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Synthesis of α-amino phosphonates catalyzed by bifunctional cyclohexane derived thiourea organocatalyst

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Multicomponent phosphonylation is accomplished by convenient and efficient synthetic method using novel (S)-N-((cyclohexylmethyl) carbamothioyl) pyrrolidine-2-carboxamide (NCCPC) as bifunctional cyclohexane derived thiourea organocatalyst upon the reaction of an amine, substituted aldehyde with diethyl phosphite. This method not only provides novel and excellent complement for the synthesis but also gives green and transition-metal-free protocol, shows a broad substrate scope, providing a variety of α-amino phosphonates in moderate to good yields.

Keywords: Multicomponent phosphorylation, Thiourea organocatalyst, NCCPC, α-amino phosphonates