Supporting information for the article entitled

α-Diketone Formation Accompanied by Oxidation of Sulfur Functional Group by the Reaction of *o*-Alkynylarenesulfoxide with Iodine

Shoji Matsumoto,* Hiroyuki Shibata, and Motohiro Akazome

Department of Applied Chemistry and Biotechnology, Graduate School of Engineering, Chiba University, 1-33 Yayoicho, Inageku, Chiba 263-8522, Japan

*Corresponding author: Tel.: +81-43-290-3369; fax: +81-43-290-3401;
E-mail address: smatsumo@faculty.chiba-u.jp

Table of Contents:

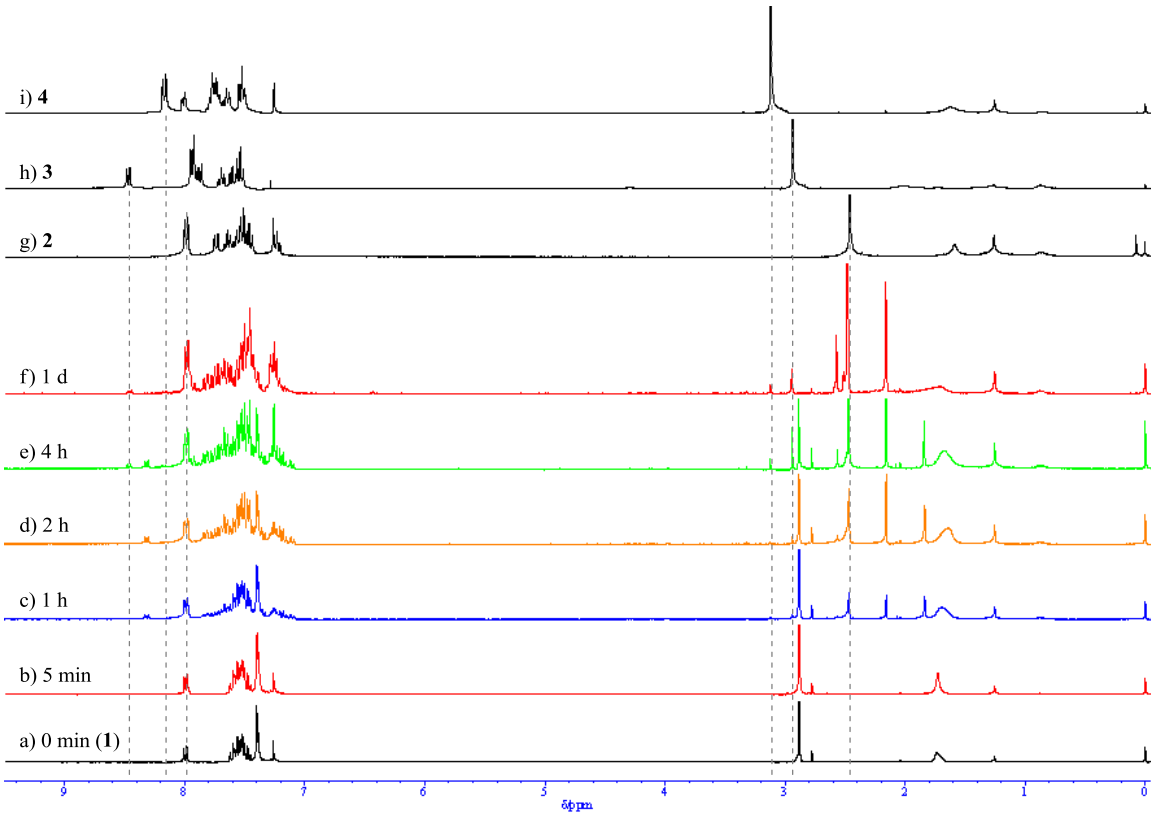
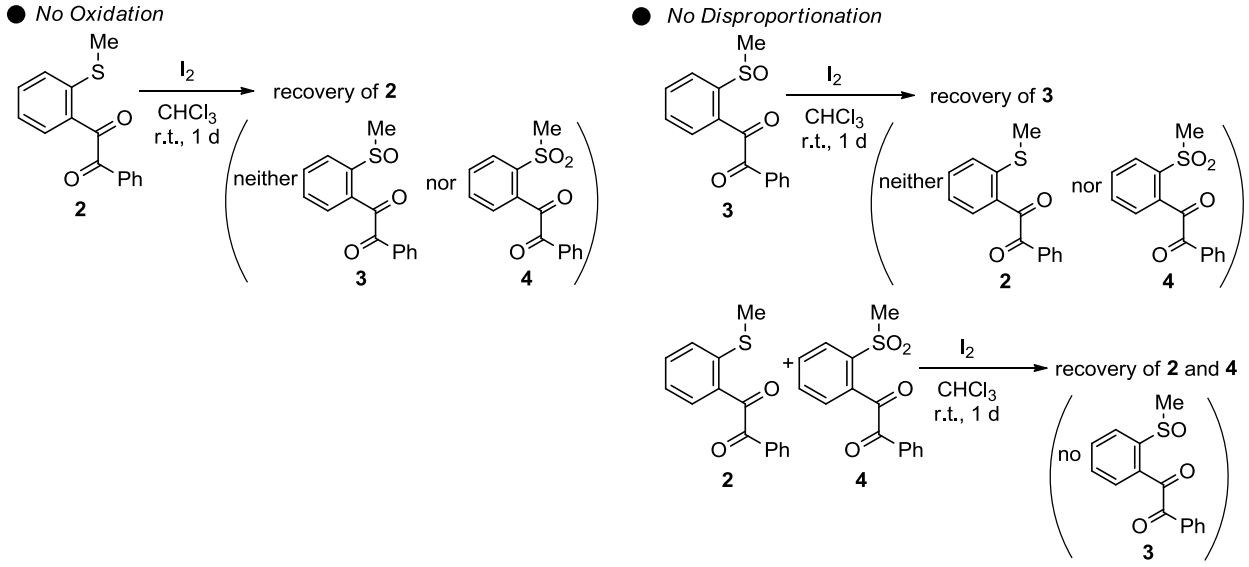
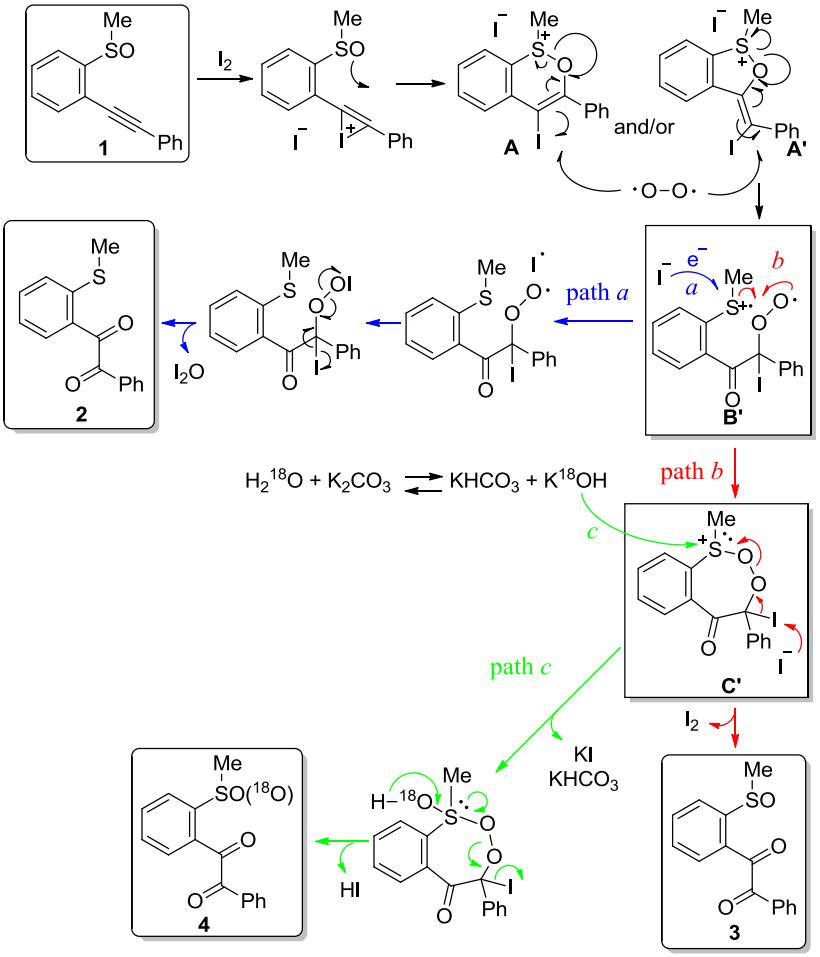


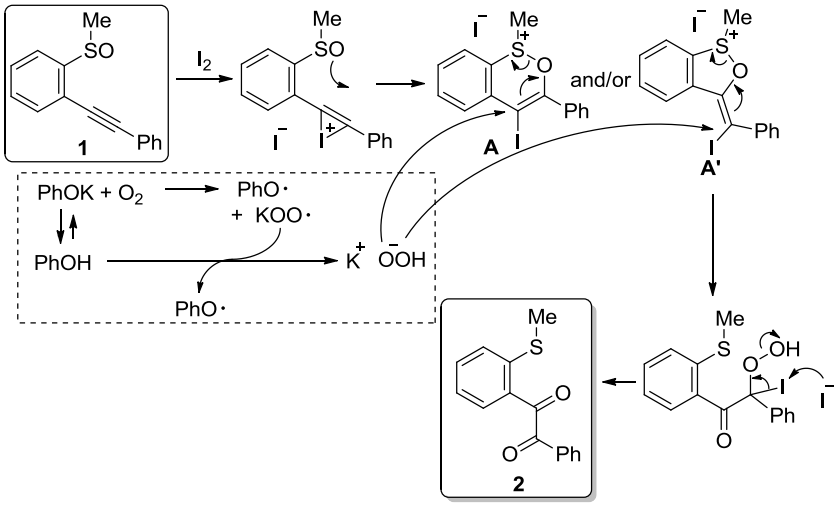
Figure S1. ^{1}H NMR analysis in the reaction of **1** with I_2 in $CDCl_3$ a) before and after addition of I_2 for b) 5min, c) 1h, d) 2 h, e) 4h, and f) 1d. The spectra of g) **2**, h), **3**, and i) **4**.



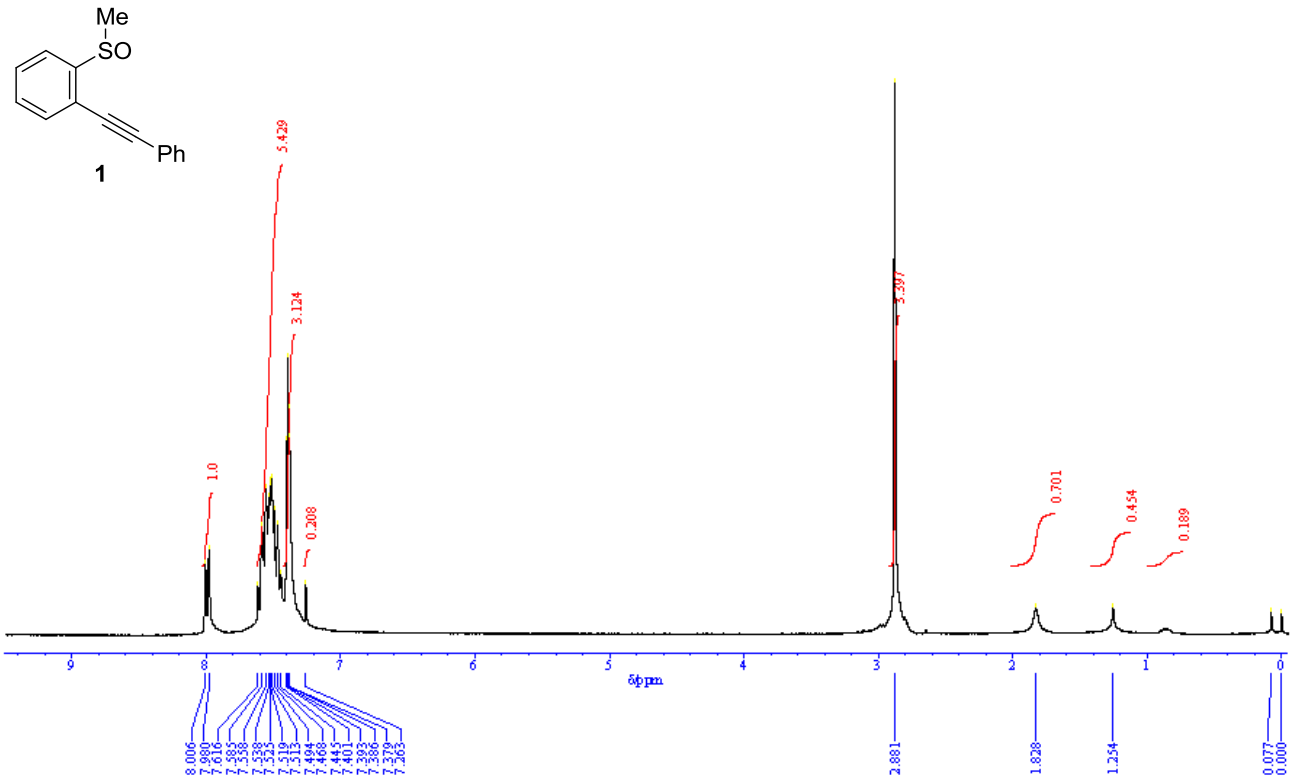
Scheme S1. Oxidation Experiment of 2. And Disproportionation Experiments of 3 and of the Combination of 2 and 4 Under Standard Conditions

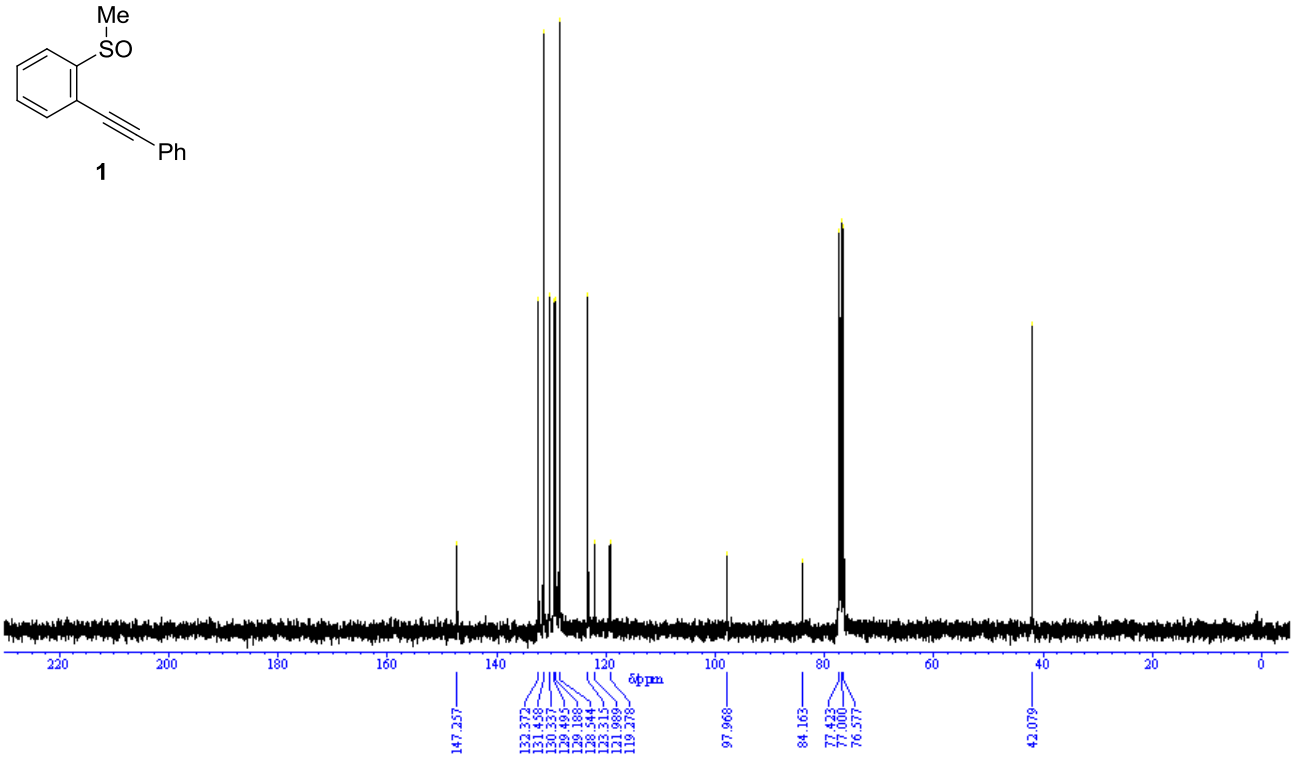


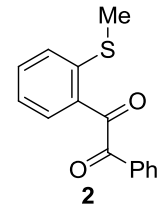
Scheme S2. Plausible Reaction Mechanism of the Formation of 2, 3, and 4 Through Intermediate A'



Scheme S3. Another Reaction Mechanism of the Formation of 2 Through Intermediate A'

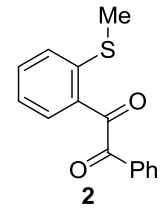

Me
SO
Ph
1
5.429
3.124
3.397
1.0
0.208
0.701
0.454
0.189
δppm
8.006
7.980
7.616
7.585
7.538
7.525
7.519
7.513
7.494
7.468
7.445
7.401
7.388
7.386
7.379
7.263
2.881
1.828
1.254
0.077
0.000


Me
SO
Ph
1
δppm
147.257
132.372
131.438
130.337
129.495
129.188
128.544
123.315
121.989
119.278
97.968
84.163
77.423
77.000
76.577
42.079


Me
S
O
O
Ph

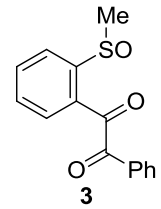
2

2.0
0.861
0.831
2.496
0.843
1.407
3.179
0.951
0.884
0.404
0.194
δppm
8.000
7.975
7.735
7.722
7.669
7.645
7.620
7.595
7.567
7.535
7.508
7.483
7.464
7.437
7.264
7.231
7.207
2.463
1.589
1.260
0.076
0.004

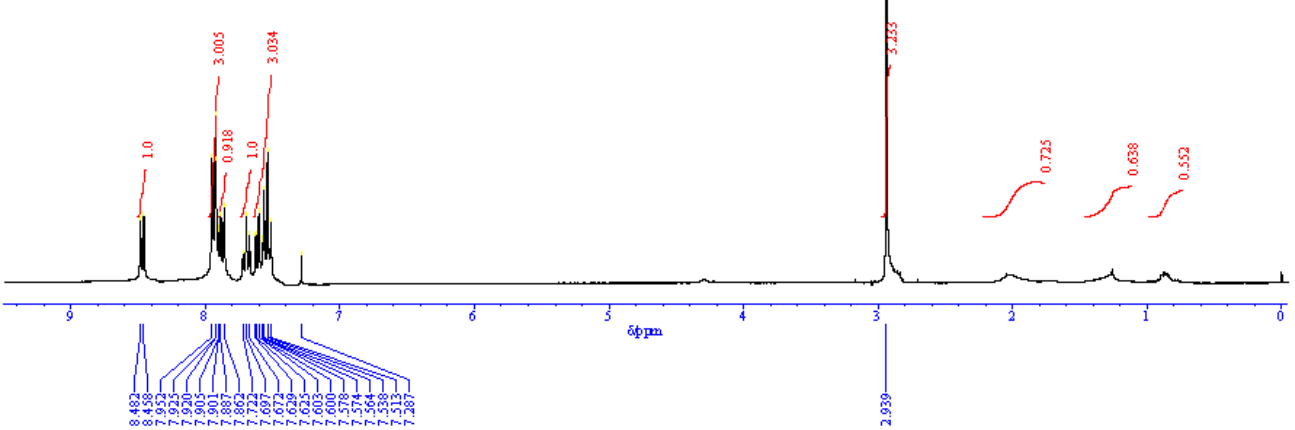

Me
S
O
O
Ph

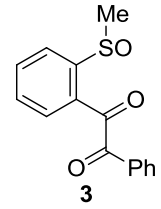
2

δppm
194.898
193.043
143.509
134.442
133.881
133.419
133.282
131.636
129.991
128.858
127.025
124.578
77.420
76.998
76.573
16.704


Me
SO
O
O
Ph

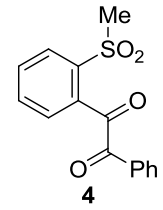
3


1.0
3.005
0.918
1.0
3.034
5.455
0.725
0.638
0.552
δppm
2.939


Me
SO
O
O
Ph

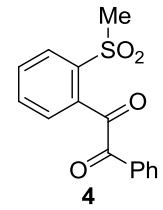
3

δppm


Me
SO2
O
O
Ph

4

2.0
0.967
3.077
0.935
2.173
0.46
3.422
1.232
0.534
0.227
0.146
δppm
3.120
1.623
1.255
0.000


Me
SO2
O
O
Ph

4

δppm
191.952
189.045
77.422
76.998
76.575
44.720