

# IMMUNE REGULATION

## UNLOCKING THE SECRETS OF THE IMMUNE SYSTEM

- Medicon Valley has a long history of developing vaccines, antibodies and treatments for autoimmune diseases
- Treatments for diseases, such as cancer, psoriasis and Alzheimer's, which affect millions, remain limited
- A holistic approach to immune regulation is key to the effective treatment of immune system disorders

### What is immune regulation?

The immune system protects the body by responding to foreign organisms and substances (known as antigens), which invade the body and cause disease or infection.

When the immune system fails to function properly, it can lead to a range of disorders such as allergies, cancer, autoimmune and immunodeficiency diseases.

Autoimmune diseases include disabling inflammatory chronic diseases such as diabetes and arthritis, several skin diseases including psoriasis and dermatitis, and chronic neurological diseases including multiple sclerosis and Alzheimer's disease. AIDS is an example of an immunodeficiency disease.

Immune regulation enables the treatment of these disorders by blocking or controlling immune responses. It also plays a vital role during organ transplants and in the development of new vaccines.

### Why focus on immune regulation?

Millions of people around the world suffer from chronic diseases caused by immune system disorders, creating a huge demand for effective and safe treatments.

Increasing our understanding of immune regulation opens the door for manipulating and regulating the immune system in a therapeutically desirable manner.

Within oncology there are, for instance, several promising signs that immunotherapies can be used to treat or slow down the progression of cancer by manipulating the patient's immune system to specifically target cancerous cells.

Moreover, there is a big need for increasing the success rates of organ transplants given the considerable gap between the number of those in need of new organs and the number of organ donors. Developing effective immune suppressive agents is fundamental to this.

Finally, immune regulation also holds the key to producing new and better vaccines.

### Strongholds in Medicon Valley

Medicon Valley has a strong tradition within both basic and clinical immunological research to build on. Several researchers are internationally recognized and cutting-edge research is taking place at the regional universities.

Numerous pharmaceutical and biotechnological companies in the region are also engaged in developing ways to treat immunological diseases while several diagnostic companies in the region have products and R&D projects related to immunology.

As such, there is considerable potential in Medicon Valley for pushing the boundaries within immune regulation by encouraging all these players to collaborate more closely.



IMMUNE  
REGULATION



STRUCTURAL  
BIOLOGY



SYSTEMS  
BIOLOGY



DRUG  
DELIVERY



INDEPENDENT  
LIVING