A Technical Breakthrough for Protein Sample Preparation

(Solution-based vs. Spin Column-Based Technologies)

Sample preparation is usually the first step for almost all protein work. The quality of such preparation is critical to successful protein analysis. The quality of protein sample dictates the quality of the experimental results. There is an increasing demand for high quality, small scale protein preparations for analytical purposes. As protein analysis has become more and more complex, the demand for adequate sample preparation techniques has likewise grown. Protein sample preparation is increasingly critical for people who work on proteomics, functional genomics, clinical studies, differential expression, protein trafficking, and protein structural and functional studies. The most commonly used protein sample preparations include but not limited to total protein extraction from cultured cells or tissues, plasma membrane protein isolation/purification and cell fractionations. Traditionally protein sample preparation is accomplished by a variety of so called solution-based techniques. One or more cell lysis solutions coupled with a centrifuge represent a major format of solution-based protein extraction methods. A typical example of solution based protein sample preparation employees RIPA buffer for total protein extractions. This method extracts proteins from the samples using relatively mild extraction buffer. The procedure takes about 20-30 min to complete. In recent years a spin column-based technology has emerged as an alternative for solution-based extraction. This next generation technology couples traditional methods with a specially designed spin-column for rapid and efficient protein extraction. Total protein can be extracted from cultured cells or tissues in as few as 1 min with high protein yield and a complete protein profile without any bias. In comparison to traditional methods spin-column based technology represents a technological breakthrough and will compete favorably with traditional methods in terms of ease of use, speed and performance. This novel technology has the potential to replace RIPA buffer for protein sample preparations.

1864 Berkshire Lane N • Plymouth, MN 55441, USA • p. 952.400.6898

inventbiotech.com • info@inventbiotech.com

Spin-Column-Based vs. Solution-Based

	RIPA	Sonication	Spin-Column-Based
Processing Time (min)	25-60	15-25	1-5
Min Sample Size (ul)	50	200	20
Endogenous Baseline	No	Yes/No	Yes
Complete Protein profile	No	Yes/No	Yes
Final Concentration	Average	Average	High
Repeatability	Poor	Good	Excellent
Ease of Use	Fair	Poor	Excellent

1864 Berkshire Lane N • Plymouth, MN 55441, USA • p. 952.400.6898
inventbiotech.com • info@inventbiotech.com