

# How to kill bacteria with a virus?

## Use phage therapy!

### Status of phage therapy in Switzerland

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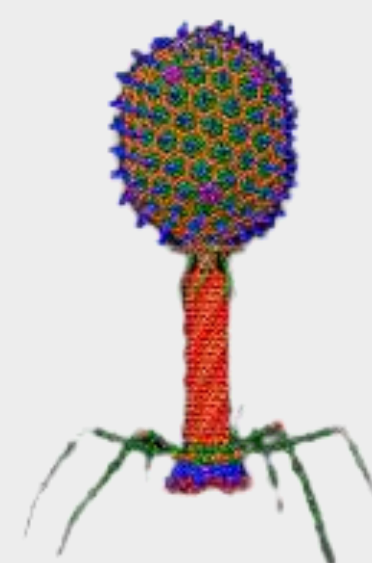
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#### Bacteriophages & phageSuisse

- **Phages** have been used to treat bacterial infections for more than 100 years and are considered as drugs subject to:
  - Therapeutics Products Act (TPA)
  - Medicinal Products Licensing Ordinance (MLPO)
- **phageSuisse** is a non-profit organization promoting research on human phage therapy, providing a platform to exchange knowledge, informing health authorities, politicians and population, and facilitating quality training



#### Perspectives of phage therapy

- Possible treatment option for patients with infections due to multidrug-resistant bacteria
- The future of phage therapy depends on maintenance/constant updating of collections:
  - ZHAW\*: expanding phage collection available
  - CHUV\*\*: extensive phage collection against hospital pathogens, working with the Cell Production Center Unit on a New Biologics License Application with Swissmedic

#### Patient Geneva 1†

1

- ♂ 58 y.
- **Recurrent prosthetic knee infection**
- Bacteria: *E. coli* + *E. faecalis*
- Phages: E4 + Efs7
- Source: ETH (Switzerland) + Queen Astrid Military Hospital (Belgium)
- Preparation: At the pharmacy
- Administration: Intravenous, intra-articular
- Outcome: Clearance of *E. faecalis*

#### MPLO – Art.49

- Import of non-authorised ready-to-use medicinal products by professionals
- No alternative medicine authorised in Switzerland

#### Patient Balgrist

2

- ♀ 57 y.
- **Recurrent urinary tract infection**
- Bacteria: *E. coli* + *E. faecalis*
- Phages: E2 + E4 + S10C + S1C
- Source: ETH (Switzerland)
- Preparation: At the bedside
- Administration: Intravesical
- Outcome: Clinical improvement

#### Experimental treatment in individual cases

- Quality testing, risk calculation, benefice-risk assessment

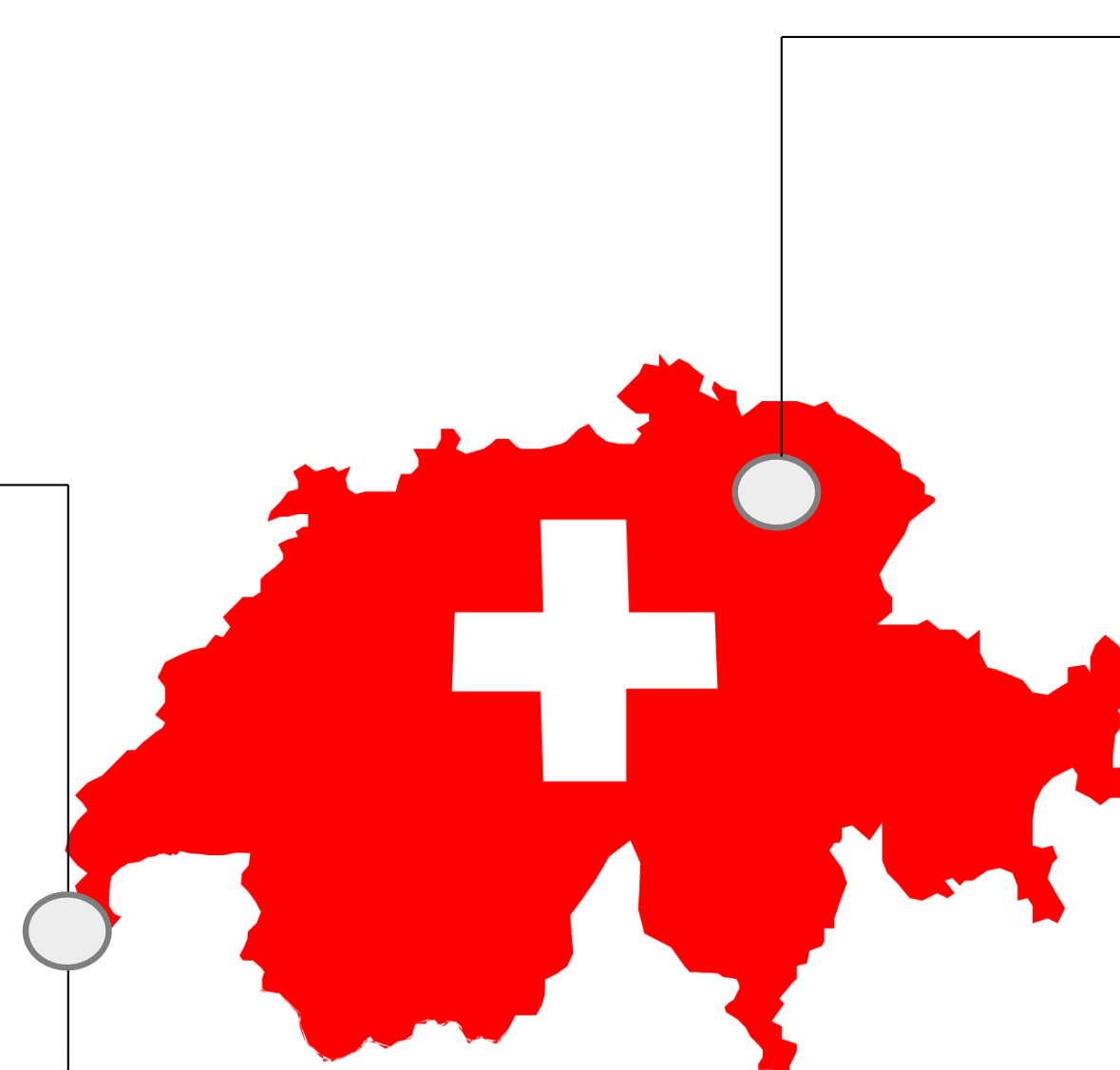
#### Patient Geneva 2

3

- ♂ 67 y.
- **Recurrent prosthetic hip infection**
- Bacterium: *S. aureus*
- Phages: PP1815 + PP1493
- Source: Pherecydes Pharma (France)
- Preparation: At the pharmacy
- Administration: Intra-articular
- Outcome: Clearance of *S. aureus*

#### MPLO – Art.8

- Importation of magistral preparation with cantonal manufacturing license



\* Prise en charge d'infections multi-résistantes par phagothérapie : retour d'expérience d'un premier cas (JFSPH 2022)

[https://pharmacie.hug.ch/rd/posters/phagothérapieHUG\\_JFSPH\\_22.pdf](https://pharmacie.hug.ch/rd/posters/phagothérapieHUG_JFSPH_22.pdf)

\*CHUV : Centre Hospitalier Universitaire Vaudois

\*\*ZHAW : Zürcher Hochschule für Angewandte Wissenschaften