

# One-pot, Three-component Synthesis of 7*H*-[1,3,4]Thiadiazolo[3,2-*a*]pyridines from 2-Phenacyl-[1,3,4]thiadiazole Derivatives and Arylmethylene-cyanoacetic Acid Derivatives

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Generally, arylmethylene-cyanoacetic acid derivatives react with enols and aromatic or heteroaromatic hydroxy compounds to afford 2-amino-4*H*-pyran derivatives of type **6**. In contrast, a ring closure with the nitrogen atom of the thiadiazole ring occurs when 2-phenacyl-1,3,4-thiadiazoles (**1a–d**) act on derivatives of arylmethylene-cyanoacetic acid giving rise to the formation of 7*H*-[1,3,4]thiazolo[3,2-*a*]pyridine derivatives **5a–r**. The same products are obtained if 2-phenacyl-1,3,4-thiadiazoles react with aromatic or heteroaromatic aldehydes and cyanoacetic acid derivatives. The constitution of the novel compounds **5** has been confirmed by an X-ray analysis of **5a**.

**Key words:** 7*H*-[1,3,4]Thiadiazolo[3,2-*a*]pyridines, 2-Methyl-5-phenacyl-1,3,4-thiadiazoles, Aromatic Aldehydes, CH<sub>2</sub>-Acidic Compounds, Arylmethylene-cyanoacetic Acid Derivatives