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## DEVELOPMENT OF BENZOXAPHOSPHEPINE 2-OXIDES AS CARBONIC ANHYDRASE INHIBITORS

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Carbonic anhydrases (CA, EC 4.2.1.1) are essential metalloenzymes found across all kingdoms of life. These enzymes are involved in many important physiological processes, as they catalyse the reversible hydration of carbon dioxide [1]. To date, 15 different human CA isoforms have been identified, out of which CA IX and XII isoforms are highly overexpressed in different tumour types and may contribute to the progression of cancer [2]. Therefore, there is a particular need to develop potent and selective CA inhibitors.

Herein we report our results on the development of a new class of CA inhibitors – benzoxaphosphepine 2-oxides. Aforementioned compounds showed a remarkable selectivity and good activity against the tumour-associated isoforms CA IX and XII [3]. Furthermore, these compounds can be used as starting points for the design of more potent CA IX/XII inhibitors.

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