Review of: "A Novel One-Pot Three-Component Approach to Orthoaminocarbonitrile Tetrahydronaphthalenes Using Triethylamine (Et_3N) as a Highly Efficient and Homogeneous Catalyst Under Mild Conditions and Investigating Its Anti-cancer Properties Through Molecular Docking Studies and Calculations"

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Potential competing interests: No potential competing interests to declare.

Comment 1: There is a lack of correlation between the textual abstract and the graphical abstract. In the textual abstract, the authors state the computational investigations of the synthesized compounds, but the graphical abstract does not reflect any computational studies.

Comment 2: In the introduction section, the literature references have been cited in the text in clusters such as [1][2][3] and [4][5][6][7], etc., after specific intervals. However, much important information within the text lacks literature citations.

Comment 3: In the introduction section, the text “multicomponent reactions (MCRs)” has been used repeatedly; however, only the abbreviation “MCRs” should be used once it has been defined.

Comment 4: The introduction section contains information in scattered form without any proper sequence, and instead of purpose-specific description, the information in the form of general discussion is dominant, such as in the following paragraphs:

“It is worth noting that the heterocyclic compound shows significant biological activity. Heterocyclic compounds play an important role in drug discovery, and to date, a large number of synthesized molecules based on these structures have been reported with high potential in medicinal chemistry. Medicines containing heterocyclic compounds are found in all fields of treatment, including cardiovascular diseases, anti-cancer, anti-viral, anti-inflammatory, anti-tumour, anti-ulcer drugs, etc [11][12][13][14][15].”

“Among other applications of heterocyclic compounds, we can mention their use in a wide range of industries, including cosmetics, antioxidants, plastics, solvents, and vulcanization accelerators. In the CMC database, more than half (67%) of the compounds listed contain heterocyclic rings. Every year, a large number of articles in the field of heterocyclic drugs are introduced in chemical and pharmaceutical journals, and the structure of these heterocyclic compounds can be aromatic or non-aromatic. The type and size of the heterocyclic compounds, together with the substituted groups on them, can affect the physicochemical properties of the medicinal compound. The type and size of the heterocyclic compounds,

along with the substituted groups on these compounds, can affect the physicochemical properties of the medicinal compound [16][17][18][19][20][21].”

“A neoplasm is an abnormal and excessive growth of tissue. The growth of a neoplasm is inconsistent with the growth of the surrounding normal tissue, and even if the main trigger is removed, it continues to grow abnormally. Usually, with this abnormal growth, a mass is formed, which is called a tumour. Tumours are divided into two categories: malignant and benign. A benign tumour can grow but not spread, while a malignant tumour can invade nearby tissues or spread to other parts of the body [28][29][30]. A malignant tumour is called cancer, and according to the Global Burden of Disease Study, cancer is the second leading cause of death and loss of life for many people on the planet. Cancer can be defined as uncontrollable growth with loss of differentiation power and usually accompanied by metastasis. It should be noted that in a healthy organism, there is always a balance between the rate of cell division, natural cell death, and differentiation. Cancer depends on factors such as age, gender, genetics, and environmental factors [31][32][33][34]. Fortunately, during these years, the chemotherapy method and the use of chemotherapy drugs have helped to treat some cancer patients. Chemotherapy is a method of treating cancer that uses drugs that prevent fast-growing cells from dividing [35][36][37]. Almost all people with this deadly disease undergo a course of chemotherapy to cure or stabilize and prevent the disease from progressing. During the course of chemotherapy, chemotherapy drugs are used orally or by injection to go through the treatment process. Using different mechanisms, these drugs target specific aspects of the cancer process and prevent cell division or induce cell death. Anticancer drugs, from traditional chemotherapy to targeted therapies and modern immunotherapies, play an important role in cancer treatment [38][39][40][41].”

Comment 5: The importance of the target protein (PDB ID: 3A8P), its discussion as a drug target, its correlation with the concerned disease, its mechanism of action, and the importance of its inhibitors must be elaborated properly. In fact, the whole introduction section is poorly written and should be revised extensively.

Comment 6: In the spectral data section, the ^{13}C NMR, the obtained mass, and the corresponding molecular formulae of the synthesized compounds are missing. Also, the ^{1}H NMR data should be revised in the standard format with proper punctuation.