

INVESTIGATION THE ANTIFUNGAL ACTIVITY OF AQUEOUS EXTRACT OF GREEN TEA LEAVES

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Introduction: Green tea extract has been shown to possess various health benefits due to its rich content of antioxidants and other bioactive compounds. One of the lesser-known benefits of green tea extract is its antifungal activity, which has been demonstrated in several studies. Fungal infections are a common health concern, with some species of fungi causing skin infections, respiratory tract infections, and even life-threatening systemic infections in immunocompromised individuals.

Aim: Determine the antifungal activity of green tea leaves aqueous liquid extract.

Methods: The object of the study was the aqueous extract of green tea leaves, which was obtained as follows: 10.0 g (exactly weighed) of the crushed raw material was placed in a 500 mL ground flask, poured with 200 ml of distilled water and kept for 1 hour in a boiling water bath, filtered through a paper filter, extraction was performed twice. Extracts were combined and evaporated on a rotary evaporator to a ratio of 1:2 to the weight of the raw material. The antifungal activity was determined by the method of "wells". Preparation of microorganisms' suspensions with determined concentrations of microorganisms (optical density) was carried out by the standard of turbidity (0.5 units according to scale of McFarland) with using of equipment of Densi-La-Meter (Czech, wavelength 540nm). Colony forming unit was 10^7 microorganisms at 1 mL of growth medium and determined by standard of McFarland). On solidified agar, using a pipette under sterile conditions in Petri dishes made 1 mL of a suspension of microorganisms. After uniform distribution of microorganisms over the entire surface of the agar, the plates were incubated at room temperature for 15-20 minutes. Next, wells with a diameter of 6 mm were made in the cups, into which solutions of the test substances were introduced. The samples incubated at 37° C for 16-24 hours. After incubation, the plates were placed upside down on a dark matte surface so that light fell on them at an angle of 45° (accounting in reflected light). The diameter of the growth retardation zones measured using a caliper. In the study following museum strains was used *Candida albicans* ATCC 653/885. Chlorophyllipt spray manufactured by the manufacture "Zdorovyie" with concentration 1% in 96% ethanol was used as the reference drug. The analyzed solution was 1% prepared solution of obtained aqueous extract.

Results: According to the conducted research, it was found that aqueous extract of green tea leaves inhibited the growth of fungi strains such as *Candida albicans* (19.67±0.50 mm). Comparing results of investigated extract and reference drug –«Chlorophyllipt» ("Zdorovyie") it can be pointed out that reference drug inferior of antifungal activity.

Conclusions: The present work showed that the aqueous extract of green tea leaves possess remarkable antifungal activity against *Candida albicans* strains.