

## عنوان مقاله:

One pot Facile Synthesis of Anti-microbial  $\beta$ -Lactam Derivatives Catalysed by Fe(acac)<sub>3</sub>

## محل انتشار:

نشریه متدهای شیمیایی، دوره 3، شماره 2 (سال: 1398)

تعداد صفحات اصل مقاله: 15

## نویسندگان:

Manojkumar U. Chopade - *Sant Dnyaneshwar Mahavidyalaya, Department of Chemistry, Soegaon, Dist: Aurangabad  
۴۳۱۱۲۰ India* Department of Chemistry, Savitribai Phule University, Pune

Harshal S. Patil - *Moreshwar Arts, Science & Commerce College, Bhokardan, Dist: Jalana*

Milind D. Nikalje - *Department of Chemistry, Savitribai Phule University, Pune*

Anil U. Chopade - *Dahiwadi College, Dahiwadi, Rayat Shikshan Sansthan, Satara, Shivaji University Kolhapur ۴۱۵۵۰۸*

## خلاصه مقاله:

We have developed novel route for the synthesis of  $\beta$ -Lactam by Fe(acac)<sub>3</sub> based catalytic system with > 90% yield. It is one pot Knoevenagel condensation of aldehyde with ethyl cyanoacetate followed by chemoselective reduction of the nitrile substituted C=C bond and nitrile functional group with sodium borohydride. Anti-microbial activity of the compounds exhibited at lower concentration against gram positive, gram negative bacteria and yeast with minimum inhibitory concentration (MIC) as low as 16  $\mu$ g/mL. Compound have low hemolytic activity at their respective MIC. These derivatives might be liable to be increase the permeability of the bacterial cell membrane, which was demonstrated by DAPI, FITC, PI uptake studies and atomic force microscopy imaging of the treated cells. One pot .synthesis with anti-microbial activity of  $\beta$ -Lactam derivatives can be helpful to developed effective antibacterial agents

## کلمات کلیدی:

Fe(acac)<sub>3</sub>, Knoevenagel condensation,  $\beta$ -Lactam, anti-microbial, FITC, AFM

## لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/940612>

