$[Cp^*RhCl_2]_2$-Catalyzed Alkyne Hydroamination to 1,2-Dihydroquinolines

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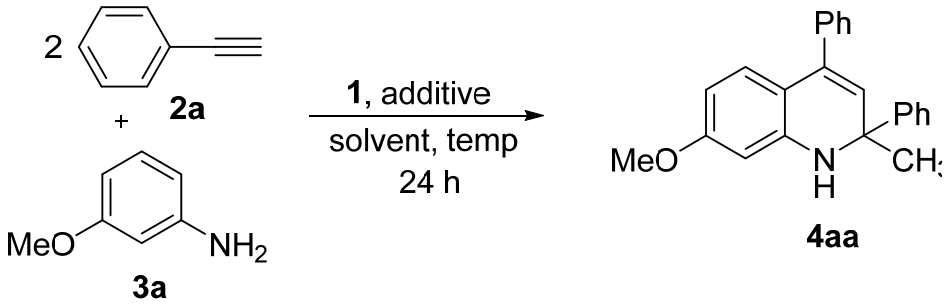
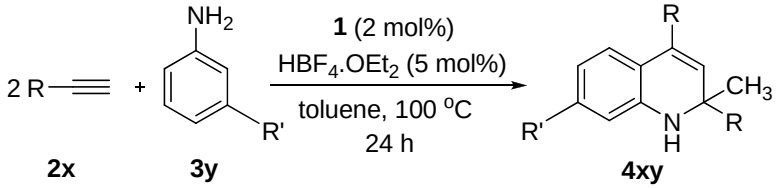
Table S1. Optimisation study for the reaction **2a** + **3a** → **4aa**.



Entry	**1** (mol %)	Additive (mol %)	solvent	T (°C)	Isolated yield (%)
1	(2)	NH_4PF_6 (5)	Toluene	40	-
2	(2)	NH_4PF_6 (5)	Toluene	100	55
3	(3)	NH_4PF_6 (6)	Toluene	150	55
4	(5)	NH_4PF_6 (10)	Toluene	100	65
5	(2)	NH_4PF_6 (12)	Toluene	100	58
6	(2)	HBF_4 (5)	Toluene	100	86
7	(2)	TFA (5)	Toluene	100	70
8	(1)	HBF_4 (2)	Toluene	100	75
9	(2)	-	Toluene	100	-
10	-	HBF_4 (5)	Toluene	100	-
11	(2)	NBu_4PF_6 (5)	Toluene	100	-
12	(2)	HBF_4 (5)	DCE	80	78
13	(2)	HBF_4 (5)	THF	40	-
14	(2)	HBF_4 (5)	IPA	80	-
15	(2)	HBF_4 (5)	MeOH	60	-

Conditions: **3a** (1.0 mmol), **2a** (2.1 mmol), **1/** additive in a solvent (3 mL), heated for 24 h.

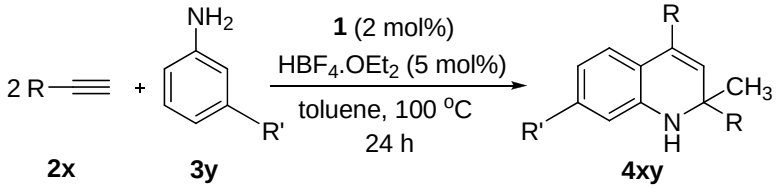
Table S2. Compound identification table for alkynes and anilines.



2x **3y** **4xy**

x	**R**		**x**	**R**		**y**	**R'**
a	Ph		**m**	Cl-*3*-C_6H_4		**a**	OMe
b	CH_3-*3*-C_6H_4		**n**	Cl-*4*-C_6H_4		**b**	OEt
c	CH_3-*4*-C_6H_4		**o**	F-*3*-C_6H_4		**c**	O^nPr
d	$CH_3(CH_2)_3$-*4*-C_6H_4		**p**	F-*4*-C_6H_4		**d**	O^iPr
e	^{t}Bu-*4*-C_6H_4		**q**	-$(CH_2)_2CH_3$		**e**	$O(CH_2)_3CH_3$
f	$CH_3(CH_2)_4$-*4*-C_6H_4		**r**	-$(CH_2)_3CH_3$		**f**	$O(CH_2)_5CH_3$
g	$HOCH_2$-*4*-C_6H_4		**s**	-$(CH_2)_4CH_3$		**g**	OCH_2Ph
h	HO-*3*-C_6H_4		**t**	-$(CH_2)_5CH_3$		**h**	OCH_2-(*p*-tolyl)
i	CH_3O-*3*-C_6H_4		**u**	-$(CH_2)_7CH_3$		**i**	3,5-$(OCH_3)_2$
j	CH_3O-*4*-C_6H_4		**v**	-$(CH_2)_9CH_3$		**j**	Me
k	PhO-*4*-C_6H_4		**w**	-$(CH_2)_2Ph$		**k**	H
l	Br-*4*-C_6H_4						

Table S3. Substrate scope study for the formation of 1,2-dihydroquinoline from the reaction of alkyne with aniline.

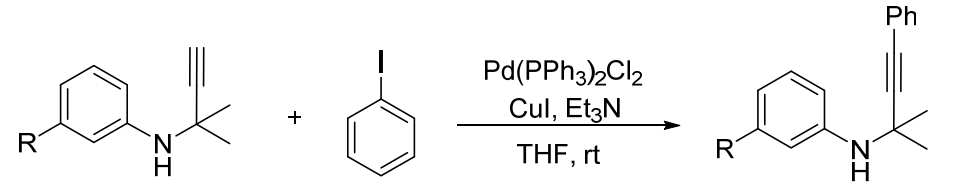


Entry	Alkyne (2x) R=	Aniline (3y) R'=	Product, yield (%)
1	Ph (**2a**)	OMe (**3a**)	**4aa**, 86
2	CH_3-*3*-C_6H_4 (**2b**)	OMe (**3a**)	**4ba**, 89
3	CH_3-*4*-C_6H_4 (**2c**)	OMe (**3a**)	**4ca**, 83
4	$CH_3(CH_2)_3$-*4*-C_6H_4 (**2d**)	OMe (**3a**)	**4da**, 79
5	^{t}Bu-*4*-C_6H_4 (**2e**)	OMe (**3a**)	**4ea**, 78
6	$CH_3(CH_2)_5$-*4*-C_6H_4 (**2f**)	OMe (**3a**)	**4fa**, 87
7	$HOCH_2$-*4*-C_6H_4 (**2g**)	OMe (**3a**)	**4ga**, 73
8	HO-*3*-C_6H_4 (**2h**)	OMe (**3a**)	**4ha**, 71
9	CH_3O-*3*-C_6H_4 (**2i**)	OMe (**3a**)	**4ia**, 91
10	CH_3O-*4*-C_6H_4 (**2j**)	OMe (**3a**)	**4ja**, 89
11	PhO-*4*-C_6H_4 (**2k**)	OMe (**3a**)	**4ka**, 83
12	Br-*4*-C_6H_4 (**2l**)	OMe (**3a**)	**4la**, 71
13	Cl-*3*-C_6H_4 (**2m**)	OMe (**3a**)	**4ma**, 70
14	Cl-*4*-C_6H_4 (**2n**)	OMe (**3a**)	**4na**, 75
15	F-*3*-C_6H_4 (**2o**)	OMe (**3a**)	**4oa**, 71
16	F-*4*-C_6H_4 (**2p**)	OMe (**3a**)	**4pa**, 85
17	-$(CH_2)_2CH_3$ (**2q**)	OMe (**3a**)	**4qa**, 73
18	-$(CH_2)_3CH_3$ (**2r**)	OMe (**3a**)	**4ra**, 74
19	-$(CH_2)_4CH_3$ (**2s**)	OMe (**3a**)	**4sa**, 78
20	-$(CH_2)_5CH_3$ (**2t**)	OMe (**3a**)	**4ta**, 72
21	-$(CH_2)_7CH_3$ (**2u**)	OMe (**3a**)	**4ua**, 71
22	-$(CH_2)_9CH_3$ (**2v**)	OMe (**3a**)	**4va**, 75
23	-$(CH_2)_2$Ph (**2w**)	OMe (**3a**)	**4wa**, 79
24	Ph (**2a**)	OEt (**3b**)	**4ab**, 83
25	Ph (**2a**)	OPr (**3c**)	**4ac**, 82
26	Ph (**2a**)	O^{i}Pr (**3d**)	**4ad**, 79
27	Ph (**2a**)	$O(CH_2)_3CH_3$ (**3e**)	**4ae**, 81
28	Ph (**2a**)	$O(CH_2)_5CH_3$ (**3f**)	**4af**, 76
29	Ph (**2a**)	OCH_2Ph (**3g**)	**4ag**, 80
30	Ph (**2a**)	OCH_2-(*p*-tolyl) (**3h**)	**4ah**, 84
31	Ph (**2a**)	3,5-$(OCH_3)_2$ (**3i**)	**4ai**, 72
32	-$(CH_2)_3CH_3$ (**2r**)	Me (**3j**)	**4rj**, 48
33	-$(CH_2)_3CH_3$ (**2r**)	H (**3k**)	**4rk**, 34
34	Ph (**2a**)	H (**3k**)	**4ak**, 29

Table S4. Amounts of reagents used and product formed. In all experiments, amount of other reagents used are: *3*-nitrophenol (500 mg, 3.59 mmol) and alkyl halide (3.95 mmol).

	Alkyl halide	**Yield (%)**	**HRMS $[M+H]^+$**
1	Iodoethane (316 µL, 3.95 mmol)	3-C_2H_5O-$C_6H_4NH_2$, **3b**, (256 mg, 52%)	Found: 138.0916 Calc: 138.0919
2	1-bromopropane (386 µL, 3.95 mmol)	3-C_3H_7O-$C_6H_4NH_2$, **3c**, (300 mg, 55%)	Found: 152.1072 Calc: 152.1075
3	2-bromopropane (394 µL, 3.95 mmol)	3-$(CH_3)_2CHO$-$C_6H_4NH_2$, **3d**, (287 mg, 53%)	Found: 152.1072 Calc: 152.1075
4	1-iodobutane (450 µL, 3.95 mmol)	3-C_4H_9O-$C_6H_4NH_2$, **3e**, (350 mg, 59%)	Found: 166.1231 Calc: 166.1232
5	1-bromohexane (583 µL, 3.95 mmol)	3-$C_6H_{13}O$-$C_6H_4NH_2$, **3f**, (402 mg, 58%)	Found: 194.1545 Calc: 194.1545
6	Benzylbromide (470 µL, 3.95 mmol)	3-$PhCH_2O$-$C_6H_4NH_2$, **3g**, (385 mg, 54%)	Found: 200.1076 Calc: 200.1075
7	4-methylbenzylbromide (732 mg, 3.95 mmol)	3-(4-tolyl)-CH_2O-$C_6H_4NH_2$, **3h**, (390 mg, 51%)	Found: 214.1231 Calc: 214.1232

Synthesis of 8b and 8c



R= OMe (**9b**), H (**9c**) R= OMe (**8b**), H (**8c**)

The compounds **9b** and **9c** were synthesized according to the literature method.[1] In a typical reaction, to a solution of **9b** (500 mg, 2.64 mmol) in dry THF (10 mL) was added $PdCl_2(PPh_3)_2$ (37 mg, 0.053 mmol), CuI (20 mg, 0.11 mmol), trimethylamine (0.74 mL, 5.3 mmol) and iodobenzene (0.35 mL, 3.2 mmol). After stirring at RT for 3h, it was diluted with diethylether (20 mL) and then filtered through celite. Solvent evaporation under reduced pressure afforded the crude product which was purified by silica gel (60-120 mesh) column chromatography using ethylacetate/ hexane (1:9, v/v) as eluent to give pure **8b** (568 mg, 81%). HRMS: Found (calc); 266.1549 (266.1545). A similar procedure was used for **9c** (420 mg, 2.64 mmol) to afford **8c** (509 mg, 82%). HRMS: Found (calc); 236.1442 (236.1439).

Table S5. Amount of reagent used, product formed, and HRMS data for products. All experiments carried out using **3a** (123 mg, 1 mmol), alkyne (2.1 mmol) and **1** (12 mg, 0.02 mmol).

	Alkyne	**Product (mg, %)**	**HRMS: $[M+H]^+$ Found (calc)**		**Alkyne**	**Product (mg, %)**	**HRMS: $[M+H]^+$ Found (calc)**
1	C_6H_5CCH (230 µl, 2.1 mmol)	$C_{23}H_{21}NO$, **4aa** (281 mg, 86%)	328.1710 (328.1701)	13	3-Cl-C_6H_4CCH (257 µl, 2.1 mmol)	$C_{23}H_{19}Cl_2NO$, **4ma** (276 mg, 70%)	396.0926 (396.0922)
2	3-CH_3-C_6H_4CCH (270 µl, 2.1 mmol)	$C_{25}H_{25}NO$, **4ba** (316 mg, 89%)	356.2024 (356.2014)	14	4-Cl-C_6H_4CCH (285 mg, 2.1mmol)	$C_{23}H_{19}Cl_2NO$, **4na** (296 mg, 75%)	396.0916 (396.0922)
3	4-CH_3-C_6H_4CCH (266 µl, 2.1 mmol)	$C_{25}H_{25}NO$, **4ca** (294 mg, 83%)	356.2016 (356.2014)	15	3-F-C_6H_4CCH (242 µl, 2.1 mmol)	$C_{23}H_{19}F_2NO$, **4oa** (257 mg, 71%)	364.1514 (364.1513)
4	4-C_4H_9-C_6H_4CCH (332 mg, 2.1 mmol)	$C_{31}H_{37}NO$, **4da** (347 mg, 79%)	440.2957 (440.2953)	16	4-F-C_6H_4CCH (240 µl, 2.1 mmol)	$C_{23}H_{19}F_2NO$, **4pa** (308 mg, 85%)	364.1518 (364.1513
5	4-^{t}Bu-C_6H_4CCH (378 µl, 2.1 mmol)	$C_{31}H_{37}NO$, **4ea** (342 mg, 78%)	440.2951 (440.2953)	17	$CH_3(CH_2)_2CCH$ (207 µl, 2.1 mmol)	$C_{17}H_{25}NO$, **4qa** (189 mg, 73%)	260.2019 (260.2014)
6	4-C_5H_{11}-C_6H_4CCH (361 mg, 2.1 mmol)	$C_{33}H_{41}NO$, **4fa** (406 mg, 87%)	468.3274 (468.3266)	18	$CH_3(CH_2)_3CCH$ (241 µl, 2.1 mmol)	$C_{19}H_{29}NO$, **4ra** (212 mg, 74%)	288.2328 (288.2327)
7	4-$HOCH_2$-C_6H_4CCH (277 mg, 2.1 mmol)	$C_{25}H_{25}NO_3$, **4ga** (282 mg, 73%)	388.1931 (388.1913)	19	$CH_3(CH_2)_4CCH$ (275 µl, 2.1 mmol)	$C_{21}H_{33}NO$, **4sa** (245 mg, 78%)	316.2662 (316.2640)
8	3-HO-C_6H_4CCH (288 µl, 2.1 mmol)	$C_{23}H_{21}NO_3$, **4ha** (255 mg, 71%)	360.1602 (360.1600)	20	$CH_3(CH_2)_5CCH$ (294 µl, 2.1 mmol)	$C_{23}H_{37}NO$, **4ta** (247 mg, 72%)	344.2948 (344.2953)
9	3-CH_3O-C_6H_4CCH (266 µl, 2.1 mmol)	$C_{25}H_{25}NO_3$, **4ia** (352 mg, 91%)	388.1912 (388.1913)	21	$CH_3(CH_2)_7CCH$ (379 µl, 2.1 mmol)	$C_{27}H_{45}NO$, **4ua** (283 mg, 71%)	400.3579 (400.3579)
10	4-$CH_3OC_6H_4CCH$ (272 µl, 2.1 mmol)	$C_{25}H_{25}NO_3$, **4ja** (344 mg, 89%)	388.1906 (388.1913)	22	$CH_3(CH_2)_9CCH$ (448 µl, 2.1 mmol)	$C_{31}H_{53}NO$, **4va** (341mg, 75%)	456.4205 (456.4205)
11	4-PhO-C_6H_4CCH (379 µl, 2.1 mmol)	$C_{35}H_{29}NO_3$, **4ka** (424 mg, 83%)	512.2231 (512.2226)	23	$PhCH_2CH_2CCH$ (295 µl, 2.1 mmol)	$C_{27}H_{29}NO$, **4wa** (302 mg, 79%)	384.2326 (384.2327)
12	4-Br-C_6H_4CCH (378 mg, 2.1 mmol)	$C_{23}H_{19}Br_2NO$, **4la** (342 mg, 71%)	483.9899 (483.9912)				

Table S6. Amount of reagent used, product formed, and HRMS data for products. All experiments carried out using arylamine (1 mmol), alkyne (2.1 mmol) and **1** (12 mg, 0.02 mmol).

S/No	Alkyne	Aniline	Product (mg, %)	HRMS: $[M+H]^+$ Found (calc)
1	PhCCH (230 µl, 2.1 mmol)	3-C_2H_5O-$C_6H_4NH_2$ (137 mg, 1.0 mmol)	$C_{24}H_{23}NO$, **4ab** (283 mg, 83%)	342.1862 (342.1858)
2	PhCCH (230 µl, 2.1 mmol)	3-C_3H_7O-$C_6H_4NH_2$ (151 mg, 1.0 mmol)	$C_{25}H_{25}NO$, **4ac** (291 mg, 82%)	356.2012 (356.2014)
3	PhCCH (230 µl, 2.1 mmol)	3-$(CH_3)_2CHO$-$C_6H_4NH_2$ (151 mg, 1.0 mmol)	$C_{25}H_{25}NO$, **4ad** (280 mg, 79%)	356.2019 (356.2014)
4	PhCCH (230 µl, 2.1 mmol)	3-C_4H_9O-$C_6H_4NH_2$ (165 mg, 1.0 mmol)	$C_{26}H_{27}NO$, **4ae** (298 mg, 81%)	370.2171 (370.2171)
5	PhCCH (230 µl, 2.1 mmol)	3-$C_6H_{13}O$-$C_6H_4NH_2$ (193 mg, 1.0 mmol)	$C_{28}H_{31}NO$, **4af** (301 mg, 76%)	398.2483 (398.2484)
6	PhCCH (230 µl, 2.1 mmol)	3-$PhCH_2O$-$C_6H_4NH_2$ (199 mg, 1.0 mmol)	$C_{29}H_{25}NO$, **4ag** (322 mg, 80%)	404.2021 (404.2014)
7	PhCCH (230 µl, 2.1 mmol)	3-(4-tolyl)-CH_2O-$C_6H_4NH_2$ (213 mg, 1.0 mmol)	$C_{30}H_{27}NO$, **4ah** (350 mg, 84%)	418.2174 (418.2171)
8	PhCCH (230 µl, 2.1 mmol)	3,5-CH_3O-C_6H_3NH2 (153 mg, 1.0 mmol)	$C_{24}H_{23}NO_2$, **4ai** (257 mg, 72%)	358.1805 (358.1807)
9	$CH_3(CH_2)_3CCH$ (241 µl, 2.1 mmol)	3-CH_3-C_6H_3NH2 (107 mg, 1.0 mmol)	$C_{19}H_{29}N$, **4rj** (130 mg, 48%)	272.2373 (272.2378)
10	$CH_3(CH_2)_3CCH$ (241 µl, 2.1 mmol)	$C_6H_5NH_2$ (93 mg, 1.0 mmol)	$C_{18}H_{27}N$, **4rk** (87 mg, 34%)	258.2221 (258.2222)
11	PhCCH (230 µl, 2.1 mmol)	$C_6H_5NH_2$ (93 mg, 1.0 mmol)	$C_{22}H_{19}N$, **4ak** (86 mg, 29%)	297.1521 (297.1517)

Table S7. ^{1}H and $^{13}C\{^{1}H\}$ NMR data for 3-alkoxyanilines.

	^{1}H NMR data	**$^{13}C\{^{1}H\}$ NMR data**
3b	1.41 (t, $^{3}J_{HH}$= 7.1, 3H, CH_3), 3.60 (s, 2H, NH_2) 4.00 (q, $^{3}J_{HH}$= 7.1, 2H, OCH_2), 6.25-6.30 (m, 2H, aromatic), 6.34 (dd, $^{3}J_{HH}$= 8.2, 2.3, 1H, aromatic), 7.07 (t, $^{3}J_{HH}$= 8.0, 1H, aromatic).	14.93 (CH_3), 63.23 (OCH_2), 101.65, 104.57, 107.86 and 130.11 (aromatic CH), 147.92 and 160.13 (aromatic C).
3c	1.04 (t, $^{3}J_{HH}$= 7.3, 3H, CH_3), 1.75-1.84 (m, 2H, CH_2), 3.66 (s, 2H, NH_2), 3.89 (t, $^{3}J_{HH}$= 6.6, 2H, OCH_2), 6.25-6.35 (m, 3H, aromatic), 7.06 (t, $^{3}J_{HH}$= 8.0, 1H, aromatic).	10.67 (CH_3), 22.74 (CH_2), 69.42 (OCH_2), 101.79, 104.73, 107.87 and 130.17 (aromatic CH), 147.91 and 160.42 (aromatic C).
3d	1.33 (d, $^{3}J_{HH}$= 6.4, 6H, 2×CH_3), 3.64 (s, 2H, NH_2) 4.50 (sep, $^{3}J_{HH}$= 6.4, 1H, CH), 6.24-6.34 (m, 3H, aromatic), 7.05 (t, $^{3}J_{HH}$= 8.0, 1H, aromatic).	22.29 (CH_3), 69.73 (OCH), 103.19, 106.00, 107.90 and 130.20 (aromatic CH), 147.96 and 159.18 (aromatic C).
3e[2]	0.97 (t, $^{3}J_{HH}$= 7.3, 3H, CH_3), 1.44-1.53 (m, 2H, CH_2), 1.71-1.78 (m, 2H, CH_2), 3.64 (s, 2H, NH_2), 3.92 (t, $^{3}J_{HH}$= 6.4, 2H, OCH_2), 6.24-6.34 (m, 3H, aromatic), 7.05 (t, $^{3}J_{HH}$= 8.0, 1H, aromatic).	14.04 (CH_3), 19.45 and 31.55 (CH_2), 67.64 (OCH_2), 101.85, 104.80, 107.90 and 130.21 (aromatic CH), 147.91 and 160.50 (aromatic C).
3f	0.91 (t, $^{3}J_{HH}$= 6.9, 3H, CH_3), 1.31-1.35 (m, 4H, 2×CH_2), 1.44 (q, $^{3}J_{HH}$=7.8. 2H, CH_2), 1.75 (q, $^{3}J_{HH}$=6.9, 2H, CH_2), 3.63 (s, 2H, NH_2), 3.91 (t, $^{3}J_{HH}$= 6.6, 2H, OCH_2), 6.24-6.33 (m, 3H, aromatic), 7.04 (t, $^{3}J_{HH}$= 8.0, 1H, aromatic).	14.25 (CH_3), 22.82, 25.95, 29.48 and 31.80 (CH_2), 67.99 (OCH_2), 101.89, 104.85, 107.92 and 130.24 (aromatic CH), 147.91 and 160.53 (aromatic C).
3g[3]	3.65 (s, 2H, NH_2), 5.03 (s, 2H, OCH_2), 6.30-6.42 (m, 3H, aromatic), 7.07 (t, $^{3}J_{HH}$= 8.0, 1H, aromatic), 7.25-7.44 (m, 5H, aromatic).	70.02 (OCH_2), 102.22, 105.06, 108.39, 127.64, 128.06, 128.74 and 130.33 (aromatic CH), 137.43, 147.98 and 160.21 (aromatic C).
3h	2.40 (s, 3H, CH_3), 3.66 (s, 2H, NH_2), 5.01 (s, 2H, OCH_2), 6.32-6.45 (m, 3H, aromatic), 7.10 (t, $^{3}J_{HH}$= 8.0, 1H, aromatic), 7.23 (d, $^{3}J_{HH}$= 8.2, 2H, aromatic), 7.35 (d, $^{3}J_{HH}$= 7.8, 2H, aromatic).	21.36 (CH_3), 69.90 (OCH_2), 102.18, 105.03, 108.27, 127.75, 129.38, and 130.25 (aromatic CH), 134.34, 137.77, 147.95 and 160.23 (aromatic C).

Table S8. ^{1}H and $^{13}C\{^{1}H\}$ NMR data for **4** & **5**.

	^{1}H NMR data	**$^{13}C\{^{1}H\}$ NMR data**
4aa[4]	1.77 (s, 3H, CH_3), 3.76 (s, 3H, CH_3), 4.23 (bs, 1H, NH), 5.52 (s, 1H, =CH), 6.14-6.16 (m, 2H, aromatic), 6.82-6.85 (m, 1H, aromatic), 7.22-7.26 (m, 1H, aromatic), 7.34-7.37 (m, 7H, aromatic), 7.57 (d, $^{3}J_{HH}$=7.8, 2H, aromatic).	30.35 (CH_3), 55.33 (C), 57.38 (OCH_3), 98.94, 102.76, 114.22, 125.53, 126.83, 126.99, 127.47, 127.51, 128.35, 128.61, 129.15, 135.56, 139.83, 144.76, 149.06 and 160.77 (C&CH, aromatic & alkene).
4ba	1.84 (s, 3H, CH_3), 2.46 & 2.47 (s, 6H, 2xCH_3, Ar-CH_3), 3.83 (s, 3H, OCH_3), 4.30 (bs, 1H, NH), 5.61 (s, 1H, =CH), 6.22-6.26 (m, 2H, aromatic), 6.97 (d, $^{3}J_{HH}$=8.2, 1H, aromatic), 7.15 (d, $^{3}J_{HH}$=7.3, 1H, aromatic), 7.22-7.37 (m, 5H, aromatic), 7.46 (d, $^{3}J_{HH}$=8.2, 1H, aromatic), 7.48 (s, 1H, aromatic).	21.54 & 21.81 (Ar-CH_3), 30.21 (CH_3), 55.18 (C), 57.24 (OCH_3), 98.85, 102.55, 114.13, 122.60, 126.15, 126.32, 126.73, 127.40, 127.63, 128.14, 128.41, 129.71, 135.36, 137.81, 137.98, 139.75, 144.71, 149.01 and 160.62 (C&CH, aromatic & alkene).
4ca[4]	1.81 (s, 3H, CH_3), 2.40 & 2.46 (s, 6H, 2xCH_3, Ar-CH_3), 3.81 (s, 3H, OCH_3), 4.28 (bs, 1H, NH), 5.58 (s, 1H, =CH), 6.19-6.23 (m, 2H, aromatic), 6.94 (d, $^{3}J_{HH}$=8.2, 1H, aromatic), 7.21-7.27 (m, 4H, aromatic), 7.34 (d, $^{3}J_{HH}$=8.2, 2H, aromatic), 7.52 (d, $^{3}J_{HH}$=8.2, 2H, aromatic).	21.08 & 21.32 (Ar-CH_3), 30.30 (CH_3), 55.19 (C), 56.98 (OCH_3), 98.86, 102.57, 114.29, 125.40, 126.67, 127.37, 128.95, 129.17, 135.21, 136.41, 136.87, 137.04, 144.78, 146.19 and 160.59 (C&CH, aromatic & alkene).
4da	0.95-1.01 (m, 6H, 2xCH_3), 1.37-1.46 (m, 4H, 2xCH_2), 1.59-1.71 (m, 4H, 2xCH_2), 1.78 (s, 3H, CH_3), 2.60-2.69 (m, 4H, 2xCH_2), 3.78 (s, 3H, OCH_3), 4.23 (bs, 1H, NH), 5.53 (s, 1H, =CH), 6.14-6.19 (m, 2H, aromatic), 6.91 (d, $^{3}J_{HH}$=8.7, 1H, aromatic), 7.18-7.26 (m, 4H, aromatic), 7.32 (d, $^{3}J_{HH}$=7.8, 2H, aromatic), 7.50 (d, $^{3}J_{HH}$=8.2, 2H, aromatic).	14.14 and 14.16 (CH_3), 22.58(CH_2), 30.23 (CH_3), 33.77, 33.83, 35.33 and 35.57 (CH_2), 55.26 (C), 57.12 (OCH_3), 98.83, 102.56, 114.27, 125.45, 126.79, 127.42, 128.31, 128.53, 128.95, 135.16, 137.09, 141.52, 142.12, 144.80, 146.37 and 160.62 (C&CH, aromatic & alkene).
4ea	1.36 (s, 9H, 3xCH_3), 1.40 (s, 9H, 3xCH_3), 1.80 (s, 3H, CH_3), 3.79 (s, 3H, OCH_3), 4.24 (bs, 1H, NH), 5.54 (s, 1H, =CH), 6.15-6.20 (m, 2H, aromatic), 6.95 (d, $^{3}J_{HH}$=8.2, 1H, aromatic), 7.34-7.44 (m, 6H, aromatic), 7.54 (d, $^{3}J_{HH}$=7.8, 2H, aromatic).	30.17, 31.51 and 31.57 (CH_3), 34.54 and 34.69 (C), 55.24 (C), 57.04 (OCH_3), 98.79, 102.57, 114.20, 125.15, 125.25, 125.40, 126.84, 127.44, 128.71, 135.03, 136.84, 144.80, 146.06, 149.65, 150.29 and 160.61 (C&CH, aromatic & alkene).
4fa	0.93-0.98 (m, 6H, 2xCH_3), 1.37-1.42 (m, 8H, 4xCH_2), 1.64-1.72 (m, 4H, 2xCH_2), 1.79 (s, 3H, CH_3), 2.61-2.70 (m, 4H, 2xCH_2), 3.78 (s, 3H, OCH_3), 4.24 (bs, 1H, NH), 5.54 (s, 1H, =CH), 6.15-6.19 (m, 2H, aromatic), 6.92 (d, $^{3}J_{HH}$=8.2, 1H, aromatic), 7.18-7.26 (m, 4H, aromatic), 7.32 (d, $^{3}J_{HH}$=7.8, 2H, aromatic), 7.51 (d, $^{3}J_{HH}$=8.2, 2H, aromatic).	14.19 (CH_3), 22.69 (CH_2), 30.19 (CH_3), 31.29, 31.34, 31.70, 35.59 and 35.82 (CH_2), 55.21 (C), 57.08 (OCH_3), 98.80, 102.52, 114.22, 125.42, 126.76, 127.37, 128.26, 128.48, 128.60, 128.73, 128.91, 135.12, 137.05, 141.51, 142.12, 144.77, 146.34 and 160.58 (C&CH, aromatic & alkene).

Table S8. Continued……

4ga	1.60 (s, 3H, CH_3), 3.59 (s, 3H, OCH_3), 4.46 & 4.53 (s, 4H, 2xCH_2), 5.49 (s, 1H, =CH), 5.97 (d, $^3J_{HH}$=8.2, 1H, aromatic), 6.23 (s, 1H, aromatic), 6.60 (d, $^3J_{HH}$=8.7, 1H, aromatic), 7.17-7.27 (m, 6H, aromatic), 7.43 (d, $^3J_{HH}$=8.2, 2H, aromatic).	31.14 (CH_3), 55.43 (C), 57.46 (OCH_3), 64.95 (OCH_2), 99.80, 103.44, 115.63, 126.29, 127.72, 127.88, 127.95, 129.85, 136.89, 140.21, 140.47, 141.63, 147.13, 149.84 and 161.89 (C&CH, aromatic & alkene).
4ha	1.62 (s, 3H, CH_3), 3.66 (s, 3H, OCH_3), 3.64 (bs, 1H, NH), 5.49 (s, 1H, =CH), 6.02 (d, $^3J_{HH}$=8.7, 1H, aromatic), 6.25 (s, 1H, aromatic), 6.58 (d, $^3J_{HH}$=7.3, 1H, aromatic), 6.69-6.75 (m, 4H, aromatic), 6.95 (d, $^3J_{HH}$=7.3, 2H, aromatic), 7.06-7.15 (m, 2H, aromatic).	31.15 (CH_3), 55.42 (C), 57.54 (OCH_3), 99.65, 103.37, 113.53, 114.16, 115.16, 115.46, 116.72, 117.48, 121.24, 127.36, 127.95, 130.13, 130.18, 136.96, 142.75, 147.01, 152.53, 158.15 and 161.91(C&CH, aromatic & alkene).
4ia	1.80 (s, 3H, CH_3), 3.78, 3.82 & 3.84 (s, 9H, 3xOCH_3), 4.38 (bs, 1H, NH), 5.61 (s, 1H, =CH), 6.19-6.22 (m, 2H, aromatic), 6.83 (d, $^3J_{HH}$=8.0, 1H, aromatic), 6.94 (d, $^3J_{HH}$=8.2, 2H, aromatic), 6.99-7.03 (m, 2H, aromatic), 7.18-7.19 (m, 2H, aromatic), 7.29-7.36 (m, 2H, aromatic).	30.15 (CH_3), 55.06 (C), 55.14, 55.20 & 57.07 (OCH_3), 98.76, 102.66, 111.52, 111.83, 112.91, 113.88, 114.45, 117.65, 121.42, 126.38, 127.26, 129.16, 129.42, 135.31, 141.07, 144.60, 150.58, 159.37 and 159.56, 160.55 (C&CH, aromatic & alkene).
4ja[4]	1.77 (s, 3H, CH_3), 3.77, 3.80 & 3.86 (s, 9H, 3xOCH_3), 4.31 (bs, 1H, NH), 5.51 (s, 1H, =CH), 6.15-6.21 (m, 2H, aromatic), 6.90-6.97 (m, 5H, aromatic), 7.34 (d, $^3J_{HH}$=8.2, 2H, aromatic), 7.52 (d, $^3J_{HH}$=8.7, 2H, aromatic).	30.08 (CH_3), 55.12 (C), 55.28 & 56.68 (OCH_3), 98.77, 102.52, 113.61, 113.67, 114.27, 126.54, 126.63, 127.24, 130.08, 132.11, 134.65, 141.33, 144.76, 158.35, 158.97 and 160.53 (C&CH, aromatic & alkene).
4ka	1.76 (s, 3H, CH_3), 3.76 (s, 3H, OCH_3), 4.19 (bs, 1H, NH), 5.49 (s, 1H, =CH), 6.13-6.17 (m, 2H, aromatic), 6.87 (d, $^3J_{HH}$=8.7, 1H, aromatic), 6.95-7.13 (m, 11H, aromatic), 7.31-7-37 (m, 6H, aromatic), 7.51 (d, $^3J_{HH}$=8.7, 2H, aromatic).	30.20 (CH_3), 55.19 (C), 56.99 (OCH_3), 98.93, 102.81, 114.10, 118.63, 119.10, 123.46, 126.68, 126.98, 127.38, 129.89, 130.43, 134.70, 134.81, 143.87, 144.65, 156.22, 156.77, 157.24, 157.32 and 160.76 (C&CH, aromatic & alkene).
4la	1.72 (s, 3H, CH_3), 3.76 (s, 3H, OCH_3), 4.19 (bs, 1H, NH), 5.44 (s, 1H, =CH), 6.14-6.16 (m, 2H, aromatic), 6.76 (d, $^3J_{HH}$=9.6, 1H, aromatic), 7.19 (d, $^3J_{HH}$=7.8, 2H, aromatic), 7.38-7.49 (m, 6H, aromatic).	30.19 (CH_3), 55.38 (C), 57.09 (OCH_3), 99.12, 103.14, 113.75, 121.01, 121.63, 126.33, 127.31, 127.41, 130.78, 131.55, 131.68. 135.09, 138.50, 144.52, 147.93 and 161.01 (C&CH, aromatic & alkene).
4ma	1.74 (s, 3H, CH_3), 3.77 (s, 3H, OCH_3), 4.21 (bs, 1H, NH), 5.46 (s, 1H, =CH), 6.16-6.18 (m, 2H, aromatic), 6.78 (d, $^3J_{HH}$=8.2, 1H, aromatic), 7.20-7.34 (m, 6H, aromatic), 7.42 (d, $^3J_{HH}$=7.8, 1H, aromatic), 7.51 (s, 1H, aromatic).	30.21 (CH_3), 55.37 (C), 57.30 (OCH_3), 99.12, 103.24, 113.54, 123.80, 125.87, 126.41, 127.22, 127.34, 127.42, 127.77, 129.12, 129.65, 129.97, 134.25, 134.56, 141.44, 144.42, 150.95 and 161.04 (C&CH, aromatic & alkene).

Table S8. Continued……

4na	1.73 (s, 3H, CH_3), 3.76 (s, 3H, OCH_3), 4.20 (bs, 1H, NH), 5.45 (s, 1H, =CH), 6.15-6.17 (m, 2H, aromatic), 6.77 (d, $^3J_{HH}$=8.2, 1H, aromatic), 7.25-7.35 (m, 6H, aromatic), 7.46 (d, $^3J_{HH}$=8.7, 2H, aromatic).	30.16 (CH_3), 55.32 (C), 56.97 (OCH_3), 99.09, 103.06, 113.76, 126.41, 126.91, 127.35, 128.54, 128.65, 130.39, 132.80, 133.41, 134.91, 138.01, 144.51, 147.37 and 160.93 (C&CH, aromatic & alkene).
4oa	1.74 (s, 3H, CH_3), 3.76 (s, 3H, OCH_3), 4.24 (bs, 1H, NH), 5.50 (s, 1H, =CH), 6.16-6.19 (m, 2H, aromatic), 6.82 (d, $^3J_{HH}$=8.2, 1H, aromatic), 6.91-6.95 (m, 1H, aromatic), 7.00-7.08 (m, 1H, aromatic), 7.13 (d, $^3J_{HH}$=7.3, 1H, aromatic), 7.22-7-35 (m, 4H, aromatic).	30.26 (CH_3), 55.32 (C), 57.20 (OCH_3), 99.11, 103.19, 112.73 (d, $^2J_{CF}$=23.0), 113.87 (d, $^2J_{CF}$=21.1), 114.49 (d, $^2J_{CF}$=21.1), 116.05 (d, $^2J_{CF}$=21.1), 121.01, 124.82, 126.39, 127.42, 129.86 (d, $^3J_{CF}$=8.6), (d, $^3J_{CF}$=7.7), 135.08, 141.86 (d, $^3J_{CF}$=7. 7), 144.51, 151.65 (d, $^3J_{CF}$=5.8), 161.00, 162.83 (d, $^1J_{CF}$=246.2), 163.08 (d, $^1J_{CF}$=247.2) (C&CH, aromatic & alkene).
4pa	1.76 (s, 3H, CH_3), 3.77 (s, 3H, OCH_3), 4.21 (bs, 1H, NH), 5.46 (s, 1H, =CH), 6.15-6.19 (m, 2H, aromatic), 6.80 (d, $^3J_{HH}$=8.7, 1H, aromatic), 7.00-7.09 (m, 4H, aromatic), 7.30-7.34 (m, 2H, aromatic), 7.50-7.54 (m, 2H, aromatic).	30.16 (CH_3), 55.27 (C), 56.92 (OCH_3), 98.98, 102.92, 113.97, 115.22 (d, $^2J_{CF}$=21.1), 126.62, 127.23, 127.24 (d, $^2J_{CF}$=18.2), 130.59, 130.66, 134.71, 135.55, 144.52, 144.77, 160.84, 161.77 (d, $^1J_{CF}$=246.2) and 162.37 (d, $^1J_{CF}$=247.2) (C&CH, aromatic & alkene).
4qa	0.90 (t, $^3J_{HH}$=7.3, 3H, CH_3), 0.97 (t, $^3J_{HH}$=7.3, 3H, CH_3), 1.23 (s, 3H, CH_3), 1.34-1.49 (m, 4H, 2xCH_2), 1.55-1.60 (m, 2H, CH_2), 2.29-2.34 (m, 2H, CH_2), 3.62 (bs, 1H, NH), 3.75 (s, 3H, OCH_3), 5.09 (s, 1H, =CH), 6.00 (s, 1H, aromatic), 6.16 (d, $^3J_{HH}$=8.5, 1H, aromatic), 6.99 (d, $^3J_{HH}$=8.7, 1H, aromatic).	14.22, 14.72 and 17.75 (CH_3), 22.65, 30.30, 34.34 and 46.93 (CH_2), 54.79 (C), 55.19 (OCH_3), 98.47, 101.89, 114.35, 124.36, 124.52, 132.58, 145.53 and 160.15 (C&CH, aromatic & alkene).
4ra[5]	0.90 (t, $^3J_{HH}$=6.8, 3H, CH_3), 0.96 (t, $^3J_{HH}$=7.3, 3H, CH_3), 1.23 (s, 3H, CH_3), 1.28-1.58 (m, 10H, 5xCH_2), 2.32-2.37 (m, 2H, CH_2), 3.61 (bs, 1H, NH), 3.74 (s, 3H, OCH_3), 5.01 (s, 1H, =CH), 6.01 (s, 1H, aromatic), 6.18 (d, $^3J_{HH}$=8.5, 1H, aromatic), 7.00 (d, $^3J_{HH}$=8.7, 1H, aromatic).	14.17, 14.29 and 22.81 (CH_3), 23.31, 26.63, 30.18, 30.76, 31.93 and 44.13 (CH_2), 54.69(C), 55.16 (OCH_3), 98.50, 101.89, 114.35, 124.22, 124.50, 132.80, 145.47 and 160.12 (C&CH, aromatic & alkene).
4sa	0.85 (t, $^3J_{HH}$=6.8, 3H, CH_3), 0.88 (t, $^3J_{HH}$=6.9, 3H, CH_3), 1.19 (s, 3H, CH_3), 1.21-1.55 (m, 14H, 7xCH_2), 2.26-2.32 (m, 2H, CH_2), 3.58 (bs, 1H, NH), 3.72 (s, 3H, OCH_3), 5.06 (s, 1H, =CH), 5.97 (s, 1H, aromatic), 6.14 (d, $^3J_{HH}$=8.5, 1H, aromatic), 6.96 (d, $^3J_{HH}$=8.7, 1H, aromatic).	14.29, 14.34, 22.79, 22.88, 24.20, 28.33, 30.22, 32.06, 32.26, 32.52 and 44.40 (CH_3 &CH_2), 54.80 (C), 55.25 (OCH_3), 98.58, 101.96, 114.44, 124.32, 124.57, 132.91, 145.52 and 160.18 (C& CH, aromatic & alkene).

Table S8. Continued……

4ta[5]	0.86 (t, $^3J_{HH}$=6.8, 3H, CH_3), 0.89 (t, $^3J_{HH}$=6.9, 3H, CH_3), 1.17 (s, 3H, CH_3), 1.25-1.56 (m, 18H, 9xCH_2), 2.28-2.34 (m, 2H, CH_2), 3.59 (bs, 1H, NH), 3.74 (s, 3H, OCH_3), 5.07 (s, 1H, =CH), 5.99 (s, 1H, aromatic), 6.15 (d, $^3J_{HH}$=8.5, 1H, aromatic), 6.97 (d, $^3J_{HH}$=8.7, 1H, aromatic).	14.30, 22.87, 22.91, 24.49, 28.59, 29.51, 29.99, 30.22, 31.97, 32.07, 32.28 and 44.46 (CH_3 &CH_2), 54.80 (C), 55.26 (OCH_3), 98.57, 101.95, 114.44, 124.31, 124.57, 132.89, 145.51 and 160.17 (C&CH, aromatic & alkene).
4ua	0.88 (t, $^3J_{HH}$=7.3, 3H, CH_3), 0.89 (t, $^3J_{HH}$=6.9, 3H, CH_3), 1.22 (s, 3H, CH_3), 1.26-1.59 (m, 26H, 13xCH_2), 2.29-2.35 (m, 2H, CH_2), 3.60 (bs, 1H, NH), 3.75 (s, 3H, OCH_3), 5.08 (s, 1H, =CH), 6.00 (s, 1H, aromatic), 6.16 (d, $^3J_{HH}$=8.5, 1H, aromatic), 6.99 (d, $^3J_{HH}$=8.2, 1H, aromatic).	14.33, 22.91, 24.54, 28.63, 29.54, 29.58, 29.73, 29.84, 30.23, 30.34, 32.10, 32.13, 32.29 and 44.46 (CH_3 &CH_2), 54.80 (C), 55.23 (OCH_3), 98.57, 101.95, 114.43, 124.30, 124.57, 132.89, 145.52 and 160.17 (C&CH, aromatic & alkene).
4va	0.88 (t, $^3J_{HH}$=6.8, 3H, CH_3), 0.89 (t, $^3J_{HH}$=7.3, 3H, CH_3), 1.21 (s, 3H, CH_3), 1.24-1.57 (m, 34H, 17xCH_2), 2.28-2.34 (m, 2H, CH_2), 3.59 (bs, 1H, NH), 3.74 (s, 3H, OCH_3), 5.07 (s, 1H, =CH), 5.99 (s, 1H, aromatic), 6.15 (d, $^3J_{HH}$=8.5, 1H, aromatic), 6.98 (d, $^3J_{HH}$=8.2, 1H, aromatic).	14.35, 22.91, 24.54, 28.63, 29.59, 29.77, 29.89, 30.24, 30.35, 32.14, 32.29 and 44.47 (CH_3 &CH_2), 54.81 (C), 55.25 (OCH_3), 98.58, 101.95, 114.44, 124.33, 124.58, 132.89, 145.52 and 160.18 (C&CH, aromatic & alkene).
4wa	1.27 (s, 3H, CH_3), 1.69-1.82 (m, 2H, CH_2), 2.53-2.61 (m, 1H, CH_2), 2.67-2.80 (m, 3H, CH_2), 2.88-2.93 (m, 2H, CH_2), 3.64 (bs, 1H, NH), 3.78 (s, 3H, OCH_3), 5.08 (s, 1H, =CH), 6.02 (s, 1H, aromatic), 6.23 (d, $^3J_{HH}$=8.5, 1H, aromatic), 7.10 (d, $^3J_{HH}$=8.7, 1H, aromatic), 7.15-7.34 (m, 10H, aromatic).	30.53, 31.28, 34.14, 34.92 and 46.12 (CH_3 &CH_2), 55.00 (C), 55.26 (OCH_3), 98.67, 102.24, 113.83, 124.22, 124.52, 125.78, 126.03, 128.50, 128.54, 128.72, 132.55, 142.25, 142.88, 145.46 and 160.37 (C&CH, aromatic & alkene).
4ab	1.43 (t, $^3J_{HH}$=7.3, 3H, CH_3), 1.81 (s, 3H, CH_3), 4.02 (q, $^3J_{HH}$=7.3, 2H, CH_2), 4.26 (bs, 1H, NH), 5.57 (s, 1H, =CH), 6.17-6.20 (m, 2H, aromatic), 6.88 (d, $^3J_{HH}$=9.6, 1H, aromatic), 7.27 (t, $^3J_{HH}$=7.3, 1H, aromatic), 7.35-7.42 (m, 7H, aromatic), 7.61 (d, $^3J_{HH}$=8.0, 2H, aromatic).	15.04 & 30.31 (CH_3), 57.30 (C), 63.37 (OCH_2), 99.48, 103.34, 114.09, 125.48, 126.72, 126.91, 127.40, 127.46, 128.29, 128.54, 129.11, 135.57, 139.83, 144.73, 149.06 and 160.10 (aromatic C&CH).
4ac	1.03 (t, $^3J_{HH}$=7.3, 3H, CH_3), 1.77 (s, 3H, CH_3), 1.76-1.81 (m, 2H, CH_2), 3.88 (t, $^3J_{HH}$=6.9, 2H, CH_2), 4.21 (bs, 1H, NH), 5.52 (s, 1H, =CH), 6.13-6.16 (m, 2H, aromatic), 6.83 (d, $^3J_{HH}$=9.2, 1H, aromatic), 7.22-7.26 (m, 1H, aromatic), 7.32-7.37 (m, 7H, aromatic), 7.57 (d, $^3J_{HH}$=8.5, 2H, aromatic).	10.75 (CH_3), 22.82 (CH_2), 30.34 (CH_2), 57.37 (C), 69.54 (OCH_2), 99.53, 103.46, 114.09, 125.54, 126.72, 126.96, 127.43, 127.49, 128.32, 128.59, 129.15, 135.63, 139.89, 144.71, 149.09 and 160.35 (C&CH, aromatic & alkene).
4ad	1.33 (d, $^3J_{HH}$=6.4, 6H, 2xCH_3), 1.77 (s, 3H, CH_3), 4.19 (bs, 1H, NH), 4.47-4.53 (m, 1H, CH) 5.51 (s, 1H, =CH), 6.11-6.14 (m, 2H, aromatic), 6.82 (d, $^3J_{HH}$=9.1, 1H, aromatic), 7.23 (t, $^3J_{HH}$=7.3, 1H, aromatic), 7.31-7.37 (m, 7H, aromatic), 7.57 (d, $^3J_{HH}$=7.8, 2H, aromatic).	22.36 (CH_3), 30.36 (CH), 57.37 (C), 69.77 (OCH), 100.76, 104.52, 114.00 125.54, 126.74, 126.94, 127.42, 127.47, 128.31, 128.58, 129.14, 135.58, 139.87, 144.75, 149.12 and 159.07 (C&CH, aromatic & alkene).

Table S8. Continued……

4ae	0.97 (t, $^3J_{HH}$=7.3, 3H, CH_3), 1.45-1.51 (m, 2H, CH_2), 1.77 (s, 3H, CH_3), 1.71-1.78 (m, 2H, CH_2), 3.92 (t, $^3J_{HH}$=6.4, 2H, CH_2), 4.20 (bs, 1H, NH), 5.51 (s, 1H, =CH), 6.12-6.14 (m, 2H, aromatic), 6.81 (d, $^3J_{HH}$=7.8, 1H, aromatic), 7.23 (t, $^3J_{HH}$=6.4, 1H, aromatic), 7.32-7.37 (m, 7H, aromatic), 7.57 (d, $^3J_{HH}$=8.0, 2H, aromatic).	14.08 (CH_3), 19.47 (CH_2), 30.35 (CH_2), 31.57 (CH_2), 57.37 (C), 67.71 (OCH_2), 99.50, 103.45, 114.05, 125.54, 126.71, 126.97, 127.43, 127.49, 128.33, 128.60, 129.16, 135.62, 139.89, 144.73, 149.09 and 160.36(C&CH, aromatic & alkene).
4af	0.95 (t, $^3J_{HH}$=6.4, 3H, CH_3), 1.37-1.47 (m, 6H, 3xCH_2), 1.79 (s, 3H, CH_3), 1.76-1.80 (m, 2H, CH_2), 3.94 (t, $^3J_{HH}$=6.9, 2H, CH_2), 4.23 (bs, 1H, NH), 5.53 (s, 1H, =CH), 6.16-6.17 (m, 2H, aromatic), 6.82-6.86 (m, 1H, aromatic), 7.25 (t, $^3J_{HH}$=6.4, 1H, aromatic), 7.32-7.39 (m, 7H, aromatic), 7.58 (d, $^3J_{HH}$=8.2, 2H, aromatic).	14.26 (CH_3), 22.82, 25.94, 29.48 (CH_2), 30.33 (CH_2), 31.80 (CH_2), 57.35 (C), 68.02 (OCH_2), 99.50, 103.44, 114.04, 125.53, 126.70, 126.95, 127.42, 127.48, 128.32, 128.58, 129.15, 135.62, 139.88, 144.72, 149.10 and 160.35 (C&CH, aromatic & alkene).
4ag	1.76 (s, 3H, CH_3), 4.21 (bs, 1H, NH), 5.01 (s, 2H, CH_2), 5.51(s, 1H, =CH), 6.19-6.21 (m, 2H, aromatic), 6.82 (d, $^3J_{HH}$=8.7, 1H, aromatic), 7.21-7.25 (m, 1H, aromatic), 7.29-7.42 (m, 12H, aromatic), 7.55 (d, $^3J_{HH}$=8.5, 2H, aromatic).	30.37 (CH_3), 57.42 (C), 70.07 (OCH_2), 99.90, 103.68, 114.44, 125.56, 126.96, 127.01, 127.48, 127.54, 127.68, 128.16, 128.36, 128.62, 128.77, 129.16, 135.58, 137.35, 139.81, 144.65, 149.03 and 160.03 (C&CH, aromatic & alkene).
4ah	1.81 (s, 3H, CH_3), 2.41 (s, 2H, CH_2), 4.23 (bs, 1H, NH), 5.01 (s, 2H, CH_2), 5.57 (s, 1H, =CH), 6.25-6.27 (m, 2H, aromatic), 6.89 (d, $^3J_{HH}$=9.2, 1H, aromatic), 7.24 (d, $^3J_{HH}$=7.8, 2H, aromatic), 7.28 (t, $^3J_{HH}$=7.3, 1H, aromatic), 7.34-7.41 (m, 9H, aromatic), 7.60 (d, $^3J_{HH}$=7.8, 2H, aromatic).	21.38, 30.31 (CH_3), 57.34 (C), 69.93 (OCH_2), 99.86, 103.65, 114.34, 125.52, 126.87, 126.95, 127.42, 127.48, 127.78, 128.32, 128.57, 129.12, 129.40, 134.26, 135.54, 137.79, 139.79, 144.70, 149.03 and 160.06 (C&CH, aromatic & alkene).
4ai[5]	1.68 (s, 3H, CH_3), 3.29 (s, 3H, OCH_3), 3.76 (s, 3H, OCH_3), 4.35 (bs, 1H, NH), 5.53 (s, 1H, =CH), 5.79 (s, 1H, aromatic), 5.91 (s, 1H, aromatic), 7.17-7.31 (m, 8H, aromatic), 7.50 (d, $^3J_{HH}$=5.3, 2H, aromatic.	29.72 (CH_3), 55.17 (C), 55.34 and 56.45 (OCH_3), 90.11, 92.23, 104.07, 125.53, 126.28, 126.85, 127.32, 127.51, 128.25, 128.42, 134.99, 143.01, 146.66, 148.53, 158.15 and 161.35 (C&CH, aromatic & alkene).
4rj	0.88-0.96 (m, 6H, 2×CH_3), 1.22 (s, 3H, CH_3), 1.25-1.55 (m, 10H, 5xCH_2), 2.22 (s, 3H, CH_3), 2.31-2.37 (m, 2H, CH_2), 3.65 (bs, 1H, NH), 5.15 (s, 1H, =CH), 6.26 (s, 1H, aromatic), 6.42 (d, $^3J_{HH}$=7.3, 1H, aromatic), 6.98 (d, $^3J_{HH}$=7.8, 1H, aromatic).	14.23, 14.35 and 21.51 (CH_3), 22.87, 23.37, 26.72, 30.10, 30.83, 31.96 and 44.07 (CH_2), 54.63(C), 113.70, 117.69, 118.17, 123.50, 125.75, 133.10, 138.24 and 144.03 (C&CH, aromatic & alkene).
4rk	0.88-0.97 (m, 6H, 2×CH_3), 1.24 (s, 3H, CH_3), 1.26-1.58 (m, 10H, 5xCH_2), 2.35-2.39 (m, 2H, CH_2), 3.58 (bs, 1H, NH), 5.21 (s, 1H, =CH), 6.42 (d, $^3J_{HH}$=7.8, 1H, aromatic), 6.60 (t, $^3J_{HH}$=7.3, 1H, aromatic), 6.96 (t, $^3J_{HH}$=7.7, 1H, aromatic), 7.09 (d, $^3J_{HH}$=7.8, 1H, aromatic).	14.22, 14.34 and 22.87 (CH_3), 23.37, 26.71, 30.10, 30.78, 31.90 and 44.08 (CH_2), 54.61(C), 112.97, 116.79, 120.64, 123.56, 126.74, 128.31, 133.18 and 144.13 (C&CH, aromatic & alkene).

Table S8. Continued……

4ak[5]	1.54 (s, 3H, CH_3), 6.02 (bs, 1H, NH), 6.93 (t, $^3J_{HH}$=7.3, 1H, aromatic), 7.07 (d, $^3J_{HH}$=7.8, 2H, aromatic), 7.26-7.30 (m, 2H, aromatic), 7.36 (t, $^3J_{HH}$=7.3, 1H, aromatic), 7.43-7.54 (m, 4H, aromatic), 7.67 (d, $^3J_{HH}$=8.5, 3H, aromatic), 7.76 (s, 1H, alkene), 7.91 (d, $^3J_{HH}$=8.2, 1H, aromatic), 8.02 (d, $^3J_{HH}$=8.2, 1H, aromatic).	
5	3.65 (bs, 2H, NH), 3.79 (s, 3H, OCH_3), 5.32 (d, $^2J_{HH}$ =1.4 Hz, 1H, CH_2), 5.74 (d, $^2J_{HH}$ =1.4 Hz, 1H, CH_2), 6.29 (s, 1H, aromatic), 6.38 (d, $^3J_{HH}$ =8.7 Hz, 1H, aromatic), 7.03 (d, $^3J_{HH}$ =8.2 Hz, 1H, aromatic), 7.28-7.33 (m, 3H, aromatic), 7.36-7.39 (m, 2H, aromatic).	55.36 (OCH_3), 101.48, 104.44, 116.20, 120.83, 126.96, 128.23, 128.72, 132.01, 140.32, 144.80, 146.93 and 160.49 (C&CH, alkene & aromatic).
8b	1.69 (s, 6H, 2×CH_3), 3.77 (s, 3H, OCH_3), 3.79 (bs, 1H, NH), 6.38 (d, $^3J_{HH}$=8.2, 1H, aromatic), 6.59 (d, $^3J_{HH}$=8.2, 1H, aromatic), 6.67 (s, 1H, aromatic), 7.11 (t, $^3J_{HH}$=8.2, 1H, aromatic), 7.27-7.30 (m, 3H, aromatic), 7.39-7.41 (m, 2H, aromatic).	30.79 (CH_3), 48.91 (CMe_2), 55.28 (OCH_3), 82.88 and 93.48 (C≡C), 102.57, 104.32, 109.69, 123.42, 128.15, 128.38, 129.72, 131.76, 147.33 and 160.56 (C&CH, aromatic).
8c	1.68 (s, 6H, 2×CH_3), 3.73 (bs, 1H, NH), 6.80 (t, $^3J_{HH}$=7.3, 1H, aromatic), 7.01 (d, $^3J_{HH}$=7.3, 2H, aromatic), 7.20 (t, $^3J_{HH}$=7.3, 2H, aromatic), 7.25-7.28 (m, 3H, aromatic), 7.36-7.38 (m, 2H, aromatic).	30.80 (CH_3), 49.00 (CMe_2), 82.84 and 93.57 (C≡C), 117.11, 119.00, 123.45, 128.13, 128.37, 129.02, 131.76 and 145.98 (C&CH, aromatic).
4aa'	1.37 (s, 6H, 2×CH_3), 3.76 (s, 3H, OCH_3), 3.79 (bs, 1H, NH), 5.36 (s, 1H, alkene), 6.11-6.16 (m, 2H, aromatic), 6.82 (d, $^3J_{HH}$=8.7, 1H, aromatic), 7.33-7.40 (m, 5H, aromatic).	30.80 (CH_3), 52.16 (CMe_2), 55.30 (OCH_3), 99.32 and 102.74, 114.93, 127.24, 127.38, 127.78, 128.30, 129.12, 135.79, 140.08, 145.24 and 160.48 (C&CH, alkene & aromatic).

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Table S9. Crystal and refinement data for **4aa** and **4ga**.

Compound	4aa	4ga
Empirical formula	C23 H21 N O	C25 H25 N O3
Formula weight	327.41	387.46
Crystal system	Monoclinic	Triclinic
Space group	$P2_1/c$	$P\bar{1}$
a, Å	5.9791(19)	9.9270(6)
b, Å	32.635(10)	12.9188(7)
c, Å	8.845(3)	16.2923(9)
α, deg	90	98.309(3)
β, deg	95.044(10)	104.241(3)
γ, deg	90	97.519(3)
Volume, $Å^3$	1719.2(9)	1973.54(19)
Z	4	4
Density (calculated), Mg/m^3	1.265	1.304
Absorption coefficient, mm^{-1}	0.077	0.085
F(000)	696	824
Crystal size, mm^3	0.40 x 0.20 x 0.10	0.36 x 0.28 x 0.08
Reflections collected	18343	9693
Independent reflections	5106 [R(int) = 0.0454]	8056 [R(int) = 0.0630]
Max. and min. transmission	0.9924 and 0.9700	0.9932 and 0.9700
Data / restraints / parameters	5106 / 0 / 232	8056 / 182 / 575
Goodness-of-fit on F^2	1.092	1.102
Final R indices [I>2sigma(I)]	R1 = 0.0535, wR2 = 0.1468	R1 = 0.0594, wR2 = 0.1697
R indices (all data)	R1 = 0.0929, wR2 = 0.1758	R1 = 0.0924, wR2 = 0.1851
Largest diff. peak and hole, $e.Å^{-3}$	0.380 and -0.471	0.406 and -0.381