

References

- 1) Best L, Yates AP, Meats JE, Tomlinson S.: Effects of lactate on pancreatic islets. Lactate efflux as a possible determinant of islet-cell depolarization by glucose. *Biochem J.* **1989 Apr 15;259(2):507-11.**
- 2) Sekine N, et al: Low lactate dehydrogenase and high mitochondrial glycerol phosphate dehydrogenase in pancreatic beta-cells. Potential role in nutrient sensing. *J Biol Chem.* **1994 Feb 18;269(7):4895-902.**
- 3) Schuit F., et al, Metabolic fate of glucose in purified islet cells. Glucose-regulated anaplerosis in beta cells. *J Biol Chem.* **1997 Jul 25;272(30):18572-9.**
- 4) Smith PA, et al: Electrogenic arginine transport mediates stimulus-secretion coupling in mouse pancreatic beta-cells. *J Physiol.* **1997 Mar 15;499 (Pt 3):625-35**
- 5) L. Best*, T. Speake and P. D. Brown, Functional characterisation of the volume-sensitive anion channel in rat pancreatic b-cells, UKExperimental Physiology (2001) 86.2, 145–150
- 5) Ishihara H, Wang H, Drewes LR, Wollheim CB.: Overexpression of monocarboxylate transporter and lactate dehydrogenase alters insulin secretory responses to pyruvate and lactate in beta cells. *J Clin Invest.* **1999 Dec;104(11):1621-9.**
- 7) Otto R, Lageveen RG, Veldkamp H, Konings WN. Lactate efflux-induced electrical potential in membrane vesicles of *Streptococcus cremoris*. *J Bacteriol.* **1982 Feb;149(2):733-8.**
- 8) Simpson SJ, Bendall MR, Egan AF, Vink R, Rogers PJ.: High-field phosphorus NMR studies of the stoichiometry of the lactate/proton carrier in *Streptococcus faecalis*. *Eur J Biochem.* **1983 Oct 17;136(1):63-9.**
- 9) Cook DL, Hales CN.: Intracellular ATP directly blocks K⁺ channels in pancreatic B-cells. *Nature.* **1984 Sep 20-26;311(5983):271-3**
- 10) Boschero AC, Malaisse WJ. Stimulus-secretion coupling of glucose-induced insulin release. *Am J Physiol.* **1979 Feb;236(2):E139–E146**
- 11) Meissner HP, Schmelz H: Membrane potential of beta-cells in pancreatic islets. *Pflugers Arch.* **1974 351195-206**
- 12) Sánchez-Andrés JV, Gomis A, Valdeolmillos M.: The electrical activity of mouse pancreatic beta-cells recorded in vivo shows glucose-dependent oscillations. *J Physiol.* **1995 Jul 1;486 (Pt 1):223-8.**
- 13) Ainscow EK, Zhao C, Rutter GA.: Acute overexpression of lactate dehydrogenase-A perturbs beta-cell mitochondrial metabolism and insulin secretion. *Diabetes.* **2000 Jul;49(7):1149-55.**
- 14) Alcazar O, Tiedge M, Lenzen S.: Importance of lactate dehydrogenase for the regulation of glycolytic flux and insulin secretion in insulin-producing cells. *Biochem J.* **2000 Dec 1;352 Pt 2:373-80**
- 15) Zhao C, Rutter GA.: Overexpression of lactate dehydrogenase A attenuates glucose-induced insulin secretion in stable MIN-6 beta-cell lines. *FEBS Lett.* **1998 Jul 3;430(3):213-6.**
- 16) Salehi A, Vieira E, Gylfe E.: Paradoxical stimulation of glucagon secretion by high glucose concentrations. *Diabetes.* **2006 Aug;55(8):2318-23**
- 17) Barg S, Galvanovskis J, Göpel SO, Rorsman P, Eliasson L.: Tight coupling between electrical activity and exocytosis in mouse glucagon-secreting alpha-cells. *Diabetes.* **2000 Sep;49(9):1500-10**
- 18) Gromada J, et al: ATP-sensitive K⁺ channel-dependent regulation of glucagon release and electrical activity by glucose in wild-type and SUR1^{-/-} mouse alpha-cells. *Diabetes.* **2004 Dec;53**

Suppl 3:S181-9

- 19) Hjortoe GM, Hagel GM, Terry BR, Thastrup O, Arkhammar PO: Functional identification and monitoring of individual α and β cells in cultured mouse islets of Langerhans. *Acta Diabetol* **41:185–193, 2004**
- 20) Liu YJ, Vieira E, Gylfe E: A store-operated mechanism determines the activity of the electrically excitable glucagon-secreting pancreatic α -cell. *Cell Calcium* **35:357–365, 2004**
- 21) Subhadra C. Gunawardana and Geoffrey W.G. Sharp: Intracellular pH Plays a Critical Role in Glucose-Induced Time-Dependent Potentiation of Insulin Release in Rat Islets. *DIABETES*, **VOL. 51, JANUARY 2002**
- 22) Yamada S, et al: Time-dependent potentiation of the beta-cell is a Ca^{2+} -independent phenomenon. *J Endocrinol* **2002, 172:345-354.**
- 23) Grill V, Adamson U, Cerasi E: Immediate and time-dependent effects of glucose on insulin release from rat pancreatic tissue: Evidence for different mechanisms of action. *J. Clin Invest* **1978, 61:1034-1043.**
- 24) Scheenen WJ, Wollheim CB, Pozzan T, Fasolato C.: Ca^{2+} depletion from granules inhibits exocytosis. A study with insulin-secreting cells. *J Biol Chem.* **1998 Jul 24;273(30):19002-8.**
- 25) Troadec JD, Thirion S, Laugier JP, Nicaise G.: Calcium-induced calcium increase in secretory vesicles of permeabilized rat neurohypophysial nerve terminals. *Biol Cell.* **1998 Jul;90(4):339-47.**
- 26) Stiernet P, Guiot Y, Gilon P, Henquin JC.: Glucose acutely decreases pH of secretory granules in mouse pancreatic islets. Mechanisms and influence on insulin secretion. *J Biol Chem.* **2006 Aug 4;281(31):22142-51.**
- 27) Wu MM, et al: Organelle pH studies using targeted avidin and fluorescein-biotin. *Chem Biol* **2000; 7:197-209.**
- 28) LINDA S. TOMPKINS, KEVIN D. NULLMEYER, SEAN M. MURPHY, CRAIG S. WEBER, AND RONALD M. LYNCH: Regulation of secretory granule pH in insulin-secreting cells. *Am J Physiol Cell Physiol* **283: C429–C437, 2002**
- 29) Barg S, et al: Priming of insulin granules for exocytosis by granular $\text{Cl}(-)$ uptake and acidification. *J Cell Sci.* **2001 Jun;114(Pt 11):2145-54**
- 30) Lindström P, Sehlin J.: Effect of glucose on the intracellular pH of pancreatic islet cells. *Biochem J.* **1984 Mar 15;218(3):887-92.**
- 31) Gonçalves PP, Meireles SM, Neves P, Vale MG.: Synaptic vesicle $\text{Ca}^{2+}/\text{H}^{+}$ antiport: dependence on the proton electrochemical gradient. *Brain Res Mol Brain Res.* **1999 Aug 25;71(2):178-84.**
- 32) Nicaise G, Maggio K, Thirion S, Horoyan M, Keicher E.: The calcium loading of secretory granules. A possible key event in stimulus-secretion coupling. *Biol Cell.* **1992;75(2):89-99**
- 33) Anderson DC, King SC, Parsons SM.: Proton gradient linkage to active uptake of $[^3\text{H}]$ acetylcholine by Torpedo electric organ synaptic vesicles. *Biochemistry.* **1982 Jun 22;21(13):3037-43**
- 34) Hell JW, Maycox PR, Jahn R: Energy dependence and functional reconstitution of the gamma-aminobutyric acid carrier from synaptic vesicles. *J Biol Chem.* **1990 Feb 5;265(4):2111-7.**
- 35) Moriyama Y, Maeda M, Futai M.: Energy coupling of L-glutamate transport and vacuolar H^{+} -ATPase in brain synaptic vesicles. *J Biochem.* **1990 Oct;108(4):689-93**
- 36) Ungermann C, Wickner W, Xu Z.: Vacuole acidification is required for trans-SNARE pairing, LMA1 release, and homotypic fusion. *Proc Natl Acad Sci U S A.* 1999 Sep 28;96(20):11194-9.

- 37) Andrea H. Rossi, Patrick R. Sears and C. William Davis: Ca²⁺ dependency of Ca²⁺-independent' exocytosis in SPOC1 airway goblet cells. *J Physiol* **Volume 559, Number 2, 555-565, September 1, 2004**
- 38) Mundorf ML, Hochstetler SE, Wightman RM.: Amine weak bases disrupt vesicular storage and promote exocytosis in chromaffin cells. *J Neurochem.* **1999 Dec;73(6):2397-405**
- 39) Bryszewska M, Szosland K.: Association between the glycation of erythrocyte membrane proteins and membrane fluidity. *Clin Biochem.* **1988 Jan;21(1):49-51**
- 40) McMillan DE, Utterback NG, La Puma J. Reduced erythrocyte deformability in diabetes. *Diabetes.* **1978 Sep;27(9):895-901.**
- 41) Miller JA, Gravalles E, Bunn HF: Nonenzymatic glycosylation of erythrocyte membrane proteins. Relevance to diabetes. *J Clin Invest.* **1980 Apr;65(4):896-901**
- 42) Fernández-López JA, Casado J, Argilés JM, Alemany M.: In the rat, intestinal lymph carries a significant amount of ingested glucose into the bloodstream. *Arch Int Physiol Biochim Biophys.* **1992 May-Jun;100(3):231-6.**
- (43) Yerer MB, Yapislar H, Aydogan S, Yalcin O, Baskurt OK. Lipid peroxidation and deformability of red blood cells in experimental sepsis in rats: the protective effects of melatonin. *Clin. Hemorheol Microcirc* **2004; 30:77- 82.**
- (44) Jain SK.: Evidence for membrane lipid peroxidation during the in vivo aging of human erythrocytes. *Biochim Biophys Acta.* **1988 Jan 22;937(2):205-10.**
- (45) Richards RS, Wang L, Jelinek H.: Erythrocyte oxidative damage in chronic fatigue syndrome. *Arch Med Res.* **2007 Jan;38(1):94-8. Epub 2006 Nov 3.**
- 46) Broncel M, et al: The erythrocyte membrane structure in patients with mixed hyperlipidemia. *Wiad Lek.* **2007;60(1-2):4-9**
- 47) N. Babu: Influence of hypercholesterolemia on deformability and shape parameters of erythrocytes in hyperglycemic subjects. *Clin Hemorheol Microcirc.* **2009;41(3):169-77**
- 48) Muzulu SI, Bing RF, Norman RI. Human erythrocyte membrane fluidity and calcium pump activity in primary combined hyperlipidaemia. *Clin Sci* **1995;88:307-10.**
- 49) Tuvia S, Moses A, Gulayev N, Levin S, Korenstein R. Beta-adrenergic agonists regulate cell membrane fluctuations of human erythrocytes. *J Physiol.* **1999 May 1;516 (Pt 3):781-92**
- 50) Oonishi T, Sakashita K, Uyesaka N.: Regulation of red blood cell filterability by Ca²⁺ influx and cAMP-mediated signaling pathways. *Am J Physiol.* **1997 Dec;273(6 Pt 1):C1828-34**
- 51) Yova D., Haritou M., Koutsouris D.: Antagonistic Effects of Epinephrine and Helium-Neon (He-Ne) Laser Irradiation on Red Blood Cells Deformability. *Clin. Hemorheol.*, **vol 14, No 3, pp. 369-378, 1994.**
- 52) Raff H, Jacobson L: Glucocorticoid feedback control of corticotropin in the hypoxic neonatal rat. *J Endocrinol.* **2007 Feb;192(2):453-8**
- 53) Lai JC, Kakuta I, Mok HO, Rummer JL, Randall D.: Effects of moderate and substantial hypoxia on erythropoietin levels in rainbow trout kidney and spleen. *J Exp Biol.* **2006 Jul;209(Pt 14):2734-8**
- 54) Watanabe M, Hayasaki H, Tamayama T, Shimada M: Histologic distribution of insulin and glucagon receptors. *Braz J Med Biol Res.* **1998 Feb;31(2):243-56**
- 55) Butler, A.E., et al. Beta-cell deficit and increased beta-cell apoptosis in humans with type 2 diabetes. *Diabetes.* **2003 Jan; 52(1):102-10**
- 56) Yoon, K.H., et al.. Selective beta-cell loss and alpha-cell expansion in patients with type 2

- diabetes mellitus in Korea. *J. Clin. Endocrinol. Metab.* **2003 88:2300–2308.**
- 57) MACLEAN N, OGILVIE RF.: Quantitative estimation of the pancreatic islet tissue in diabetic subjects. *Diabetes.* **1955 Sep-Oct;4(5):367-76**
- 58) Consoli A, Nurjhan N, Reilly JJ Jr, Bier DM, Gerich JE. Mechanism of increased gluconeogenesis in noninsulin-dependent diabetes mellitus: role of alterations in systemic, hepatic, and muscle lactate and alanine metabolism. *J Clin Invest* **1990; 86:2038-45.**
- 59) Chen YD, Varasteh BB, Reaven GM.: Plasma lactate concentration in obesity and type 2 diabetes. *Diabete Metab.* **1993 Jul-Aug;19(4):348-54**
- 60) JOSEPH R. WILLIAMSON, et al: Hyperglycemic Pseudohypoxia and Diabetic Complications. *DIABETES*, **1993 VOL. 42, JUNE**
- 61) Y. Ido, C. Kilo, J.R. Williamson: Cytosolic NADH/NAD⁺, free radicals, and vascular dysfunction in early diabetes mellitus. *Diabetologia* (1997) **40: S115–S117**
- 62) Thomas MC, MacIsaac RJ, Tsalamandris C, Power D, Jerums G.: Unrecognized anemia in patients with diabetes: a cross-sectional survey. *Diabetes Care.* **2003 Apr;26(4):1164-9.**
- 63) Sieg A., et al: Epinephrine-induced hyperpolarization of islet cells without KATP channels. *Am J Physiol Endocrinol Metab* **286: E463–E471, 2004.**
- 64) Andersen HB, Raben A, Astrup A, Christensen NJ. Plasma adrenaline concentration is lower in post-obese than in neverobese women in the basal state, in response to sham-feeding and after food intake. *Clin Sci* **1993; 87: 69 ± 74.**
- 65) Gromada J., et al: Adrenaline Stimulates Glucagon Secretion in Pancreatic A-Cells by Increasing the Ca²⁺ Current and the Number of Granules Close to the L-Type Ca²⁺ Channels. *J. Gen. Physiol.* **Volume 110 September 1997 217–228**
- 66) Mokuda O, Sakamoto Y, Kawagoe R, Ubukata E, Shimizu N.: Epinephrine augments cortisol secretion from isolated perfused adrenal glands of guinea pigs. *Am J Physiol.* **1992 Jun;262(6 Pt 1):E806-9**