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New more polar symmetrical choline kinase inhibitors II: study of setting up a new scaffold for the cancer therapy

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Research into the anti-tumour properties of biscationic compounds has received significant attention over the last few years. In the challenge to improve modern cancer chemotherapy, the search of new drugs with higher therapeutic index and lower capacity to induce resistance is an active field of investigation in medicinal chemistry. As part of our drug research program in searching modified biscationic compounds that show strong growth inhibitory activities against a two cancer cell lines,^{1,2} we were interested in more polar biscationic compounds derivatives, which should constitute an important class of new compounds for their potential pharmaceutical applications.

A novel family of 1,1'-[biphenyl-4,4'-diylid(methylene)]dipyridinium salts containing a pair of pyridines as linker of the framework of the biscationic compounds, like hypothetical hydrogen bond acceptors with the enzyme choline kinase, were synthesized and they are being evaluated as inhibitors of choline kinase. Their antiproliferative activity will be evaluated in the future as well.

References

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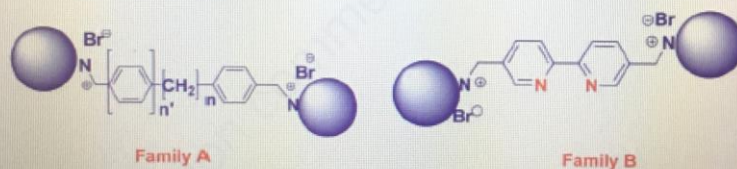


Figure 1. General structures of symmetrical biscationic inhibitors of choline kinase Family A was previously published.¹⁻³ Family B is described in this work.

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