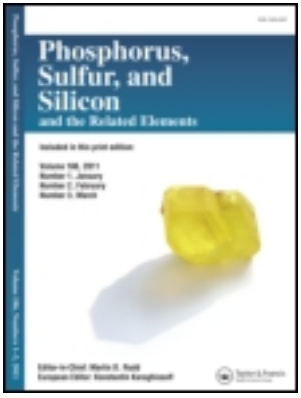

Phosphorus, Sulfur, and Silicon and the Related Elements
Publication details, including instructions for authors and subscription information:
http://www.tandfonline.com/loi/gpss20

Synthesis and Biological Activity of A-Hydroxyphosphonates

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Published online: 21 Jun 2008.

To cite this article: Na Zuo & Hong-wu He (2008) Synthesis and Biological Activity of A-Hydroxyphosphonates, Phosphorus, Sulfur, and Silicon and the Related Elements, 183:2-3, 621-622, DOI: 10.1080/10426500701793279

To link to this article: http://dx.doi.org/10.1080/10426500701793279

Phosphorus, Sulfur, and Silicon, 183:621–622, 2008

ISSN: 1042-6507 print / 1563-5325 online
DOI: 10.1080/10426500701793279

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Synthesis and Biological Activity of A-Hydroxyphosphonates

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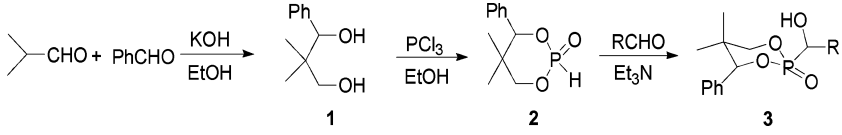
Ten α-hydroxyphosphates were synthesized and the preliminary bioessay indicated that these compounds exhibited certain herbicidal activities.

Keywords α-hydroxyphosphonates; synthesis; herbicidal activity

Some hydroxyphosphonates and its derivatives have shown good biological and pharmaceutical activities. In continuation of our work, a number of α-hydroxyphosphnates have been synthesized.**1** and **2** was prepared according to the literature procedures. **2** was reacted with various aldehydes by the Pudovik reaction to form the title compounds **3** in good yields (80–90%). Triethylamine was used as catalyst. The best reaction time was 2–3 h and the temperature was 25°C. All 10 compounds were confirmed by ^{1}H NMR, IR and element analysis, and one was examined by the single crystal X-ray diffraction. The results of preliminary bioassay indicated that the title compounds exhibited certain herbicidal activities. Some α-hydroxyphosphonates and its derivatives have shown good biological and pharmaceutical activities.[1–3] **1** and **2** was prepared according to the literature procedures.[4,5]



1 2 3

SCHEME 1

Financial support was provided by the National Basic Research Program of China (2003CB114400) and NNSF of China (20372023).

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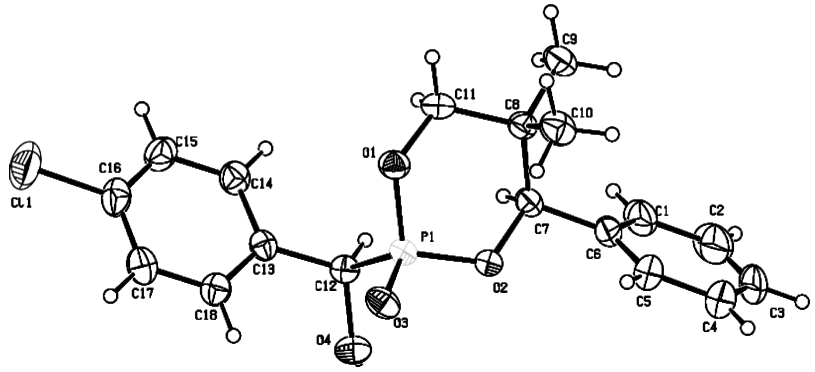
R=alkyl, Ph, substituted Ph, Furfuryl



SCHEME 2

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