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POTATO ACTIVE PROTEINES ISOLATED FROM VARIETIES WITH COLORED PULP OF TUBERS*

Keywords: patatin, potato, animal and vegetable proteins, short peptides.

Patatin is a glycoprotein found in potatoes (*Solanum tuberosum*). The main function of patatin is as a storage protein but it also has lipase activity and can cleave fatty acids from membrane lipids. The patatin protein makes up about 40 % of the soluble protein in potato tubers. It is a high grade protein concentrate. Potato proteins have a very good nutritional value, equal to that of egg. Their digestibility in the small intestine is high (with an average of 85 %) in the form of short peptides, the most bio-available form of proteins in equines. The possible applications of Potato protein are nutritional, functional, and health benefits. The high nutritional values are more sustainable than animal proteins. Thanks to a well balanced amino acid composition, potato proteins have a high biological value, higher than offered by any other vegetable protein and close to whey and egg protein. This makes it a good source for protein fortification in a wide range of food products. Innovation with potato protein is high-performance potato protein isolates offer great potential for innovation. They allow manufacturers to meet current consumer needs in health, clean labels, premium quality and convenience. This breakthrough combines excellent texturising and nutrition with a 'free from' label – all from a unique process and the potato as a natural source. Allergenicity is a rapidly growing consumer concern globally. Many animal and vegetable proteins, such as from soy, milk, egg or wheat, are declarable allergens. Whereas proteins known to be lower allergenic, such as from rice, maize or pea, provide limited solubility, nutrition and texture. What makes potato proteins unique is the combination of high functionality, good nutrition and low allergenicity. The aim of the experiment is protein separation and extraction of the largest possible amount by biotechnology methods (by chemical methods/ biological methods), with taking into account making sure that the protein is valid after extracting it for human consumption

as well as pigmented potato contains high level of polyphenols, this fact must be counted to avoid product browning.

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NOVEL EXTRACTION TECHNIQUES OF RESVERATROL FROM BIOWASTE*

Keywords: resveratrol, extraction, biowaste, deep eutectic solvent.

Despite the limited economical value, biowaste of grapes has been successfully used as a source of bioactive phenolic compounds such as resveratrol (RSV). RSV is a natural polyphenol that exhibits anticancer, antidiabetic, anti-inflammatory and antioxidant activities. This led to more attempts to extract this valuable substance from biowaste for further use in pharmaceutical, cosmetics and food industries [1].

Recently, several approaches to tackle the extraction and bioavailability of RSV from biowaste have been explored but still problematic. For instance, a variety of conventional (Soxhlet) and new extraction techniques have been achieved including ultrasound-assisted extraction (UAE), microwave-assisted extraction (MAE), pressurized liquid extraction, and supercritical fluid extraction [2].

In this regard, previous researches attempted to optimize different techniques for the extraction of flavonoids from grape biowaste. As a result, the yield and purity of extract were highlighted changeable according to extraction solvent, water percentage and temperature. Consequently, there was a great demand to manipulate extraction techniques by using different extraction conditions. Hence, it can increase the effectiveness of extraction, thereby allowing for an overall decrease in the amount of solvent used.

Since the pollution caused by organic solvents is a serious environmental issue, the emergence of a better eco-friendly solvent is required. The deep eutectic solvent (DES) is a green non-toxic, biodegradable and efficient solvent for bioactive compound extraction especially resveratrol [3]. However, the application of such technology is