

Maier, V.; Fuchs, J.; Pfeiffer, E. F.; Bounias, M. **Glucagon as a non species-specific regulator of the glycaemia in honeybee (*Apis mellifica*)**. *Diabete et Metabolisme* (1990) 16 (5) 428-434 [En, fr, Bc] Medizinische Universitätsklinik und Poliklinik, Abteilung Innere Medizin I, Universität Ulm, Robert-Koch-Strasse 8, 7900 Ulm, Germany.

OBP. Walker.

Studies were made in France on newly emerged workers and in Germany on workers of known age kept in a controlled environment. Samples of 1 <micro>l blood were collected from individual bees using a microsyringe; further samples could be taken 1 h and 2 h later (but taking more than 3 samples damaged the bee). The major blood sugars were determined by GC (Germany) and TLC (France). Changes in blood sugars were determined after the injection of 0.5 <micro>l porcine glucagon/young bee (France) or 1 <micro>l purified endogenous glucagon/older bee (Germany). It is concluded that glucagon may be partly responsible for regulating sugar metabolism, and may be a key hormone in the degradation of glycogen stores.

Bounias, M. Kinetic study of the inhibition of the honeybee haemolymph α-glucosidase in vitro by BAYe 4609, BAYg 5421 and BAYn 5595. *Biochemical Pharmacology* (1982) 31 (17) 2769-2775 [En, B]

Three therapeutic inhibitors of vertebrate α-glucosidases recently assayed in research on diabetes control, showed high inhibitory potencies towards the p-NP-α-D-glucosidase activity of honeybee blood. The inhibitory ability and corresponding kinetic mechanisms are reported for BAYe 4609, BAYg 5421 and BAYn 5595. The results are compared with their action on vertebrate enzymes. It is concluded that honeybee blood α-glucosidases might provide an adequate cheap material for screening the potency of new enzyme inhibitors and for studying their structure and mechanisms of action. P. Walker.

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Daker, M. N.; Sabbagh, M. M. **Honey and diabetes mellitus.** *Police Magazine, Syria* (1973) 9 (97/98) 46-49 [Ar, EB] Review article mentioning Tobiasch & Kilian, AA 311/55, and others.

Maier, V.; Mezger, S.; Pfeifle, B.; Fuchs, J.; Haug, C.; Scherbaum, W.; Herzlitzius, H.; Pfeiffer, E.-F. **Isolation, biological activity and immunohistochemical localisation of insulin in the honeybee (*Apis mellifica*).** *Diabetes 1985* [edited by Serrano-Rios, M.; Lefebvre, P.J.]. Amsterdam, Netherlands; Elsevier Science Publishers BV. (1986) 1101-1105 [En, Bc]

Whole honeybees were homogenized and then extracted by the Fisher-Scott procedure (protecting the hormones from proteolytic enzymes). After several precipitations and washings with ether and acetone a yellow powder was obtained and this was subjected to gel chromatography. Further chromatography of the combined insulin-containing fractions showed that the elution volume of the insulin was similar to that of porcine insulin. Its immunological behaviour was also similar. A rat fat-cell assay demonstrated its biological activity. The site of production of insulin in the honeybee body is not yet known, but immunohistochemistry showed the presence of insulin-like material in the "eyestalk". P. Walker.

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* Shkenderov, S.; Ivanov, Ts. **Bee products.** Sofia, Bulgaria; Zemizdat. (1983) 238 pp.
[Bg, en\ ru, Bd]

The authors review current knowledge on the origins, chemical composition, physico-chemical, biological and pharmacological properties, and therapeutic uses of honey, honeybee venom, propolis, royal jelly, beeswax and pollen. They also survey processes for their isolation, preparation and storage, and the problems involved in standardization and quality control. The pharmacological properties of honey which are described include its antibacterial and antiprotozoal activities, and its therapeutic use in diets. Constraints on its use (diabetes mellitus, obesity and hypersensitivity) are dealt with, as is the tendency to exaggerate its beneficial effects. The components of venom, especially peptides, are discussed in detail, and clinical experiences in the application of bee venom to patients with various ailments are described; allergic reactions to bee venom are also dealt with. Various pharmacological and biochemical properties of royal jelly (many of them slight or variably manifested) are described. The inhibition of microorganisms by propolis is discussed in detail. There are many references in the text to the data of the authors and others, but the book contains only a relatively short literature list (47 items). D.G. Lowe.

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