Supporting information

Table S-1: Reaction conditions and results for a model click reaction of benzyl azide and phenylacetylene catalyzed by a heterogeneous copper catalyst.

Solid support	*T* / °C	Solvent	Excess	Time / h	Conv. / %	Cu-loading / mmol·g^{-1}	Ref.
Amberlyst[a]	25	CH_2Cl_2	1.1 (azide)	12	92	1.23	14,15
Amberlyst	25	-	1.1 (azide)	< 0.5	99	1.35	17
Amberlyst[b]	N[c]	CH_2Cl_2	1.5 (azide)	N[c]	85	1.33	18
Cryogel	25	Acetone	1.1 (alkyne)	5.5	95	0.12	21
Merrifield	25	tBuOH/H_2O	1.1 (alkyne)	2.5	99	0.25	22
Merrifield[g]	25	H_2O	1.2 (alkyne)	48	98	1.25	23
TentaGel	25	tBuOH/H_2O	-	24	99	0.19	24
TentaGel	40	H_2O	1.5 (azide)	6	87	0.26	25
HP20[d]	25	H_2O	1.1 (alkyne)	6	100	0.16	26
PS-bead	40	DMF	1.1 (azide)	8	90	0.04	27
PMEI network	25	EtOAc	2.2 (alkyne)	0.7	99	0.41	28
Polymeric ionic liquid[g]	25	H_2O	1.2 (alkyne)	48	98	1.00	23
PVP	37	H_2O	-	24	87	N[c]	29
phenylethynylCu(I) ladder polymer	100[e]	H_2O	2 (alkyne)	0.16	91	6.15	31
Isonitrile complex	25	H_2O	1.05 (alkyne)	0.08	94	N[c]	32
Metal organic framework	70	Ethanol	1.2 (alkyne)	4	99	4.16	33
Alginate	25	H_2O	1.1 (alkyne)	18	98.2	0.21[f]	34
Chitosan	25	EtOH	1.1 (alkyne)	18	95	0.6	36
Chitosan	70	H_2O/dioxane (8/2)	-	0.5	86	0.17	37
Silica	25	-	-	0.5	93	0.87	38
Silica	40	DMF	1.1 (azide)	8	84	0.05	27
Silica[g]	25	H_2O	1.2 (alkyne)	48	98	1.25	23
Silica[g]	78	EtOH	-	24	91	0.43	39
Silica[g]	25	H_2O	-	0.25	92	0.55	40
Silica[h]	25	-	-	3	96	0.38	41
Silica	25	CH_3CN	1.1 (azide)	12	81	0.45	42
Fe_3O_4/SiO_2[h]	25	-	-	15	99	1.29	41
Silica	25	EtOH/H_2O	1.35 (alkyne)	1.5	98	0.15	43
Al_2O_3	25	Toluene	-	7	98	0.151	44
TiO_2	25	Toluene	-	0.7	99	0.25	45
Cu-Mn spinel oxide[i]	25	CH_3CN	-	8	99	N[c]	46
Montmorillonite	25	CH_2Cl_2	1.1 (azide)	18	99	0.72	47

Hydrotalcite	25	CH_3CN	1.2 (alkyne)	6	86	N[c]	[49]
Zeolite	25	Toluene	1.2 (alkyne)	15	83	4.39	[52]
Zeolite[g]	90	H_2O	-	15	90	N[c]	[54]
Charcoal	25	Dioxane	-	10	99	1.01	[59]
Charcoal[b]	170 [e]	Acetone	1.08 (alkyne)	1	99	1.38	[20]
Charcoal[g]	100	H_2O	-	0.6	91	1.57	[62]
Charcoal[g]	25	CH_2Cl_2	2 (azide)	18	95	1.83	[63]
Charcoal	60	Dioxane	1.1 (alkyne)	0.3	99	0.56	[64]
Activated carbon[g]	70	H_2O	-	3	98	0.25	[65]
Acetylene black	50	$tBuOH/H_2O$	1.4 (alkyne)	5	100	N[c]	[66]
Carbon nanotubes[g]	25	H_2O	1.1 (alkyne)	0.8	95	0.55	[67]
-[g, j]	115	DMF/ H_2O	2 (azide)	0.7	64	N[c]	[70]
-	25	H_2O/tBuOH	2 (alkyne)	18	80	N[c]	[71]
-[h]	25	H_2O/tBuOH	-	2	92	N[c]	[72]
-	65	THF	-	0.17	98	N[c]	[73-74]
PVP	25	Formamide	-	0.33	91	N[c]	[77]
PVP	25	H_2O/ionic liquid	-	0.3	89	N[c]	[78]
Al_2O_3	25	H_2O	-	3	92	10.9	[79]
AlO(OH)	25	Hexane	1.1 (azide)	6	94	0.62	[80]
Cu flow reactor[b, g, k]	150	DMF	2 (azide)	0.08	72	N[c]	[83]

a. Propargyl phenol ether is used as an alkyne.
b. Continuous reaction.
c. Not available.
d. 3-Methyl-1-butyn-3-ol is used as an alkyne.
e. Microwave-assisted reaction.
f. Mmol Cu per 50 beads.
g. *In situ* generation of organic azide.
h. Propargyl alcohol is used as an alkyne.
i. Methyl propiolate is used as an alkyne.
j. 2-Bromoethanol is used as organic halide.
k. 4-Ethynyltoluene is used as an alkyne; ethyl iodide is used as organic halide.

Note on the table: This table presents only the reaction conditions and results for the model click reaction of benzylazide and phenylacetylene. The reader should be careful not only to look to this model reaction when comparing different solid supports, since the result can vary drastically in case that another type of azide or alkyne is used. Even in the case of the model click reaction, it is already difficult to compare the results because the experimental conditions can differ a lot.