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Sommario/riassunto	Since the 1970s, there has been much discussion about the “glucoreceptor” and “substrate site” and which of these two is the dominant theory, but new findings on the glucose-sensing receptor have now shed new light on the “glucoreceptor theory.” This volume reviews recent advances concerning the glucose-sensing receptor in pancreatic beta-cells. The history of research into pancreatic beta-cells is long and complex; accordingly, the first chapters present the history of this field and explain the hypothesis of insulin secretion mechanisms: “glucoreceptor theory”. Subsequent chapters examine the function and activity of the glucose-sensing receptor in pancreatic beta-cells, such as identification, channel pathway, receptor signal and physiological role. Readers will gain a thorough understanding of the glucose-sensing receptor and glucose metabolism in pancreatic beta-cells, new insights into the pathophysiology of diabetes, and learn about new targets for the treatment of diabetes. .