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"Proteins and their covalent interactions with flavors".

Summary:

Demand for high protein plant, dairy-based diets have been increasing but is becoming more problematic for food industry to flavor and maintain them over its shelf life. It is because of multifaceted interactions that occur between the two food components. Over 40 years of research have been done on studying temporary interactions between flavor and proteins, but very little work has been done on more permanent interaction – covalent bonding. This study uses UPLC-QTOF-MS for monitoring nature and extent of the covalent reactions for the change in molecular weight (Protein + flavor).The post-translational modification site on protein by flavor is then identified by taking proteomics approach using nano flow LC-Orbitrap Velos MS/MS. Results will help in understanding the conditions at which flavor compounds will covalently bond with a protein helping food industry develop flavor protein matrix that has better shelf life.