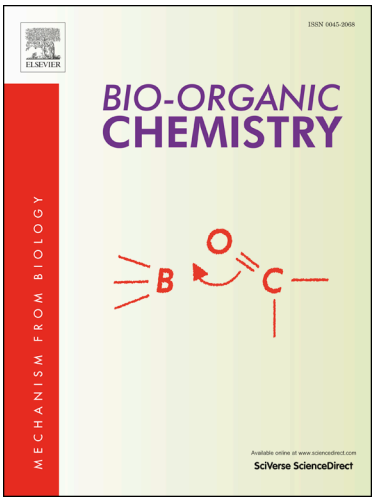

New advances in synthesis and clinical aspects of pyrazolo[3,4-*d*]pyrimidine scaffolds

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PII: S0045-2068(17)30925-2
DOI: https://doi.org/10.1016/j.bioorg.2018.03.032
Reference: YBIOO 2322

To appear in: *Bioorganic Chemistry*

Received Date: 4 December 2017
Revised Date: 17 March 2018
Accepted Date: 31 March 2018

Please cite this article as: K. R. A. Abdellatif, R.B. Bakr, New advances in synthesis and clinical aspects of pyrazolo[3,4-*d*]pyrimidine scaffolds, *Bioorganic Chemistry* (2018), doi: https://doi.org/10.1016/j.bioorg.2018.03.032

New advances in synthesis and clinical aspects of pyrazolo[3,4-*d*]pyrimidine scaffolds

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Key words: pyrazolo[3,4-*d*]pyrimidine; Anti-inflammatory; Anticancer agents; antimicrobial.

Abstract

Pyrazolo[3,4-*d*]pyrimidine ring system constitute an important class of heterocyclic compounds which can serve as a promising scaffold exhibiting many pharmacological activities. This ring system received much attention as it is a purine isostere by replacing imidazole ring in purine with pyrazole moiety in pyrazolo[3,4-*d*]pyrimidine. Here we concentrate on new advances in the synthesis of this important ring and other clinical aspects in an attempt to sheld the light to assist in discovery of new pyrazolo[3,4-*d*]pyrimidine derivatives.

1. Introduction

Fusing pyrazole scaffold with pyrimidine moiety furnished many pyrazolopyrimidine rings isomers like pyrazolo[5,1-*b*]pyrimidines [1-3], pyrazolo[3,4-*d*]pyrimidines [4-8], pyrazolo[1,5-*a*]pyrimidines [9-12] and pyrazolo[4,3-*d*]pyrimidines [13-15] which considered as important fused heterocyclic systems that had been widely studied for both chemical and pharmacological points of view.

Pyrazolo[3,4-*d*]pyrimidine ring system drawn much attention as it is considered as purine isostere [16-19] and was recorded in literature to exhibit many pharmacological activities as antimicrobial [20-25], antiviral [26-30], anticancer [8, 31-43],