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DIB promoted desulfurization under aqueous conditions: The synthesis of 5-amino-1-aryl/alkyltetrazoles from aryl/alkylthioureas

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ABSTRACT We report a metal-free and environmentally benign method for the synthesis of 5-amino-1-aryl/alkyltetrazoles from arylthioureas, utilizing diacetoxyiodobenzene as a mild and efficient oxidant under green conditions. This reaction proceeds through a sequence involving desulfurization, nucleophilic substitution, and electrocyclization to afford tetrazole derivatives. The method is efficient and provides the final products in 35–95% yields from their corresponding thiourea precursors.

KEY WORDS Hypervalent iodine, Diacetoxyiodobenzene, Arylthioureas, Aminotetrazoles, Desulfurization.

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