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New bis-pyridazine derivatives: Synthesis, structure and their potential interest in leishmaniasis

Dorina Amariuca-Mantu¹, Vasilichia Antoci¹, Philippe M Loiseau², Sandrine Cojean² and Ionel I Mangalagiu¹

¹Alexandru Ioan Cuza University of Iasi, Romania

²Université Paris-Sud, France

Leishmaniasis is a parasitic disease which affects over one million people worldwide. It is transmitted by certain types of sandflies and is closely associated with poverty. The most common form of the disease is the cutaneous leishmaniasis. Current treatments, including pentamidine and imidazoquinolines, are used for treatment of cutaneous disease; however, they have some limitations due to their toxicity, relatively high cost and drug resistance. Nitrogen heterocyclic compounds are invaluable constituents of molecules with various biological importance's, being essential components in drug designing programs. The emphasis of the current research work consists the design, synthesis, characterization and antileishmanial activity evaluation of a new class of nitrogen heterocyclic derivatives, new bis-pyridazine molecules (BP) and structurally related to pentamidine. Three new classes of BP-derivatives were designed (BP I-III), their synthesis being straightforward and efficient. The BP-I derivatives were obtained through an N-alkylation of the starting BP heterocycle, which subsequently, by substitution with hydrazine conducted to BP-II derivatives. A final condensation with aromatic aldehydes yielded the BP-III class of compounds.

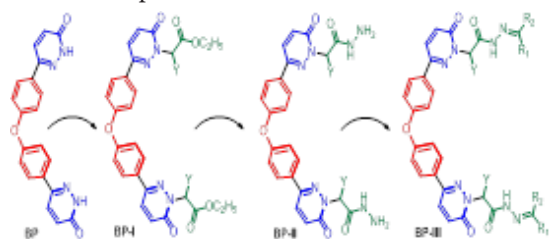


Figure: The structures of the new BP-derivatives were elucidated by elemental and spectral analysis: IR, NMR (1H-, 13C- and 2D-experiments), X-ray analysis on monocrystal including. The antileishmanial assay against *Leishmania donovani* intramacrophage amastigotes revealed a very good and promising activity for some BP compounds.

Biography

Dorina Amariuca-Mantu is a Lecturer at Alexandru Ioan Cuza University of Iasi, Romania. She has completed her PhD and Post-doctoral studies at the same university. She has published more than 25 papers in reputed journals and has been serving as an Editorial Board Member of repute.

dorina.mantu@uaic.ro

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