Секция «Микробиология»

Antibacterial activity of Trifolium repens

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White clover (*Trifolium repens*) is a perennial herbaceous plant. Due to it's potential to yield high quality biomass, white clover is not exploited enought, especially in wet habitats (4). White clover is characterized by a high percentage of stolons in which carbohydrates accumulate (1).

The tests were carried out on three samples (leaf, flower and mixed parts of the plant). Samples (2g of plants + 40mL of methanol) were left in the ultrasonic bath for 30 minutes at 50 ° C. Total phenols, flavonoids and antibacterial activity were examined.

Determination of total phenols was performed spectrophotometrically by Singleton method (3). Gallic acid was used as a standard. The highest content of phenol is noted in extract of flower (8,868 mg GA/g), and the lowest in extract of leaf (3,944 mg GA/g).

Total flavonoids was determinated spectrophotometrically, by (2). Routine was used as a standard. The highest content of total flavonoids is noted in extract of flower (11,3704 mg RE/g), and the lowest in extract of mixed parts (5,497 mg RE/g).

The antibacterial activity of plant extracts was tested by minimum inhibitory concentration (MIC) method on 7 bacterial strains. Flower extract inhibited the growth of all 7 examined strains. The extract of leaf inhibited the total growth of 3 bacterial cultures and remaining MIC values amounted as: *Bascillus spieizenii* ATCC 6633 (0,978 μg/mL), *Escherichia coli ATCC 25922 (62,5*μg/mL), *Salmonella Typhimurium ATCC 14028* (31,25 μg/mL), *Pseudomonas aeruginosa ATCC 27853* (31,25 μg/mL). The extract of the mixed parts of the plant inhibited the growth of 3 studied culture and remaining MIC values was: *Staphylococcus aureus* ATCC 25923 (15,825 μg/mL), *Listeria ivanovii* ATCC 19119 (62,5 μg/mL), *Salmonella Typhimurium ATCC 14028 (62,5* μg/mL), *Pseudomonas aeruginosa ATCC 27853 (125* μg/mL).

References

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