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Nota di contenuto	Insulin Production -- Isolation of Islets of Langerhans from Rodent Pancreas -- Purification of Rat Pancreatic ?-Cells by Fluorescence-Activated Cell Sorting -- Assessment of Insulin Secretion in the Mouse -- Detection of Insulin Production by Immunohistochemistry -- Quantification of the Level of Insulin Gene Expression -- Chromatin Immunoprecipitation Using Isolated Islets of Langerhans -- Adenoviral Gene Transfer into ?-Cell Lines -- Utilization of NOD Mice in the Study of Type 1 Diabetes -- Insulin Action -- of DNA into 3T3-L1 Adipocytes by Electroporation -- Analysis of Insulin-Stimulated Glucose Uptake in Differentiated 3T3-L1 Adipocytes -- Fractionation Analysis of the Subcellular Distribution of GLUT-4 in 3T3-L1 Adipocytes -- Visualization and Quantitation of Integral Membrane Proteins Using a Plasma Membrane Sheet Assay -- Assaying Tyrosine Phosphorylation of Insulin Receptor and Insulin Receptor Substrates -- Measuring Insulin-Stimulated Phosphatidyl-Inositol 3-Kinase Activity -- Assaying AKT/Protein Kinase B Activity -- Measurements of Cellular Phosphoinositide Levels in 3T3-L1 Adipocytes -- Measurement of Glycogen Synthesis and Glycogen Synthase Activity in 3T3-L1 Adipocytes -- Measurement of Contraction-Stimulated GLUT-4 Translocation in Isolated Skeletal Muscle -- Single Embryo

	Measurement of Basal-and Insulin-Stimulated Glucose Uptake -- Immunohistologic Staining of Muscle and Embryos to Detect Insulin-Stimulated Translocation of Glucose Transporters.
Sommario/riassunto	About 17 million Americans suffer from diabetes mellitus, a disease caused by defects in insulin production, insulin action, or both, and also a leading cause of kidney failure, blindness, and amputations. In Diabetes Mellitus: Methods and Protocols, leading researchers and clinical investigators describe their cutting-edge techniques for studying these defects at both the molecular and biochemical levels. Written in step-by-step detail to ensure ready reproducibility and robust results, these techniques allow investigators, both novices and those already active in the field, to study every major facet of insulin production and action. Each protocol includes an introduction to the technique, an explanation of its application, and a list of materials. Practical notes discuss how to avoid pitfalls, as well as how to adapt the methods to your own research. Cutting-edge and highly practical, Diabetes Mellitus: Methods and Protocols provides basic scientists and clinical researchers, both experienced investigators and those new to the field, all the critical tools needed for the productive study of diabetes mellitus today.