EDITORIAL

Honey isolates

Mona A Esawy, PhD

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EDITORIAL

My current research interests since 2011 is focused in honey isolates (bacteria and fungi), my first aim with my team is their identification using phylogenetic systematics, morphological study and other tools. Also, I try to understand their fundamental aspects of their bioactivity. These fundamental aspects include some enzymatic studies since I try to make correlation between the enzymes in honey itself such as amylase, invertase and glucose oxidase and the enzymes produced by honey isolates. My publications (1,2) indicated to a firm relation between the enzyme produced by the honey isolates and bees honey. Also, it was noticed that all the honey isolates bacteria are levansucrase producers (3,4). Levansucrase is an important enzyme yield levan which play an important role in human health improvement. Our previous study indicated to the importance of levan as antivirus against pathogenic avian influenza HPAI and adenovirus type 40 (3). Accordingly, examination of levan and their derivatives as strong antioxidant and antitumor agent was done in Esawy et al. (4). Also, evaluation of honey isolates bacteria as probiotic became my main target in last few years; our preliminary work recommended strongly these types of bacteria to be used as probiotic supplement. Also, my work tries to make a possible relation between the levansucrase, levan and the probiotic bacteria (5).

ENZYME IMMOBILIZATION

Part of my current research is focused in enzyme immobilization and making comparison study between the free and immobilized enzyme. In the beginning of my work in 1998 (6), I tried to evaluate different immobilization methods and understand the advantageous and disadvantageous of each method. Also, I try to find economic, available and save carriers using different immobilization methods. In 2005 Immobilization of *Bacillus licheniformis* 5A1 milk-clotting enzyme on on Amberlite IR-120 by ionic binding and I invent a method to recover the carrier and reuse it without facing the clotting problem (7). I and my team success in 2013 to entrapped all *Aspergillus niger* NRC1ami pectinase in PVA sponge and the immobilized form showed great ability in orange juice clarification (8). Also, immobilization of halophilic *Aspergillus awamori* EM66 exochitinase on Grafted k-carrageenan- alginate was done with great efficiency (9). Finally, in spite of that dextransucrase is face a big problems in immobilization due dextran yield. I and my team could immobilized Enterococcus faecalis Esawy dextransucrase totally in Fe3+-cross-linked alginate/carboxymethyl cellulose (AC) beads (10).

ENZYMIC SYNTHESIS

Due to the importance of different molecular weight polysaccharides to be used as prebiotic, in addition to their needing in pharmaceuitical field. I and my team work in enzymic synthesis of levansucrase (11,12). The study was aimed to control the molecular weights by different parameters and aoolied the most promising polysaccharide in different aspects.

FUTURE WORK

Our future work aim to make genetic comparison between honey isolates enzymes and the enzymes from other sources.

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Professor, Chemistry of Natural and Microbial Products, Egypt

Correspondence: Dr Esawy MA, PhD, Chemistry of Natural and Microbial Products, Egypt. Telephone 00202-33335479, 00202 – 26851204, e-mail mona_esawy@hotmail.com

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