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Team drug safety: Identifying the player and understanding their roles

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In sports, teams are made of players that have specific responsibilities in ensuring the team's success. In order to work most efficiently and effectively, the players must communicate and strategize with each other and not operate completely independently. Drug Safety plays a very vital role throughout a product lifecycle, however many departments in an organization are not sure what Drug Safety's roles and responsibilities are and consequently do not include them in planning and strategizing activities. By using the concept of a team, this presentation will identify who the players are that make up "Team Drug Safety" (i.e. Regulatory Affairs, Data Management, Clinical Operations, etc.), what their role is and how they help the team achieve success within the Drug Safety arena. Areas that will be covered in the presentation include the following: The importance of communication among all the players (i.e. departments), provide some "real life" examples of what can happen if there is a lack of communication, suggestions and recommendations on how to improve collaboration and information sharing by using technology that is already being used in an organization.

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Interactions of 1-amino-4-hydroxy-9, 10-Anthraquinone, an analogue of Anthracycline anticancer drugs, and its Copper complex with DNA and Surfactant micelles explore its induction of Apoptosis in human MDA-MB-231 breast Adinocarcinoma cells: Evaluation of structure - activity relationship using computational, spectroscopic and biochemical studies

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Anthracycline drugs are chemotherapeutic agents that are in use for the treatment of various human cancers. However, this category of drugs is so expensive that most patients belonging to the developing countries cannot afford to practice these drugs. Therefore, efforts are presently afoot to evaluate new but comparatively less expensive substitutes of the known forms of these drugs which is why in the present study we chose 1-amino-4-hydroxy-9, 10-anthraquinone (QH) and its copper complex (CuQ2). The electronic and molecular structures of the molecules were analyzed by theoretical studies such as DFT, NBO, VEDA, TDDFT, etc., and corroborated with the experimental findings. Various physicochemical and biochemical aspects of these molecules such as electrochemical behavior, enzymatic studies, DNA interaction and aspects of hydrophobic and hydrophilic interaction with micelles as model for biomembrane were studied by using different techniques as these are important for the drug action for this class of molecules. Finally the compounds were applied to human breast adinocarcinoma cell MDA-MB-231 in order to check their biological efficacy. It was found that the molecules induce apoptosis in this adinocarcinoma cell, with little, if any; cytotoxic effect in HBL-100 normal breast epithelial cell and CuQ2 brings a better apoptotic action in comparison to QH. The electrochemical aspects, structural characteristics and the affinity of the molecules to interact with DNA and micelles possibly play a role behind their action as a potent antitumor agent and this may raise the hope that these molecules may be used as antitumor drugs in near future.

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