

# A Convenient Regioselective Synthesis of 6-Amino-2-oxo-3,5-pyridinedicarbonitriles

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Reaction of cyanoacetohydrazones **3a,b** with a variety of arylidenemalononitriles **5a – c** under the effect of piperidine basic catalysis afforded exclusively the corresponding 6-amino-1,2-dihydro-1,4-disubstituted-2-oxo-3,5-pyridinedicarbonitriles **6a – f** in high regioselectivity. A chemical confirmation for the proposed structure was achieved through the reaction of ylidenes **8** with malononitrile under basic conditions, which yielded the corresponding **6** accompanied with **3**. Refluxing **3b** in acetic anhydride gave 2-acetyl-3-cyanomethyl-4,5-dihydro-2*H*-benz[*g*]indazole (**10**) as the only isolable product. Single crystal X-ray diffraction of **6e** and **10** add conclusive support for the established structures.

*Key words:* Arylidenemalononitriles, 3,5-Pyridinedicarbonitriles, Cyanoacetohydrazones, 2*H*-Benz[*g*]indazoles, Michael Reaction