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Functional food tablets as anticancer support agents and application strategies in nutrition

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The functional constituents of the foods or some functional foods must be standardized as nutraceutical products generated under good manufacturing practices (GMPs). These formulations should be applied as food tablet forms. A nutraceutical is “any non-toxic food constituent that has scientifically proven health benefits, including disease treatment or prevention”. Oral utilization has been one of the most popular routes of drug delivery because of its ease of administration, patient compliance, least sterility constraints and flexible design of dosage forms. Food tablets are defined as unit dose, temper evident, solid preparations including one or more active ingredients or whole food powder. In applications, nutraceutical food tablets has been prepared by direct compression method. The powder blend has been thoroughly mixed with talc and magnesium stearate and compressed into a 300-400 mg tablet using single rotatory punching machine based on tablet processing strategy. The physiochemical properties including the bulk density (g/ml), tapped density (g/ml) as pre-compression parameter have been confirmed while thickness (mm), hardness (kg/cm²), % weight variation, % friability, % *in-vitro* drug release as post-compression parameters have been carried out. In our scientific research, black mulberry powder, aronia berry powder, mesir paste powder (containing 41 type spice mixture and majorly cinnamon), Turk powder (containing 15 type of endemic plant and spice mixture), hünnap fruit powder, sour cherry fruit, pomegranate peel powder applications performed, tablets were obtained and quality profiles were determined. Phenolic compounds of above mentioned tablet forms were examined based on their active ingredients. It has been concluded that the nutraceutical tablets has been prepared by direct compression method and has given satisfactory and acceptable outputs. Additionally, final products not included side effects, they were appropriate for consumer utilization and their cost were minimized. Conventional tablets of studied nutraceuticals showed immediate food and plant releasing owing to their direct compression. The formulation containing mesir powder could be more efficacious due to the major presence of cinnamaldehyde (as v/v) whereas black mulberry powder could be more beneficial as a nutraceutical food due to the presence of morusin and apigenin phenolic anticarcinogenics.

Biography

Ozlem Tokusoglu has completed her PhD at Ege University Engineering Faculty, Dept. of Food Engineering in 2001. She is currently working as Associate Professor; Dr. Faculty Member in Celal Bayar University Engineering Faculty Department of Food Engineering. She performed a Visiting Scholar at the Food Science and Nutrition Department/University of Florida, Gainesville-Florida-USA during 1999-2000 and as Visiting Professor at the School of Food Science, Washington State University, Pullman, Washington, USA during April-May 2010. She has published many papers in peer reviewed journals and serving as an Editorial Board Member of selected journals. She published and scientifically edited two international books entitled “*Fruit and Cereal Bioactives: Chemistry, Sources and Applications*” and “*Improved Food Quality with Novel Food Processing*” by CRC Press, Taylor & Francis, USA Publisher, third book “*Food By-Product Based Functional Food Powders*” is in progress. She also published two national books entitled “*Cacao and Chocolate Science and Technology*” and “*Special Fruit Olive: Chemistry, Quality and Technology*”. She organized and/or administered as Conference Chair at many conferences and congresses in various parts of USA and Europe.

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