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Green Synthesis of *N*-Phosphono-Amino Acids by Trimetaphosphate (P3m)

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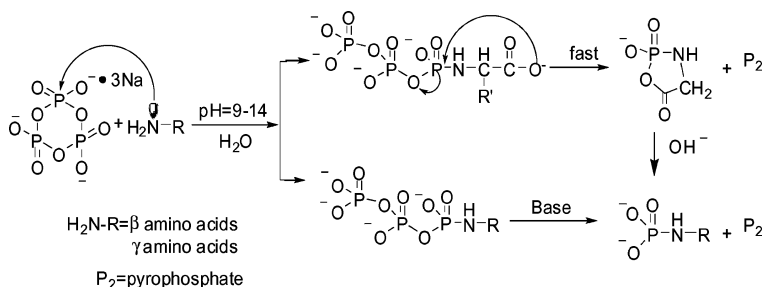
Green Synthesis of *N*-Phosphono-Amino Acids by Trimetaphosphate (P3m)

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Keywords Green synthesis; N-phosphono-Amino acids; Trimetaphosphate

Inspired by the reactivity study between sodium trimetaphosphate and amino-containing compounds,^{1–5} a green synthesis method with organic reagent free and efficient purification procedure was developed for the synthesis purpose of *N*-phosphono-amino acids. The synthesis used sodium trimetaphosphate (P3m), a cheap and easily available phosphate, as the phosphorylation reagent and came out with target compounds (*Isolated yield: 60 ~ 90%*) and inorganic phosphates, later of which could be recycled to produce P3m.



SCHEME 1

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REFERENCES

- [1] M. Tsuhako, N. Fujita, A. Nakahama, T. Matsuo, M. Kobayashi, and S. Ohashi, *Bull. Chem. Soc. Jpn.*, **53**, 1968 (1980).
- [2] M. Tsuhako, A. Nakajima, T. Miyajima, S. Ohashi, H. Nariai, and I. Motooka, *Bull. Chem. Soc. Jpn.*, **58**, 3092 (1985).
- [3] M. Tsuhako, C. Sueyoshi, T. Miyajima, S. Ohashi, H. Nariai, and I. Motooka, *Bull. Chem. Soc. Jpn.*, **59**, 3091 (1986).
- [4] H. Inoue, Y. Baba, T. Furukawa, Y. Maeda, and M. Tsuhako, *Chem. Pharm. Bull.*, **41**, 1895 (1993).
- [5] H. Inoue, H. Nakayama, and M. Tsuhako, *Phos. Res. Bull.*, **12**, 65 (2001).