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One-pot, Pd/Cu-catalysed synthesis of alkynyl-substituted 3-ylidene-dihydrobenzo[*d*]isothiazole 1,1-dioxides

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A B S T R A C T

Enyne-substituted benzoisothiazole derivatives have been synthesised under one-pot, operationally simple conditions using 2-iodo-*N*-(trimethylsilylethynyl)benzenesulfonamides and terminal alkynes as starting materials and a palladium–copper-based catalytic system. The structure of these heterocycles has been demonstrated by NMR spectroscopy and confirmed by X-ray crystallographic analysis. A plausible reaction mechanism has been proposed.

Keywords:
Alkynes
Cyclisation
Heterocycles
Isothiazole 1,1-dioxides
Palladium

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Isothiazole (**1**, Scheme 1) (1,2-thiazole), 2-R-2*H*-1,2-thiazines (**2**), and their benzo-analogues (**3** and **4**, respectively) are privileged heterocyclic frameworks that occur in a large