



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 2017¹, the growth hormone market alone is estimated to reach US\$ 11.2 billion worldwide by 2018² while the infertility market will reach US\$ 1.5 billion by 2017³.

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 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.

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.

¹ https://www.visiongain.com/Press_Release/405/Diabetes-drugs-market-will-reach-55-3bn-in-2017-with-further-growth-to-2023-predicts-visiongain-in-new-report

² <http://www.bionity.com/en/studies/9489/endocrinology-market-to-2018-advanced-injection-devices-for-growth-hormone-and-somatostatin-will-improve-ease-of-use-for-patients.html>

³ http://www.merck.de/company.merck.de/de/images/IR_2012_05_15_Capital_Markets_Day_Tewarie_tcm1613_93432.pdf?Version=



OBSEVA

Ernest Loumaye co-founded ObsEva in 2012 with industry veteran André Chollet. ObsEva is a specialty biopharmaceutical company dedicated to the development of innovative drugs for women's reproductive medicine. Nine months after ObsEva was founded, the company signed a licensing deal from Merck Serono to develop compounds for pre-term labor and concurrently closed a CHF 32 million Series-A financing round (€ 25.6 million). The Series A financing round was led by Sofinnova Partners, and co-led by Sofinnova Ventures and Novo A/S. Based conveniently in the center of a start-up campus, within easy range of larger companies and research institutions, ObsEva has benefitted from the close proximity in the region of the many experts in drug development, R&D, clinical medicine and finance to prosper at a fast rate.

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

The wealth of knowledge and expertise in the small geographic BioAlps region lie 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			www.chuv.ch
University of Geneva UNIGE	Department of Medicine Cell Physiology and Metabolism	Experimental models including myocardial infarct, pancreatic islet cells transplantation and diabetes and rheumatoid arthritis	www.unige.ch
University Hospitals of Geneva HUG			www.hug-ge.ch
Ecole Polytechnique de Lausanne EPFL	Laboratory of Integrative Systems Physiology LISP	Nuclear and membrane receptors and associated cofactors role in control of metabolic pathways	www.epfl.ch
	Laboratory of Computational Systems Biotechnology LCSB	Genome scale metabolic models	
	Laboratory for Metabolic and Functional Imaging LIFMET	Non-invasive measurement of metabolic processes and function	
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	BioMicrosystems – micro-cell reactors, toxicology, biofunctional surface engineering	www.csem.ch
	Systems	Medical devices and health monitoring devices	
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	www.endokrinologie.insel.ch/en/endocrinology-and-diabetology/
Bern University Hospital INSELSPIITAL			

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

BIO-UR INTERNATIONAL	Mushroom cultivation for diabetes prevention.	www.bio-Ur.ch	MERCK	Hormones to treat growth deficiencies, infertility from follicular development to early pregnancy, phenylketuronia	www.merckgroup.com
DEBIOTECH	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 obstetrics, fertility, gynecology and growth deficiency.	www.ferring.com	SANOFI	Diabetes and CNS products	www.sanofi.com
GLAXOSMITHKLINE	Diabetes	www.glaxosmithkline.ch	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

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 updated in Spring 2018.



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Confédération suisse
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Département fédéral de l'économie DFE
Secrétariat d'Etat à l'économie SECO

Address
Association BioAlps
c/o OPI
3, Chemin Pré-Fleuri
CH - 1228 Plan-les-Ouates

Tel. +41 (0) 22 304 40 40
Email contact@bioalps.org
Web www.bioalps.org