



Connecting to Patients own Immunity

A project hosted by



Introduction



- Over 85% of the world population is vaccinated against tetanus
- Tetanus vaccination leads to a long lasting and strong immunity

Tetanus immunity saved millions of lives, but...

...in our opinion it is absolutely underemployed.

Our concept is to exploit the tetanus immunity for **passive and **active vaccination**.**

ImmUnion develops active and passive vaccines that use the potential of a patient's existing tetanus immunity to protect themselves against new pathogens.

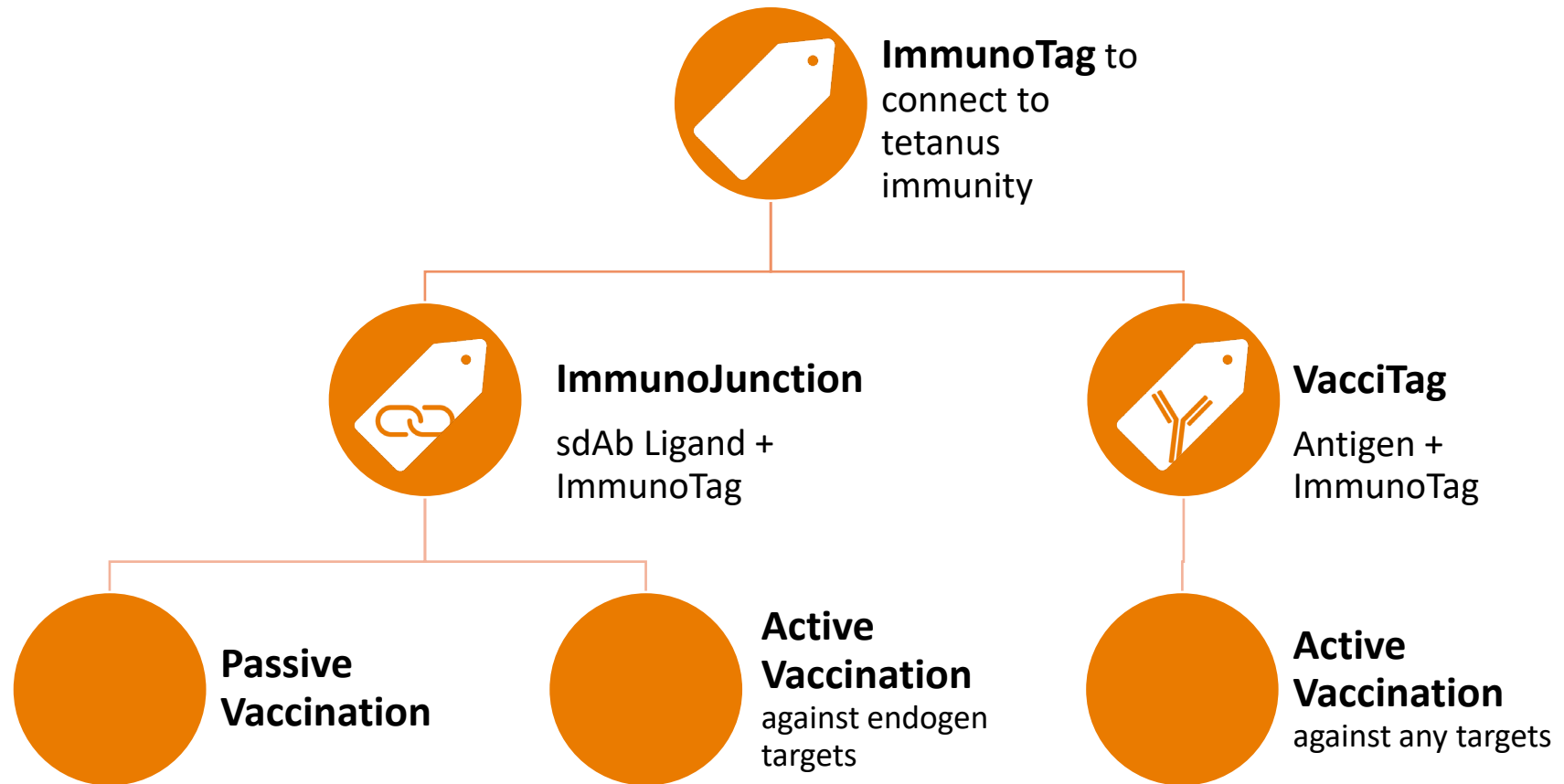


VacciTag is the platform for novel vaccine formulations which are activated by tetanus immunity and thus become effective in a wide variety of routes.



ImmunoJunction are tiny antibody domains that connect to the tetanus antibodies and use them to protect against new pathogens.

ImmunoJunction and VacciTag



Key Aspects



ImmunoJunction and Vaccitag can be formulated in different dosage forms:

- **Nucleic Acids (DNA/RNA)**
- **Soluble Protein**
- **Live Bacteria Formulation**



ImmunoJunction and Vaccitag are available by different administration routes.

This opens new opportunities for active and passive vaccination.

How it works...

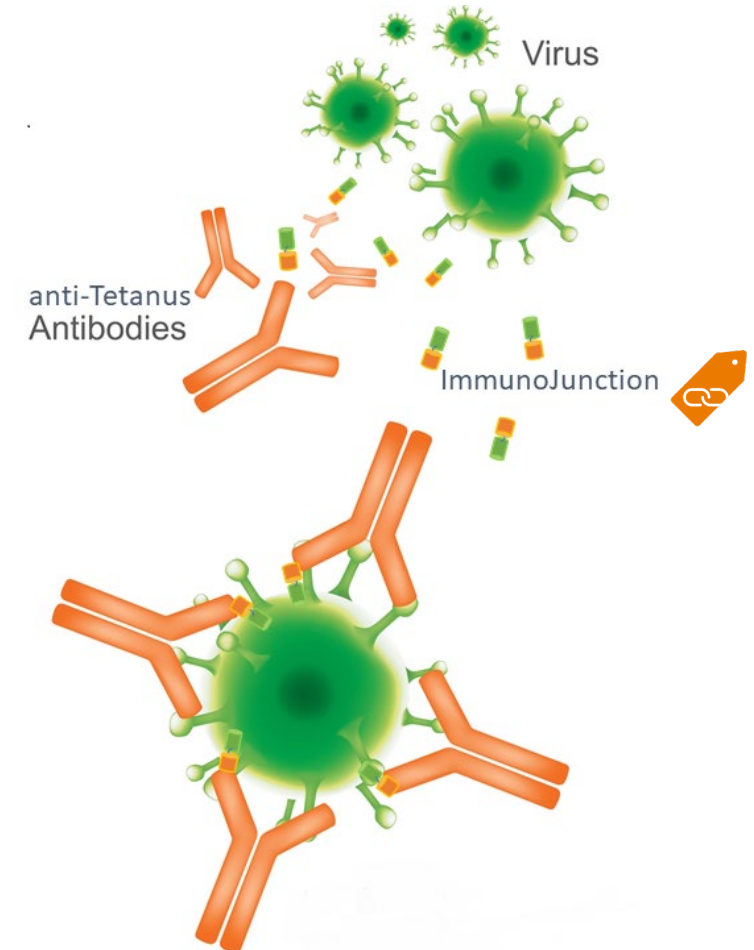


The sdAb ligand of ImmunoJunction binds to the antigen and VacciTag is directly fused to the antigen.

Tetanus specific antibodies recognize the ImmunoTag of ImmunoJunction or VacciTag.

The tetanus antibodies binds the antigen via the ImmunoTag which leads to opsonization, neutralisation and/or agglutination.

Macrophages and dendritic cells get opsonized by the tetanus antibodies and the cellular immunity gets activated.



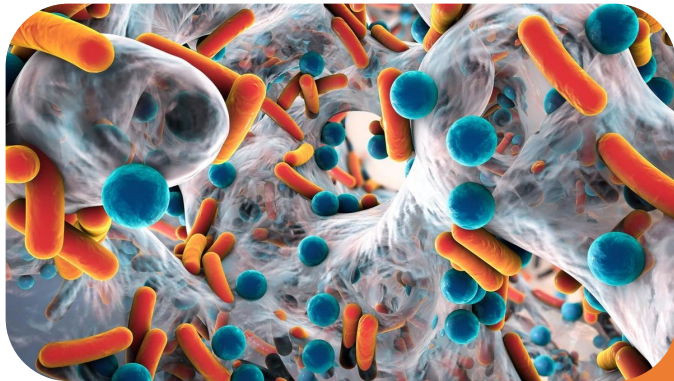
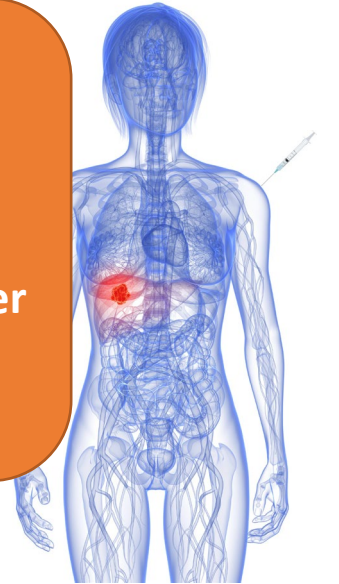
Advantages of ImmunoJunction



ImmunoJunction can be administered via the mucosal routes and recruits all immunoglobulin classes including IgG, IgM and IgA.



ImmunoJunction brings the adjuvant to the antigen and enables to vaccinate against endogenous antigens. Which could be an important option for the treatment of cancer or chronic infections like hepatitis C.

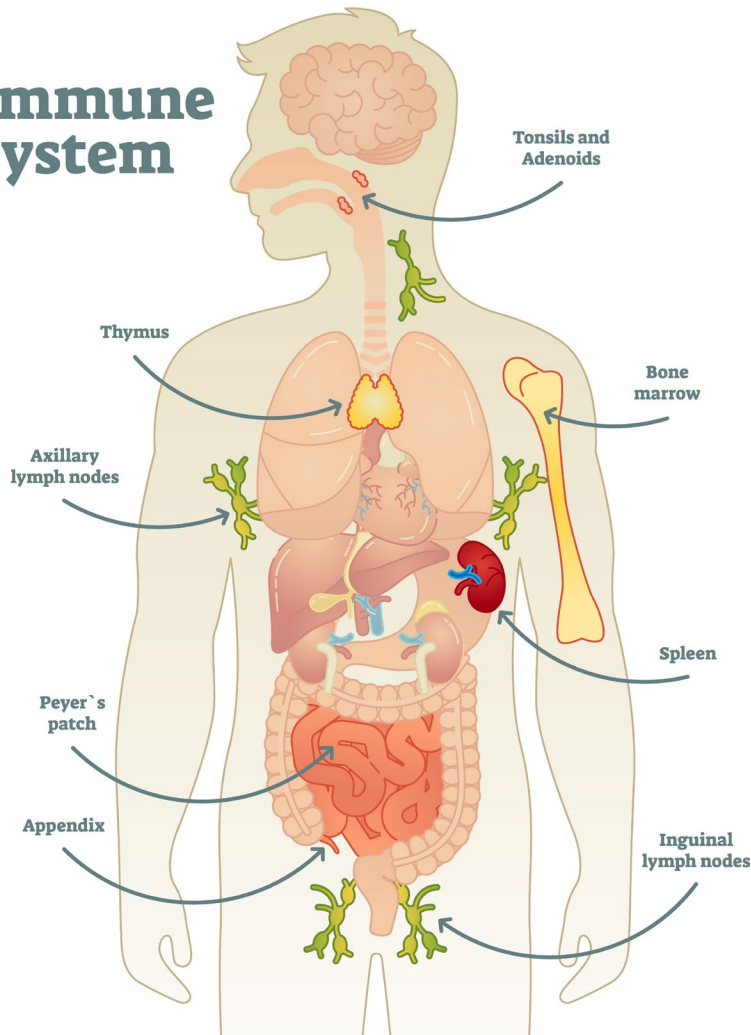


ImmunoJunction is flexible concerning the production host (bacteria, yeast or patient's body cells), which leads to low production costs and opens the opportunity of **Live Bacteria Passive Vaccination**.

Advantages of VacciTag



Immune system



- **Flexible in dosage form and production**
 - ✓ For every antigen the optimal administration route can be chosen.
 - ✓ Low production costs and high production volume can be achieved.
- **High immunogenic potential and is well tolerated**
 - ✓ Leads to a direct immune response after prime immunization.
 - ✓ No need for additional adjuvant – free of additives

Business Model



Collaborative Approach: **ImmUnion** connects different players for vaccine development



Partners for targets and indications

(sdAb or antigene sequences)

- University of Parma
- Karolinska Institute
- University of Potsdam
- Fraunhofer IZI
- ...

Partners for dosage forms development

- RNA: N.N.
- DNA: N.N.
- Proteins: in negotiation
- Live Bacteria: in negotiation

Partners for GLP-production, clinical studies and market distribution

- RNA: N.N.
- DNA: N.N.
- Proteins: N.N.
- Live Bacteria: N.N.