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Synthesis and evaluation of new thienopyrimidine/pyridine derivatives as anti-tumoral and/or anti-angiogenics

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New thieno [3,4-d] pyrimidines and thieno [3,2-b] pyridines were prepared, fully characterized and evaluated as anti tumor compounds against various human tumor cell lines and/or as anti angiogenics using HUVECs (Human Endothelial Vein Umbilical Cells) that express the VEGFR2 (Vascular Endothelium Growth Factor Receptor-2) which is a trans-membrane tyrosine kinase receptor involved in angiogenesis. Some of our compounds were shown to be active against several human tumor cell lines with low to moderate IC50 values and for the most promising compounds the effects on the cell cycle profile and the induction of apoptosis were studied. The toxicity of these compounds was also studied using a primary porcine liver cell culture established by our group. Some of the compounds prepared, suggested by rational design, were shown to be inhibitors of the phosphorylation of the intracellular domain of tyrosine kinase of the VEGFR2. This mechanism of action of the evaluated anti-proliferation of HUVECs by the BrdU assay in the presence of the compounds was confirmed using Western Blot.

Biography

Maria-Joao R P Queiroz has completed her first degree in Pharmaceutical Sciences in the University of Porto-Portugal (1986), PhD in Organic Chemistry (1993) in the University of Minho- Portugal and carried out Postdoctoral studies in the University of Metz-France (1994). She is a Coordinator Researcher since June 2009 and was the Director of the Chemistry Research Centre of the University of Minho from January 2010 to March 2015. She has published more than 110 papers in reputed journals of Organic Chemistry and Medicinal Chemistry and attended more than 150 conferences around the world. She was also responsible for several financed projects in medicinal chemistry coordinating different teams.

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