Ultrasound accelerated sulfonylation of amines by *p*-acetamidobenzenesulfonyl chloride using Mg-Al hydrotalcite as an efficient green base catalyst

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***N*-cyclohexyl 4-(acetamido)benzenesulfonamide**

N-phenyl 4-(acetamido)benzenesulfonamide

N-sec-butyl 4-(acetamido)benzenesulfonamide

***N*-(3,5-bis(trifluoromethyl)phenyl) 4-(acetamido)benzenesulfonamide**

N-(3,5-bis(trifluoromethyl)phenyl) 4-(acetamido)benzenesulfonamide

***N,N*-bis(4-acetamidobenzenesulfonyl)-2-aminothiazole**

N,N-bis(4-acetamidobenzenesulfonyl)-2-aminothiazole

DEPT90

DEPT135

CH&CH3 *CH2*

C13CPD

N,N-bis(4-acetamidobenzenesulfonyl)-2-aminothiazole

N,N-bis(4-acetamidobenzenesulfonyl)-2-aminothiazole

N,N-bis(4-acetamidobenzenesulfonyl)-2-amino-5-methylthiazole

N,N-bis(4-acetamidobenzenesulfonyl)-2-amino-5-methylthiazole

N,N-bis(4-acetamidobenzenesulfonyl)-2-amino-5-methylthiazole

N,N-bis(4-acetamidobenzenesulfonyl)-2-amino-5-methylthio-1,3,4-thiadiazole

N,N-bis(4-acetamidobenzenesulfonyl)-2-amino-5-methylthio-1,3,4-thiadiazole

N,N-bis(4-acetamidobenzenesulfonyl)-2-amino-5-methylthio-1,3,4-thiadiazole

DEPT90

2-(4-aminobenzenesulfonylamido)thiazole

2-(4-aminobenzenesulfonylamido)thiazole

2-(4-aminobenzenesulfonylamido)-5-methylthiazole

2-(4-aminobenzenesulfonylamido)-5-methylthiazole

2-(4-aminobenzenesulfonylamido)-5-methylthio-1,3,4-thiadiazole

2-(4-aminobenzenesulfonylamido)-5-methylthio-1,3,4-thiadiazole

N-cyclohexyl 4-(acetamido)benzenesulfonamide

E:\2013\...\SPTH\07\ANILIN_130707223413

RT: 0.00 - 10.00

NL:
8.93E8
TIC MS
ANILIN_130
707223413

ANILIN_130707223413 #433-482 RT: 3.73-4.15 AV: 50 SB: 712 1.59-3.58 , 4.85-8.99 NL: 1.41E8
T: + c ESI Q1MS [100.000-350.000]

N-Benzyl 4-(acetamido)benzenesulfonamide

E:\2013\THANG07\SPTH\07\BENZYL

RT: 0.00 - 10.00

BENZYL #465 RT: 4.01 AV: 1 SB: 712 1.59-3.58, 4.85-8.99 NL: 3.47E8
T: + c ESI Q1MS [100.000-350.000]

N-(3,5-bis(trifluoromethyl)phenyl) 4-(acetamido)benzenesulfonamide

RT: 0.00 - 15.00 SM: 15G

NL:
7.82E6
TIC MS
SAMPLE5A
02

SAMPLE5A02 #230-246 RT: 4.32-4.62 AV: 17 SB: 116 1.62-3.79 NL: 8.59E5
T: - c ESI ms2 425.00@50.00 [100.00-550.00]

N-(sec-butyl) 4-(acetamido)benzenesulfonamide

E:\2013\THANG07\SPTH\07\BUTYL

RT: 0.00 - 10.00

BUTYL #402 RT: 3.46 AV: 1 SB: 712 1.59-3.58, 4.85-8.99 NL: 7.06E6

T: + c ESI Q1MS [100.000-350.000]

BUTYL #427-474 RT: 3.68-4.08 AV: 48 SB: 712 1.59-3.58, 4.85-8.99 NL: 2.54E8

T: + c ESI Q1MS [100.000-350.000]

BUTYL #948 RT: 8.18 AV: 1 SB: 712 1.59-3.58, 4.85-8.99 NL: 3.79E7

T: + c ESI Q1MS [100.000-350.000]

N,N-bis(4-acetamidobenzenesulfonyl)-2-aminothiazole

RT: 0.00 - 20.02 SM: 15G

NL:
7.36E8
TIC MS
1105130-
01 30min
cot supelco

1105130-01 30min cot supelco #587-638 RT: 10.89-11.84 AV: 52 SB: 593 6.87-10.52, 12.71-20.02 NL: 6.19E7
T: + c ESI Q1MS [100.00-550.00]

***N,N*-bis(4-acetamidobenzenesulfonyl)-2-amino-5-methylthiazole**

RT: 0.00 - 7.08

NL:
6.49E6
TIC MS
sample2a0
3

N,N-bis(4-acetamidobenzenesulfonyl)-2-amino-5-methylthio-1,3,4-thiadiazole

RT: 0.00 - 15.00 SM: 15G

NL:
3.07E6
TIC MS
sample4a0
4

sample4a04 #177-194 RT: 3.33-3.65 AV: 18 NL: 1.48E6
T: + c ESI ms2 542.00@25.00 [100.00-550.00]

2-(4-aminobenzenesulfonylamido)thiazole

RT: 0.00 - 8.01 SM: 15G

NL:
1.24E8
TIC MS
sample 01

sample 01 #289-320 RT: 3.07-3.40 AV: 32 NL: 2.98E7
T: + c ESI ms2 256.00@25.00 [50.00-260.00]

2-(4-aminobenzenesulfonylamido)-5-methylthiazole

RT: 0.00 - 8.01 SM: 15G

NL:
1.60E8
TIC MS
sample 02

sample 02 #330-355 RT: 3.53-3.79 AV: 26 NL: 4.77E7
T: + c ESI ms2 270.00@25.00 [50.00-300.00]

2-(4-aminobenzenesulfonylamido)-5-methylthio-1,3,4-thiadiazole

RT: 0.00 - 8.01 SM: 15G

sample 04 #470-503 RT: 5.02-5.37 AV: 34 NL: 2.24E7
T: + c ESI ms2 303.00@25.00 [50.00-310.00]