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## Preparation and evaluation of mucoadhesive Resveratrol microbeads using thiolated alginate for intrapocket delivery

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Resveratrol (Res), a polyphenolic phytoalexin, had shown a promising therapeutic efficacy towards treatment of periodontal disease *in vitro*. This work aims to develop Res microbeads with strong mucoadhesion using thiolated alginate (TA) for local treatment of periodontal pockets. TA was synthesized by conjugating sodium alginate (A) with thioglycolic acid. Product was evaluated by IR and DSC. Both A and A: TA Res micro beads with different ratios were prepared by ionotropic gelation method. Formulations were evaluated regarding their entrapment efficiency (%EE), swelling index (SI), *in vitro* drug release and kinetics. Selected formula was examined for its mucoadhesion by ex vivo wash-off method, surface morphology using scanning electron microscope (SEM) and stability against light. Clinical evaluation is running. Formation of TA was confirmed. % EE for all formulations ranged from 83.72 to 104.54%. Results revealed a significant lower SI for TA rich formulation (A/TA 1:1) along with slower release rate and zero-order kinetics, in addition to powerful mucoadhesion; 26% remaining of microbeads after 1 h, compared to 2% for A microbeads. SEM micrographs showed a rough surface with drug precipitation. The formula maintained its %EE after 5 h exposure to direct sunlight. A/TA 1:1 mucoadhesive Res microbeads could be exploited as a prolonged drug release devices for intrapocket application.

### Biography

Abeer Ahmed Kassem has completed her (2008) from Faculty of Pharmacy, Alexandria University, Egypt. Currently she is an Assistant Professor in Faculty of Pharmacy, Princess Nourahbint Abdulrahman University, Saudi Arabia. She has published about 8 papers in reputed journals and two books. She served as a reviewer in reputed journals, e.g. *Int. J. Pharm.* and *Drug Delivery*. She taught pharmacy undergraduate students (2008 till now), for different courses, e.g. Solid Dosage Forms, Hospital Pharmacy and Biopharmaceutics. She was the Manager of the quality assurance unit, Faculty of Pharmacy and Drug Manufacturing, Pharos University in Alexandria, Egypt (2008-2010).

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