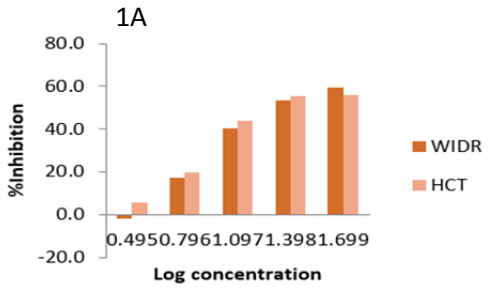
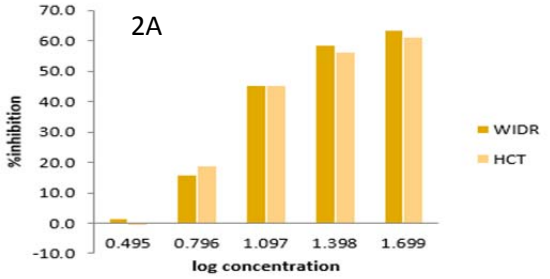
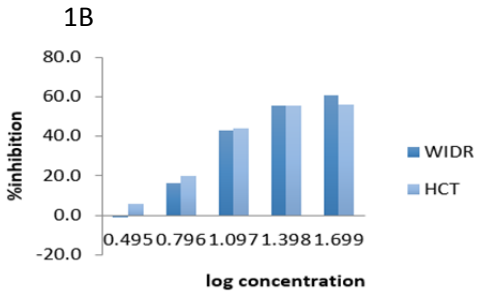
116, WiDr). The American National Cancer Institute guidelines (NCI) set the limit of activity for compounds at 50% inhibition (IC50) of proliferation of less than 30 mg/ml after an exposure time of 24 h 19. MTT assay also shows significant effect on HCT116 cell and WiDr cell. The results of viability shown in graphically represented in Fig. 2 (1A-1F and 2A-2E). It was found that the % growth inhibition increasing with increasing concentration steadily up to 3.125 mg/ml on HCT116 cell line and IC50 value of this assay in ranging 0.35 to 26.9 and R2 value was 0.9447, while in case of WiDr, so that IC50 value in ranging 0.29 to 26.7 and R2 value was 0.9582. Now overall study evaluate that single Eu and SAB and combined EU-SAB has potential activity on HCT116 cell and WiDr cell so these drug has considerable anticancer activity on colorectal cancer

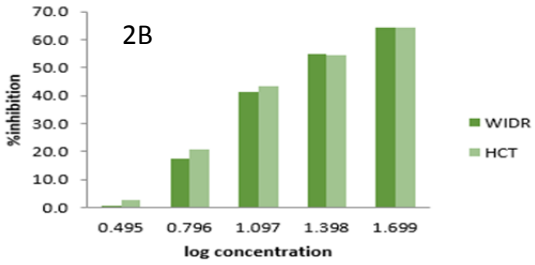
These data shown that the TFBA are more toxic to cancer cells. Cogitating the overall activity of the compounds, it was exhumed that sample two could be considered as potential anticancer drugs. This is in accordance of the preliminary antitumor studies, which previously demonstrated that TFBA and combined EU-TFBA showing anticancer effect. The results showed percentage of inhibition increases by increasing concentrations of the compounds (Fig 2). There is a difference inhibitory activity between single compounds with combined Eu-SAB against HCT-116 and WiDr cell proliferation. Whereas the percentage of inhibition of EU, SAB, and EU-SAB are incresing. Overall, the percentage inhibition of Eugenol and SAB in ranging of 0.3% to 76.6% against HCT116 cells and -1.6% and 75.1% against WiDr cells. The percentage inhibition of combined EU-SAB in ranging of -1.7% to 64.5% against HCT116 cells and -2.9% and 64.5% against WiDr cells.

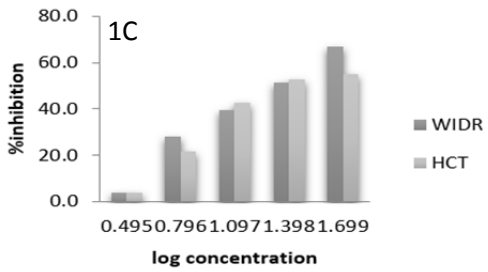
As shown in Table 1, TFBA on HCT116 and WiDr has IC50 value greater than 300µg/mL, is assigned as active compounds. While EU, GA, SA, ASA and DCBA which have IC50 values ranging from 22.3 to 26.9 µg/mL are assigned as compounds SAB high activity in inhibiting the growth of cancer cells HCT116. The best anticancer activity has shown by TFBA which has IC50 value of 0.35 µg/mL and 0.29 µg/mL, respectively. This result indicates that TFBA is potential to be developed as an anti-colorectal cancer drug.

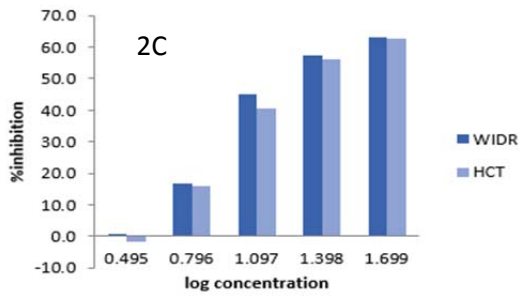












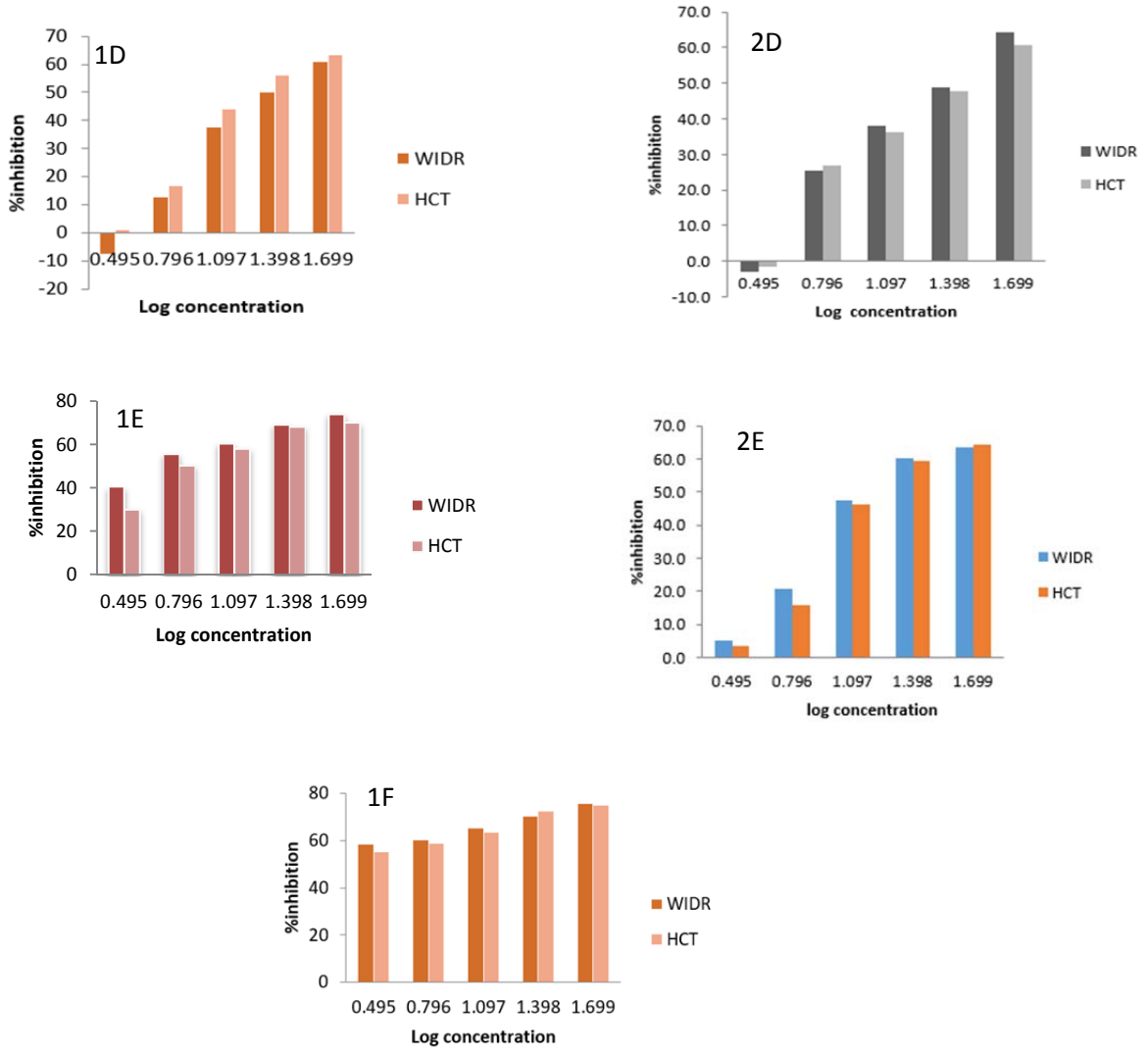


Figure 2: Inhibition value of eugenol and simple aromatic benzoate (SAB) and combination EU-SAB. Inhibition value with single compounds (1A) GA, (1B) ASA, (1C) SA, (1D) Eu, (1E) DCBA, (1F) TFBA. Combined compounds (2A) Eu-GA, (2B) Eu-ASA, (2C) Eu-SA, (2D) Eu-DCBA, and (2E) EU-TFBA

Interest in the pharmacological effects of bioactive compounds on cancer treatments and prevention has increased dramatically over the past twenty years. It has been shown to possess numerous anti-cancer activities in various cancer cells through different forms of cytotoxic effects without exhibiting considerable damage to normal cells [20]. Eugenol is a member of the phenylpropanoids class and is remarkably versatile molecule incorporated as a functional ingredient in several products and has found applications in the pharmaceutical [21]. It belongs to a class of naturally occurring phenolic monoterpenoids, chemically it is an allyl chain-substituted guaiacol. From results at above shows that the SAB compounds have IC50 greater than combination EU-SAB. SAB compound with halogen group has a lower IC50 value than SAB compound with hydroxyl group. This mean the SAB compound with presence of halogen groups in aromatic chain more active than SAB with hydroxyl group in aromatic chain.

Thus, it is imperative to search for new alternatives to colon cancer prevention agents. The inhibitory effect of Eu and simple aromatic benzoate with halogen group in aromatic chain may be a potential chemotherapeutic or a chemopreventive agent based on its ability to induce apoptosis in cancer cells with relatively low toxicity

CONCLUSION

In conclusion the result of the present study indicated that the Eugenol and SAB as Phenolic compounds are rich in medicinal herbs. Various phenolic compounds contribute to their potent effects on inhibiting carcinogenesis. Extensive research has been conducted in vitro anticancer activities to colorectal cancer cell line

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