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## Improving Physicochemical Properties of Lactose hydrolyzed Milk Powder by the Prebiotic Carrier

The main problems of Lactose hydrolyzed milk powder during production were the adhesion in the drying chamber and low-yield and low-quality powder. This study investigates the physicochemical properties of drying Lactose Hydrolyzed Milk Powder (LHMP) using a five-carbohydrate carrier such as Maltodextrin (MD), Resistant Maltodextrin (RMD), Resistant Starch (RS), Polydextrose (PDX), and Cellobiose (CB), as co-particles in the spray drying process. Lactose hydrolyzed milk and the carbohydrate carrier mix with levels (maximum, medium and minimum level) of carrier using experiment 5x3 Completely Randomized Design. The mixture was filtered before spray drying with a spray dryer two-fluid nozzle size of 2 - 25 µm., Determine the inlet-outlet hot air temperature of 130-140 oC and 90-100oC respectively. Stir the mixture constantly while feeding and set the sample's injection speed. The binding of carbohydrate carrier and milk composition gives LHMP higher quality, reduces adhesion during drying, and increases powder yield. All carbohydrate carriers have improved solubility, wettability, and moisture content, except RS shows a high insolubility index caused by the insoluble properties. The four-carbohydrate carrier (PDX, CB, RMD, and RS) was prebiotic, thereby increasing the benefit of functional Lactose hydrolyzed milk powder as dietary fiber and maybe effectively lowering the estimate Glycemic Index (eGI) in LHMP than MD carrier's add-on spray drying probably affects glucose in the blood vessel. Conversely, another carrier effects the eGI value unchanged compared to the control.

**Keywords:** lactose hydrolyzed milk powder, co-particle, prebiotic carrier, estimate glycemic index

### Biography

chanunya completed bachelor's degree in Bachelor of Science (Food Science and Technology) from Thammasat University and researched milk powder for thesis of Masters of Science (Public Health) Nutrition Program at Mahidol University. The career about milk product research and development section of Dairy farming promotion organization of Thailand.