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Recent Advances in the Chemistry and Synthesis of Thienopyrazine, Pyrrolopyrazine and Furopyrazine Derivatives

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Abstract:

Bicyclic compounds derived from pyrazine and aromatic five-membered heterocycles including thiophene, furan and pyrrole show various biological and pharmacological properties, such as anti-inflammatory, antiviral, antitumor, antioxidant, antimycobacterial, and cytostatic activities. In many cases, it has been demonstrated that there are more potent cytostatic and cytotoxic agents against human tumor cell lines, leukemia, colon cancer, central nervous system cancer, melanoma, ovarian cancer, prostate cancer and breast cancer. They are also useful precursors for the large scale preparation of inorganicorganic hybrid solar cells, suitable acceptors for the synthesis of low-band gap polymers. They use ligands for serotoninergic 5-HT7 receptor and are effective in neurogical and psychiatric diseases, antimalarial, neuroleptic and cardiovascular. The absence of any useful review concerning the chemistry and synthesis of the above-mentioned heterocyles encouraged us to underscore the recent advances in chemistry and synthetic approaches leading to the preparation of thienopyrazines, pyrrolopyrazines and furopyrazines since 1990.

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