A Novel Route to 4-Aminopyrazoles and Aminopyrazolo[4,3-b]pyridines

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3-Oxo-2-arylhydrazononitriles 6 are readily converted into 4-aminopyrazoles 1 via reaction with α-haloketones, chloroacetonitrile and ethyl chloroacetate. The aminopyrazoles are readily converted into aminopyrazolo[4,3-b]pyridines upon treatment with malononitrile. Compounds are readily diazotized to yield unstable diazonium salts that readily cyclized into pyrazolo[4,3-c]pyridazines.

Key words: 2-Arylhydrazononitriles, Aminopyrazoles, α-Haloketones, Aminopyrazolo[4,3-b]pyridines, Pyrazolo[4,3-c]pyridazine