Dunya Lafta Mohammed Al-Duhaidahawi, Pharm Anal Acta 2016, 7:1 (Suppl)
http://dx.doi.org/10.4172/2153-2435.C1.028

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8th International Conference and Exhibition on

Pharmaceutics & Novel Drug Delivery Systems

March 07-09, 2016 Madrid, Spain

Synthesis of new benzimidazole and benzothiazole disulfide metal complexes as G-quadruplex intercalating ligands

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Compounds could bind and stabilize non-canonical DNA structure named Quadruplex have a valuable interest in anticancer drug design due to their selective inhibition of telomerase and consequent effect on cell proliferation. In this study, we report novel Co/Cu [II] complex compounds as G-Quadruplex DNA binding ligands. The results from preliminary assay indicated that introducing positively charged 6-membered tail to aromatic terminal group of Benzimidazole significantly enhance the binding affinity with the quadruplex, and exhibited anti telomerase activity. These derivatives showed significant selectivity for the telomeric quadruplex over Duplex nucleic acid. The stabilization of non-canonical form estimated with FRET DNA Technology using different sequences such as F21T, c-kit1 and c-kit2 some of their effects in cancer cell line were assessed. Three members of this family showed to be very selective in stabilizing one particular G-Quadruplex.

Biography

Dunya Lafta Mohammed Al-Duhaidahawi has completed her PhD from Baghdad University School of Pharmacy. She is the Lecturer of undergraduate program at Kufa University. She has published more than 8 papers in reputed journals and has been serving as an Editorial Board Member of *Iraqi Pharmaceutical Journal*.

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