Research at the Department of Life Sciences and Medicine (DLSM) seeks fundamental understanding of human diseases to help us detect, prevent and treat illnesses. Combining molecular, cellular and computational approaches we look deeply into how cells communicate, differentiate, migrate, renew themselves and function. Central to this is gaining knowledge of the signals cells receive from their environment. Many high impact diseases are caused by abnormal cell communication and behaviour, including cancer and inflammatory diseases.

CONTACT

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CAMPUS

Belval, Biotech I
7, av. des Hauts-Fourneaux
L-4362 Esch-sur-Alzette

Belval, Biotech II
6, avenue du Swing
L-4367 Belvaux

MEMBERS

• 8 professors and associate professors
• 30 post-docs and research scientists
• 19 doctoral candidates
• 19 technical and administrative staff

FUNDING AND COLLABORATIONS

• Third party income 2019-2020: €3.1 million
• More than 40 national & international collaborations with research institutions, universities, companies & hospitals

PUBLICATIONS

• 77 peer-reviewed articles in scientific journals (2019-2020)
Research areas

CANCER CELL BIOLOGY & DRUG DISCOVERY
- Drug targeting of RAS signalling
- Molecular cell biology of RASopathies
- Cancer cell biology of RAS associated stemness traits

IMMUNE CELLS & INFLAMMATORY DISEASES
- Role of neutrophils in rheumatoid arthritis
- Intracellular and extracellular role of S100A8/A9 in neutrophil pro-inflammatory functions

MOLECULAR DISEASE MECHANISMS
- Molecular mechanisms underlying colon cancer initiation and development
- Role of the microenvironment and environmental factors on colon cancer
- Identification of biomarkers and therapeutic targets in colon cancer

SIGNAL TRANSDUCTION
- Intercellular communication in cancer
- Cytokine signal transduction
- MiRNAs and long non-coding RNAs
- Drug screening in 3D cancer models
- Metabolic rewiring in cancer

SYSTEMS BIOLOGY
- Model based Data Integration and Analysis of Disease specific Networks
- Tool development
- Cancer specific signaling networks and multi-scale modeling of cancer
- Integrated modelling and epigenetic regulation of metabolism
- Data mining of human clinical and cohort data