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Separation, Identification, and Measuring Gossypol in the Cottonseed Oil and Investigating the Performance of Drugs Prepared from the Combination of Plant Extract and Oil in the Treatment of Cutaneous Leishmaniasis Resistant to Drugs

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Abstract : In 2013, the World Health Organization announced the cases of Cutaneous leishmaniasis infection in Iran between 69,000 to 113,000. The most common chemical drugs for Cutaneous leishmaniasis treatment are sodium stibogluconate, and meglumine antimonate, which not only have relatively many side effects, but also some species of the Leishmania genus have become resistant to them .The most prominent compound existing in different parts of the cotton plant is a yellow polyphenol called Gossypol. Gossypol is an extremely valuable compound and has anti-cancer properties. In the current project, Gossypol was extracted with a liquid-liquid extraction method in 120 minutes in the presence of Phosphoric acid from the cotton seed oil of Golestan beach varieties, then got crystallized in darkness using Acetic acid and isolated as Gossypol Acetic acid. The efficiency of the extracted crystal was obtained at 0.12+- 1.28. the cotton plant could be efficient in the treatment of Cutaneous leishmaniasis. The extract of the green-leaf cotton boll of Jargoyeh varieties was tested as an ointment on the target group of patients suffering from Cutaneous leishmaniasis resistant to drugs esistant to drugs by our colleagues in the research team. The results showed the Pearson's correlation coefficient of 0.72 between the two variables of wound diameter and the extract use over time which indicated the positive effect of this extract on the treatment of Cutaneous leishmaniasis was resistant to drugs.

Keywords : cottonseed oil, crystallization, gossypol, green-leaf
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