepared by general procedure B with 3 –trifluoromethyl phenyl acetic acid as the substrate. Pure product was isolated by column chromatography through a silica gel column (mesh 100-200). Eluent: ethyl acetate/ petroleum ether (5:90 v/v); yellowish solid. **^{1}H NMR** (400 MHz, Chloroform-*d*) δ 3.95 (s, 2H), 7.42 (dd, *J* = 8.3, 4.3 Hz, 1H), 7.47 – 7.55 (m, 3H), 7.57 – 7.66 (m, 2H), 7.71 – 7.75 (m, 1H), 8.13 (dd, *J* = 8.3, 1.7 Hz, 1H), 8.70 – 8.75 (m, 2H), 9.95 (s, 1H). **^{13}C NMR** (101 MHz, $CDCl_3$) δ 44.96, 116.63, 121.85, 122.05, 122.90, 124.34, 124.38, 124.42, 124.45, 125.61, 126.46, 126.49, 126.53, 126.57, 127.48, 128.05, 129.53, 131.21, 131.53, 133.18, 134.30, 135.79, 136.50, 138.56, 148.42, 168.56. **GCMS** : m/z 330.1.

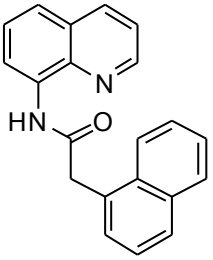


2-(4-isobutylphenyl)-N-(quinolin-8-yl)propanamide (s.m. 5j): Acetamide was prepared by general procedure B with 2-(4-isobutylphenyl)propanoic acid (Ibuprophen) as the substrate. Pure product was isolated by column chromatography through a silica gel column (mesh 100-200). Eluent: ethyl acetate/ petroleum ether (5:95 v/v); colorless liquid**. ^{1}H NMR** (400 MHz, Chloroform-*d*) δ 0.91 (dd, *J* = 6.7, 1.2 Hz, 6H), 1.69 (dd, *J* = 7.3, 1.3 Hz, 3H), 1.88 (dh, *J* = 13.5, 6.8 Hz, 1H), 2.48 (d, *J* = 7.2 Hz, 2H), 3.91 (q, *J* = 7.1 Hz, 1H), 7.14 – 7.22 (m, 2H), 7.38 (td, *J* = 8.3, 2.9 Hz, 3H), 7.44 (dd, *J* = 8.3, 1.5 Hz, 1H), 7.50 (t, *J* = 7.9 Hz, 1H), 8.08 (dd, *J* = 8.3, 1.7 Hz, 1H), 8.66 (dd, *J* = 4.3, 1.7 Hz, 1H), 8.79 (dd, *J* = 7.5, 1.5 Hz, 1H), 9.88 (s, 1H). **^{13}C NMR**

(101 MHz, $CDCl_3$) δ 18.74, 22.56, 30.41, 45.24, 48.46, 116.39, 121.55, 121.63, 127.50, 127.66, 128.02, 129.86, 134.76, 136.34, 138.41, 138.66, 140.96, 148.23, 173.26. **GCMS** : m/z 333.1.

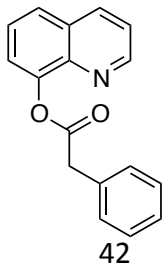


2-phenyl-N-(quinolin-8-yl)butanamide (s.m. 5k): Acetamide was prepared by general procedure B with 2-phenylbutanoic acid as the substrate. Pure product was isolated by column chromatography through a silica gel column (mesh 100-200). Eluent: ethyl acetate/ petroleum ether (5:90 v/v); white solid**. ^{1}H NMR** (400 MHz, Chloroform-*d*) δ 1.00 (t, *J* = 7.4 Hz, 3H), 1.98 (dq, *J* = 13.3, 7.3 Hz, 1H), 2.28 – 2.41 (m, 1H), 3.63 (t, *J* = 7.6 Hz, 1H), 7.26 – 7.31 (m, 1H), 7.33 – 7.42 (m, 3H), 7.44 – 7.53 (m, 4H), 8.11 (dt, *J* = 8.3, 1.5 Hz, 1H), 8.74 (dd, *J* = 4.2, 1.7 Hz, 1H), 8.78 (dd, *J* = 7.4, 1.6 Hz, 1H), 9.92 (s, 1H). **^{13}C NMR** (101 MHz, $CDCl_3$) δ 12.62, 26.80, 56.93, 116.55, 121.63, 121.71, 127.45, 127.53, 128.06, 128.24, 129.00, 134.70, 136.46, 138.60, 139.98, 148.31, 172.36. **GCMS** : m/z 290.1.

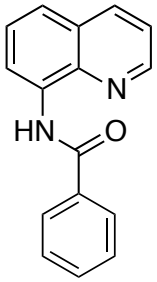


2-(naphthalen-1-yl)-N-(quinolin-8-yl)acetamide (s.m. 5l , 5m): Acetamide was prepared by general procedure B with 1-naphthyl acetic acid as the substrate. Pure product was isolated by column chromatography through a silica gel column (mesh 100-200). Eluent: ethyl acetate/ petroleum ether (5:90 v/v); yellowish solid. **^{1}H NMR** (400 MHz, Chloroform-*d*) δ 4.35 (s, 2H), 7.31 (dd, *J* = 8.3, 4.2 Hz, 1H), 7.39 – 7.59 (m, 5H), 7.62 (dd, *J* = 7.0, 1.3 Hz, 1H), 7.85 – 7.92 (m, 2H), 8.03 (dd, *J* = 8.3, 1.7 Hz, 1H), 8.13 – 8.18 (m, 1H), 8.51 (dd, *J* = 4.2, 1.7 Hz, 1H), 8.74 (dd, *J* = 7.6, 1.5 Hz, 1H), 9.93 (s, 1H). **^{13}C NMR** (101 MHz, $CDCl_3$) δ 43.44, 116.38, 121.60, 121.70, 124.14, 125.88, 126.20, 126.88, 127.41, 127.92, 128.53, 128.61, 128.93, 131.24, 132.47, 134.24, 134.47, 136.23, 138.53, 148.22, 169.61. **GCMS** : m/z 312.8.

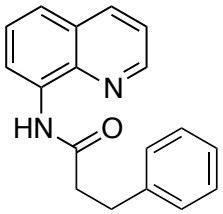
Scaffold Characterization:



quinolin-8-yl 2-phenylacetate (Table S8, Scaffold 1): The compound was synthesized using general procedure B with 8-hydroxy quinoline and phenyl acetyl chloride. ^{1}H NMR (400 MHz, Chloroform-*d*) δ 4.12 (s, 2H), 7.30 – 7.37 (m, 2H), 7.41 (qd, *J* = 7.5, 2.8 Hz, 4H), 7.50 (dd, *J* = 6.3, 1.7 Hz, 2H), 7.70 (dd, *J* = 8.3, 1.2 Hz, 1H), 8.17 (dt, *J* = 8.4, 1.5 Hz, 1H), 9.00 (dd, *J* = 4.3, 1.6 Hz, 1H). ^{13}C NMR (101 MHz, $CDCl_3$) δ 41.15, 121.84, 121.92, 126.03, 126.40, 127.35, 128.74, 129.67, 129.74, 133.89, 136.56, 140.92, 147.24, 150.52, 170.59.



***N*-(quinolin-8-yl)benzamide (Table S8, Scaffold 2):** The compound was synthesized using general procedure B with 8-aminoquinoline and benzoyl chloride. ^{1}H NMR (500 MHz, Chloroform-*d*) δ 7.47 (ddd, *J* = 8.2, 4.2, 1.8 Hz, 1H), 7.52 – 7.63 (m, 5H), 8.07 – 8.12 (m, 2H), 8.18 (dt, *J* = 8.3, 1.9 Hz, 1H), 8.85 (dd, *J* = 4.2, 1.6 Hz, 1H), 8.95 (dd, *J* = 7.6, 1.4 Hz, 1H), 10.75 (s, 1H). ^{13}C NMR (126 MHz, $CDCl_3$) δ 116.72, 121.88, 121.89, 127.48, 127.64, 128.17, 128.99, 132.04, 134.74, 135.31, 136.58, 138.94, 148.47, 165.67.



3-phenyl-*N*-(quinolin-8-yl)propanamide (Table S8, Scaffold 3): The compound was synthesized using general procedure B with 8-aminoquinoline and benzoyl chloride. ^{1}H NMR (400 MHz, Chloroform-*d*) δ 2.90 (dd, *J* = 8.8, 6.9 Hz, 2H), 3.16 (dd, *J* = 8.9, 6.9 Hz, 2H), 7.21 (ddt, *J* = 7.5, 4.6, 3.8 Hz, 1H), 7.31 (d, *J* = 4.4 Hz, 4H), 7.44 (dd, *J* = 8.3, 4.3 Hz, 1H), 7.47 – 7.57 (m, 2H), 8.15 (dd, *J* = 8.3, 1.7 Hz, 1H), 8.77 (dd, *J* = 4.2, 1.7 Hz, 1H), 8.80 (dd, *J* = 7.4, 1.6 Hz, 1H), 9.81 (s, 1H). ^{13}C NMR (101 MHz, $CDCl_3$) δ 31.65, 39.89, 116.70, 121.64, 121.75, 126.41, 127.60, 128.09, 128.58, 128.73, 134.59, 136.57, 138.42, 140.95, 148.23, 170.92.