SEPTEMBER 23-27 2024
19BMOS
BRAZILIAN MEETING ON ORGANIC SYNTHESIS
BENTO GONÇALVES, RS - BRAZIL

# Synthesis of Adenine and 1,3-Diphenylurea Hybrids as Potential Kinase Inhibitors for Cancer Treatment

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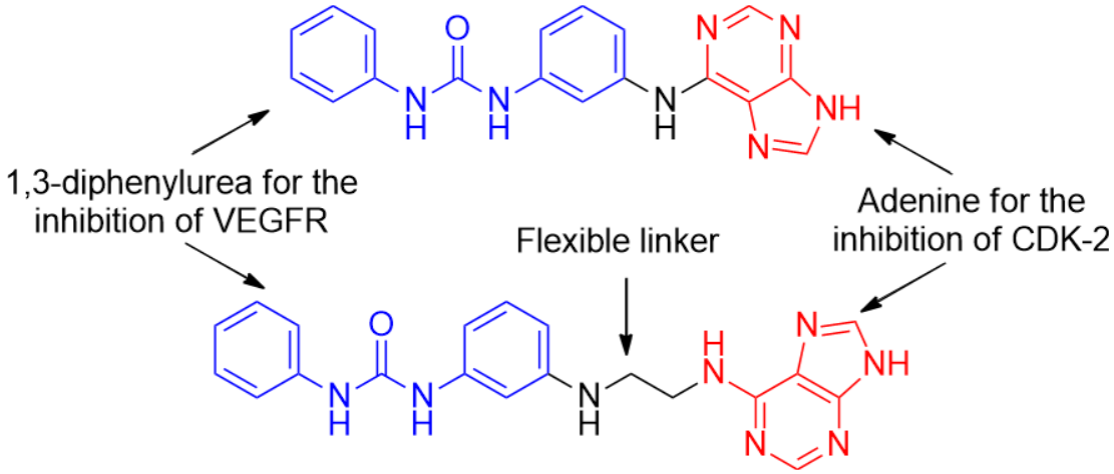
Keywords: *Cancer; Targeted Anticancer Therapy; Hybridization.*

## ABSTRACT

According to the estimation of the International Agency for Research on Cancer[1] it is predicted there will be 28 million new cancer cases worldwide each year by 2040, if incidence remains stable and population growth and aging continues in line with recent trends. Therefore, there is a constant need for development of new targeted drugs that are potent and selective to cancer cells. In this context, heterocyclic compounds form the structural scaffold of contemporary anticancer therapy that has led to the development of roughly 40 kinase inhibitors that received FDA approval over the past 3 decades.[2] The 1,3-diphenylurea nucleus is present in the drug Sorafenib, an oral multikinase inhibitor that can suppress tumor cell proliferation,[3] angiogenesis and induce cancer cell apoptosis. In this work, we look to synthesize potential kinase inhibitors by hybridization of 1,3-diphenylurea and adenine by linking them directly or through a flexible linker.




Scheme - Structure of hybrid target molecules and their potential inhibition activity.

## ACKNOWLEDGEMENTS

We would like to thank the Institute of Chemistry of UFRGS (http://www.iq.ufrgs.br) for the opportunity and the infrastructure necessary for this work and the funding agencies CNPq, CAPES and FAPERGS for their support of this work.

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