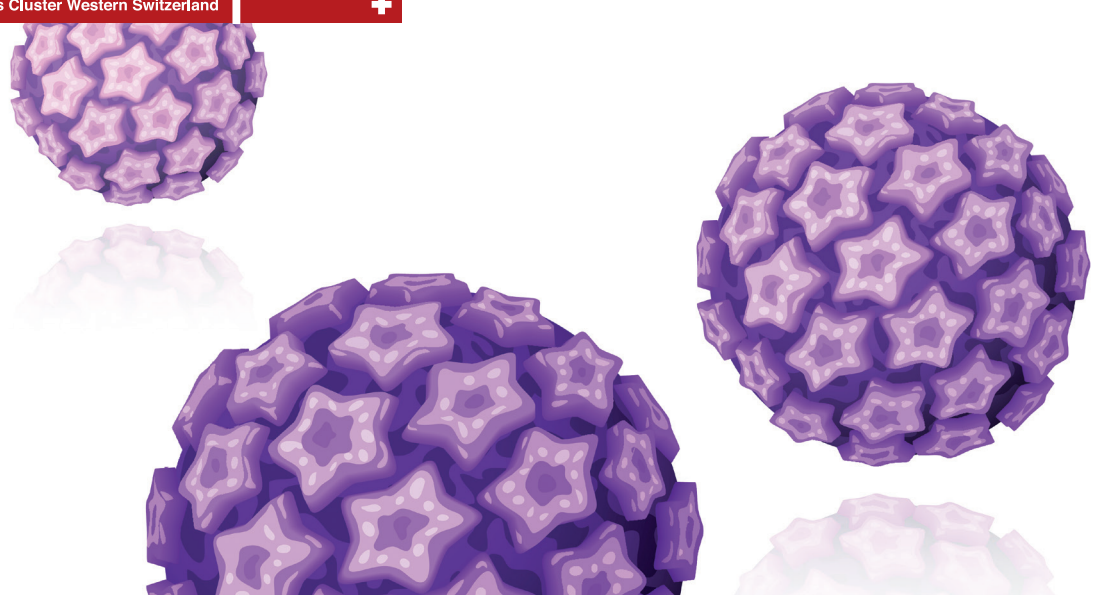
BioAlps

Life Sciences Cluster Western Switzerland



Oncology

Reinforcing multidisciplinarity

If recent trends in major cancers are seen globally in the future, the burden of cancer will increase to 22 million new case each year by 2030. This represents an increase of 75% compared to 2008 [1]. The BioAlps region is uniquely placed as a hub of multidisciplinary innovation in the field: pharmaceutical and biotechnology research and development, fundamental and clinical research, mechanical and informatics research and platforms all cross-fertilise to bring the best to healthcare systems.

The different universities in the cluster have world class research ranging from fundamental to clinical and translational research. Notably,

OF THE CHF 4.86 BILLION[2] SWISS MEDICINES MARKET, 9.8% ARE ONCOLOGY DRUGS. TODAY, 36.7% OF CANCER DRUGS IN SWITZERLAND ARE BIOTECHNOLOGY-DERIVED[3].

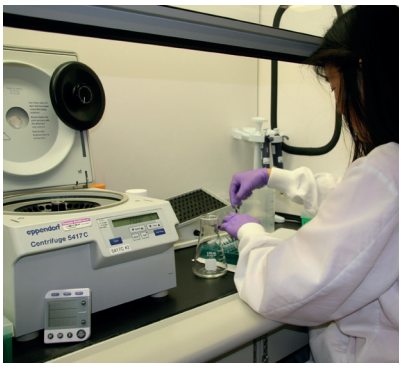
two well-respected cancer treatment drugs used internationally, oxaliplatin and triptorelin, were developed by Lausanne-based company Debiopharm. MerckSerono's state-of-the-art facility near Vevey produces another cancer drug, cetuximab.

The National Center of Competence in Research (NCCR)[3] in Molecular Oncology, a Swiss network research programme, aims to strengthen basic cancer research in Switzerland and to explore, in cooperation with partners in different university hospitals and the pharmaceutical industry, the possibilities for new cancer therapies. Led by the Swiss Institute for Experimental Cancer Research (ISREC) at the EPFL in Lausanne in close collaboration with several partner institutes, the programme is funded by the Swiss National Science Foundation.

The Swiss Group for Clinical Cancer Research (SAKK)[5], consists of a network of 20 clinical cancer research groups across Switzerland, with a coordinating centre in Bern. One of its projects is entitled "New Anticancer drugs", with an innovative model to discover new remedies.

The Swiss Cancer Centre, based in the Lausanne University Hospital (CHUV) is a joint effort of the CHUV, UNIL, EPFL and the ISREC Foundation. It will accommodate 400 researchers and clinicians on 11,500 m^2 as early as 2016, bringing ing together scientists and practitioners under one roof. It will pool resources in an effort to combat the disease: ground-breaking progress in understanding the mechanisms specific to each pathology, optimised management of targeted therapies, networking of advances benefiting patients under treatment [6].

[1] Lancet Oncol 2012 13(8) :790-801
[2] Pharma Markt Schweiz 2012, Interpharma
[3] Ibid.
[4] www.nccr-oncology.ch
[5] www.sakk.ch
[6] http://actu.epfl.ch/news/an-iconic-building-to-quicken-the-research-on-canc/



GENOMIC HEALTH: LEADERSHIP IN GENOMIC CANCER DIAGNOSTICS

Founded by biotech industry veteran Randy Scott in 2000 to develop efficient oncology diagnostics, United States-based Genomic Health started expanding out of the US and into worldwide markets eight years later. Geneva attracted the company in 2009, representing a place with easy access to technologies, knowledge and infrastructure. Genomic Health conducts sophisticated genomic studies and research to develop and commercialise clinically-validated molecular diagnostic tests, which provide individualised information on response to certain types of cancer therapy and the likelihood of disease recurrence. The company has commercially available tests for breast, colon and prostate cancer patients: the Oncotype DX for invasive breast, DCIS, colon, and prostate cancer assays are unique diagnostic tests that help patients and their physicians make more informed, individualised treatment decisions. Selected on several occasion to present in the "Best of Oncology" sessions at ASCO, Genomic Health's cancer assays are currently used all over the world.

MULTIDISCIPLINARITY A UNIQUE ADVANTAGE

Cancer research benefits from the many disciplines available in Western Switzerland. The proximity and dynamism of the region's research institutions, teaching and research private and public hospitals, commercial companies and technology platforms, provide an environment capable of bringing strong innovations to world markets.

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 ONCOLOGY IN WESTERN SWITZERLAND

Geneva University UNIGE	Department of Radio-oncology	Radiodiagnostics and interventional radiology	www.medecine.unige.ch
	Department of Pathology and Immunology	Epithelial tumours	pathology.unige.ch
Geneva University UNIGE & Geneva University Hospitals HUG	Centre de Recherche Clinique	Phase I-III clinical trials and physiopathology, including cancer trials	crc.hug-ge.ch
Ecole Polytechnique Fédérale de Lausanne EPFL	ISREC (Swiss Institute for Experimental Cancer Research)	Cell signaling in tumour development and metastasis; tumour angiogenesis; tumour immunity and cancer immunotherapy	isrec.epfl.ch
	CSEM (Centre Suisse d'Electronique et de Microtechnique)	Mechanical probing of cells; spectroscopy and microscopy of cancer cells	www.csem.ch
University of Bern UNIBE	Department of Medicine Clinical Research	Ovarian, hepatic, metastatic, pediatric oncology	www.dkf.unibe.ch
	Dr Joseph Steiner Cancer Research Foundation	Cancer research: new basic concepts, new diagnostic or therapeutic approaches and preventive methods	www.steinerstiftung.unibe.ch
Bern University Hospital INSELSPITAL	University Clinic for Medical Oncology	Mechanisms of cancer development: solid tumours, lymphoma, melanoma	www.onkologie.insel.ch
	University Clinic for Radiotherapy	External beam radiotherapy, intensity-modulated radiotherapy	www.kro.insel.ch
University of Lausanne UNIL	Department of Biochemistry	Discovery and functional characterization of pathways that govern cell division, cell differentiation, cell death and membrane fusion	www.unil.ch
University Hospital of Lausanne CHUV	Centre du Cancer	Cancer research and treatment (ambulatory oncology; oncology treatment; clinical investigation; experimental and translational research)	cancer-chuv.ch
UNIGE, UNIL, EPFL, CHUV, HUG	CIBM (Centre d' Imagerie BioMédicale)	Medical imaging	www.cibm.ch

SAMPLE LIST OF LARGE AND SMALL COMPANIES INVOLVED IN ONCOLOGY IN THE BIOALPS CLUSTER

ADC THERAPEUTICS	Antibody drug conjugates for treatment of solid and hematological cancers	www.adctherapeutics.com	**LONZA**	Highly active pharmaceutical ingredients (HAPIs) for cancer treatment	www.lonza.com
AMAL THERAPEUTICS	Peptide-based therapeutic cancer vaccines	www.amaltherapeutics.com	**MAXIVAX**	Encapsulated cellular cancer immunotherapy	www.maxivax.ch
CELGENE	Immuno-oncology therapies - hematological and solid tumors	www.celgene.eu	**MEDDISCOVERY**	Protein drugs for uro-genital cancers	www.med-discovery.com
CELLESTIA BIOTECH	NOTCH inhibitor anti-cancer drugs	www.cellestia.com	**MERCK**	Targeted biotechnology cancer therapeutic manufacturing	www.merckgroup.com
DEBIOPHARM GROUP	Peptide research, drug delivery, personalized medicine	www.debiopharm.com	**PHI PHARMA**	Peptide drug conjugates against leukemia	www.phi-pharma.com
DIAGNOPLEX	Colorectal cancer screening	www.diagnoplex.com	**PFM MEDICAL**	Valves and catheters for administering cytotoxic agents	www.pfmmedical.com
GENOMIC HEALTH	Diagnostic tests for breast, colon and prostate cancer	www.genomichealth.com	**SANOFI**	Chemotherapy and therapeutic agents for different cancers	www.sanofi-aventis.ch
INCYTE INTERNATIONAL	Therapeutics small molecules for immuno-oncology treatment	www.incyte.com	**STEMERGIE BIOTECHNOLOGY**	Treatments and diagnostics by targeting cancer-initiating cells	www.stemergie.com

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.

BioAlps is supported by the Cantons of Berne, Fribourg, Vaud, Neuchâtel, Geneva, Valais and Jura, the Swiss State Secretariat for Economic Affairs (SECO), and by all key research institutions in the region.

Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

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*