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Biodiesel production by using of lipase produced by *Pseudomonas stutzeri* as a biocatalyst for transesterification reaction of olive oil

Israa M S AL-Kadmy¹, Alaa Naseer Mohammed Ali¹, Sahira Nsayef Muslim¹, Nadheema Hammood Hussein¹, Sarah Naji Aziz¹, Samah N El-Shafiey², Susan A Ibrahim¹ and Nadal A Al-Saryi¹
¹Mustansiriyah University, Iraq

²Agricultural Research Center, Egypt

The rapid consuming of fossil fuels will lead to rapid exhaustion. Therefore, it is imperative to develop alternative and inexpensive new technologies to produce sustainable fuels such as biodiesel production by using of lipase as biocatalyst for performing esterification reactions for the production of biodiesel. Two *Pseudomonas stutzeri* and two *Pseudomonas oryzihabitans* were isolated from ruined olive fruits. These isolates screened for production of lipase from vegetable oils and others fats and found that the Ginger oil was the best among all the used oils for induction of lipase production in the medium. Lip gene for lipase was used for confirmation the presence of lipase gene in

Pseudomonas stutzeri and *Pseudomonas oryzihabitans*. The lipase enzyme was used as a biocatalyst for the transesterification reaction step in biodiesel production and found that the olive oil was more suitable than the almond oil for biodiesel production, also the free fatty acid (Oleic acid) was present in the major amount which is best suited for biodiesel production followed by fatty acid methyl esters (FAMES) with 37%. The processing of the bacterial supernatants led to increase the performance in comparison to the non-processed samples since an easy and cheap process of concentration and dialysis could increase the yield of biodiesel production.

Biography

Israa M.S. AL-Kadmy has completed MSc in Microbiology from Mustansiriyah University, College of Science, Department of Biology. (Iraq). She has the research interest in molecular microbiology, Biotechnology and Nanobiotechnology.

israaalkadmy@gmail.com

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