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# Dialkyl(2,3-epoxy-4-oxoalkyl)phosphonates as Versatile Synthons for Heterocyclic Compounds

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The new title compounds (1) - prepared by two independent ways starting from dialkyl (formylmethyl)phosphonates - react with ambident nucleophiles (thioamides, 2-mercaptoazoles...) either to the (2-hetaryl-2-hydroxyethyl)phosphonates (2) or directly to the hetarylvinylphosphonates (4), which can further be transformed into the phosphonates (5) or (7), and into the phosphorus-free heterocycles (3), (6) and (8), as shown in the scheme. Pd(0)-catalyzed rearrangement of the epoxyphosphonates (1) leads to the new (2,4-dioxoalkyl)phosphonates (9), which allow the synthesis of various hetarylmethylphosphonates (10).

