Endocrinology and metabolism
Discovering the inner workings of the body diagnosis and treatment

Endocrinology is the branch of medicine and biology dealing with the regulation of body functions by hormones and other biochemicals, and the treatment of endocrine system imbalances. It is a complex area of the life sciences that calls on the many disciplines that are present in the BioAlps cluster. The global market for endocrinology drugs is divided into market segments including: diabetes, growth-hormone, acromegaly and hypogonadism. All of these are growing markets with exciting developments in new molecules, drug formulation and drug delivery systems. The world market for diabetes medications will reach $55.3bn in 2017, the growth hormone market alone is estimated to reach US$ 11.2 billion worldwide by 2018 while the infertility market will reach US$ 1.5 billion by 2017.

Novartis and Sanofi are among the companies within the BioAlps cluster which have developed specific products to manage diabetes. The World Health Organization (WHO), based in Geneva, estimates that diabetes will be the 7th leading cause of death in 2030, with developing countries taking on a much greater share of the burden of disease. Type 1 diabetes is caused by the body’s inability to make insulin, required to regulate glucose content. Type 2 diabetes results from the body’s ineffective use of insulin. People with diabetes require regular monitoring and ongoing treatment to maintain blood sugar levels, creating demand for the development of new micro- and medical technologies, software and drugs to manage the condition better.

The universities and research institutions in the BioAlps have centers of expertise in metabolism, endocrinology and diabetology, spanning basic and applied research, diagnostics and clinical practice. The National Center of Competence in Research (NCCR) “TransCure – From Transport Physiology to Identification of Therapeutic Targets” with the leading house at the University of Bern, seeks to integrate the disciplines of physiology, structural biology and chemistry to understand how malfunctions in transport proteins and ion channels may contribute to the occurrence of diseases like diabetes, osteoporosis and neurodegeneration.

The BioAlps region is highly innovative, with competencies across the field of endocrinology and metabolism. Indeed, the first ever recombinant hormone registered, Gonal-F® to treat infertility, was developed in the region by Merck Serono who subsequently developed other leading recombinant treatments for infertility. The region hosts another market leader in infertility, Ferring, as well as several start-ups such as PregLem, acquired by Gedeon Richter, and ObsEva, also specialised in women’s reproductive health.

THE UNIVERSITY HOSPITALS IN GENEVA, LAUSANNE AND BERN ARE AMONG THE FIRST IN THE WORLD TO DEVELOP PATIENT-CENTERED APPROACHES TO THE TREATMENT OF DIABETES, WHETHER FOR OLDER OR YOUNGER PATIENTS.

RESEARCH, TECHNICAL AND CLINICAL KNOWLEDGE ALL WITHIN EASY REACH IN THE REGION

The wealth of knowledge and expertise in the small geographic BioAlps region lies in the research institutions, teaching and research hospitals, and companies, who all collaborate and compete in an environment highly conducive to creating products and opening new market opportunities.

The lists below are non exhaustive and showcase some examples of the work being done in the region. Find more information in our extensive databases: www.bioalps.org/database and, for the six Alpine regions, www.alpslifesciencesearch.com

ACADEMIC INSTITUTIONS AT THE FOREFRONT OF ENDOCRINOLOGY IN WESTERN SWITZERLAND

University of Lausanne UNIL
Department of Endocrinology, Diabetology and Metabolism
Pediatric obesity, diabetes and early diagnosis
www.unil.ch

University Hospital of Lausanne CHUV
Department of Medicine Cell Physiology and Metabolism
Experimental models including myocardial infarct, pancreatic islet cells transplantation and diabetes and rheumatoid arthritis
www.chuv.ch

University of Geneva UNIGE
Department of Integrative Systems Physiology LUSF
Nuclear and membrane receptors and associated cofactors role in control of metabolic pathways
www.unige.ch

University Hospitals of Geneva HUG
Laboratory of Integrative Systems Physiology LUSF
Genome scale metabolic models
www.hug.ch

Ecole Polytechnique de Lausanne EPFL
Laboratory of Computational Systems Biotechnology LCSB
Non-invasive measurement of metabolic processes and function
www.epfl.ch

Geneva Foundation for Medical Education and Research GFMER
WHO Collaborating Centre in Education and Research in Human Reproduction
Sexual health, maternal and child health
www.gfmer.ch

Centre suisse d’Electronique et de Microtechnique CSEM
Nanotechnology & Life Sciences Systems
BioMicrosystems – micro-cell reactors, toxicology, biobehavioral surface engineering
www.csem.ch

University of Bern UNIBE
Department of Endocrinology, Diabetes and Clinical Nutrition
Obesity, dyslipidaemia (disorders of fat metabolism), bone diseases, neuroendocrine tumours and inherited metabolic diseases

BIO-UR INTERNATIONAL
Mushroom cultivation for diabetes prevention
www.bio-ur.ch

MERCK SERONO
Hormones to treat growth deficiencies, infertility from follicular development to early pregnancy, phenylketonuria
www.merckserono.com

DEBIO TECH
Artificial Organs, micro- and nanotechnology, Drug Delivery Systems, Diagnostics and Medical Devices
www.debiotech.com

NOVARTIS
Diabetes
www.novartis.com

ETHICON
Medical devices and diagnostics to Improve surgical outcomes
www.ethicon.com

OBSEVA
Drugs to prevent pre-term birth, to enhance embryo implantation following ART and treat dysmenorrhea
www.obseva.com

ELI LILLY (SUISSE)
Drugs for the treatment of several additional growth disorders and for growth hormone deficiency in adults
www.lilly.ch

PREGLEM
Selective progesterone receptor modulator (SPRM); steroid sulfatase inhibitor (STS-I); Somatostatin Antagonist; c-Jun-N-Terminal Kinase Inhibitor for women’s reproductive health
www.preglem.com

FERRING
Hormones for obesity, fertility, gynecology and growth deficiency
www.ferring.com

SANOFI
Diabetes and CNS products
www.sanofi.com

GLAXOSMITHKLINE
Diabetes
www.glaxosmithkline.com

SERVIER
Drugs for treatment of diabetes
www.servier.ch

GENKYOTEX
NOX enzyme inhibitors for metabolic disorders
www.genkyotex.com

VIFOR PHARMA
Menopause and women’s health
www.viforpharma.ch

A SELECTION OF LARGE AND SMALL ENDOCRINOLOGY COMPANIES IN THE BIOALPS CLUSTER

BIOALPS CLUSTER

The fact sheet provides a view of the key players in the sector at any given time; it is not comprehensive and is subject to regular updates. This current edition was produced in Spring 2014.

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Schweizerische Eidgenossenschaft
Kantonale Staatskanzle
Kantonale Sezere
Kantonale seiere

Département fédéral de l’économie DFE
Secrétariat d’Etat à l’économie SECO