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SYNTHESIS OF 2-AMINO-3-[(2-NITRO-1-PHENYLPROPYL)THIO] PROPANOIC ACID DERIVATIVES AND STRUCTURE ELUCIDATION

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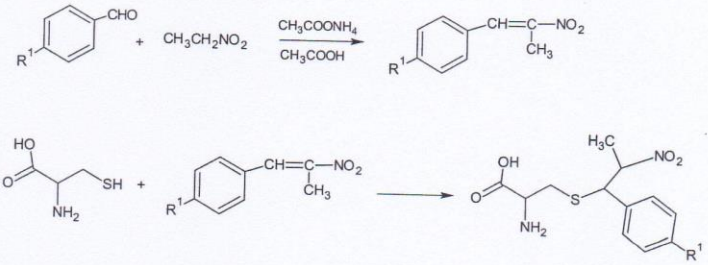
β-Methyl-β-nitrostyrenes are known for their various pharmacological activities. Particularly antibacterial, antifungal, antineoplastic, antiseptic, antiplatelet and antituberculer activity [1]. Furthermore, the addition products with a nitrostyrene moiety have been recognized to have diverse biological activities, especially antimicrobial and anticancer effects [2]. Cysteine, which is a sulfur-containing amino acid and an important structural and functional component of proteins and enzymes. Thiol group of cystein is also nucleophilic and thus can undergo addition and substitution reactions [3].



Scheme 1: Synthesis of 2-amino-3-[(2-nitro-1-phenylpropyl)thio]propanoic acid Derivatives

Michael type addition reaction of β-Methyl-β-nitrostyrenes with various aromatic and aliphatic thiol group have been investigated by our research group [4-5]. β-Methyl-β-nitrostyrene derivatives were synthesized according to literature methods using corresponding benzaldehyde derivatives and nitromethane in the presence of base [6]. The addition products of β-Methyl-β-nitrostyrene derivatives with cysteine were obtained by Michael-type addition reaction. Structures of synthesized compounds were elucidated by ^{1}H NMR, elemental analysis and mass spectra.

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Keywords: nitrostrene, cysteine, michael adducts