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- 1830 **Mass Spectrometric Identification of Human Prostate Cancer-derived Proteins in Serum of Xenograft-bearing Mice**
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- 1957 **Lectin Capture Strategies Combined with Mass Spectrometry for the Discovery of Serum Glycoprotein Biomarkers**
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- 1968 **Efficient Fractionation and Improved Protein Identification by Peptide OFFGEL Electrophoresis**
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- 1975 **A Novel Histology-directed Strategy for MALDI-MS Tissue Profiling That Improves Throughput and Cellular Specificity in Human Breast Cancer**
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- 1984 **Establishment of a Reliable Method for Direct Proteome Characterization of Human Articular Cartilage**
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- 1996 **A Reagent Resource to Identify Proteins and Peptides of Interest for the Cancer Community: A Workshop Report**
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