



Strong together against infections
Science • Society • Industry

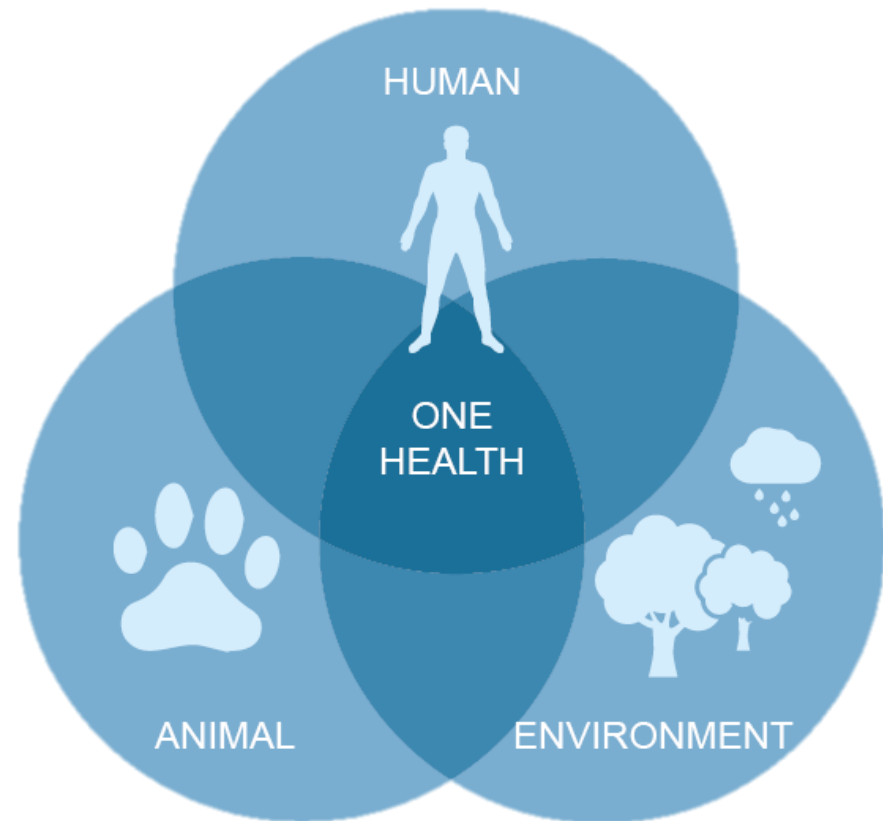
InfectControl: Investing in the One Health Approach

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One Health

“One Health is an interdisciplinary research approach that considers the link between human, animal, plant and environmental health with the aim of maintaining or restoring the health of these three areas.”



InfectControl: Transdisciplinary approach to fight infections

INFECT
CONTROL

Agriculture

Veterinary
Science



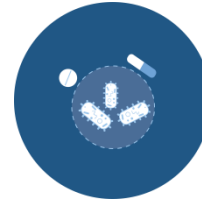
Industry

Transportation
Architecture



Climate
Research

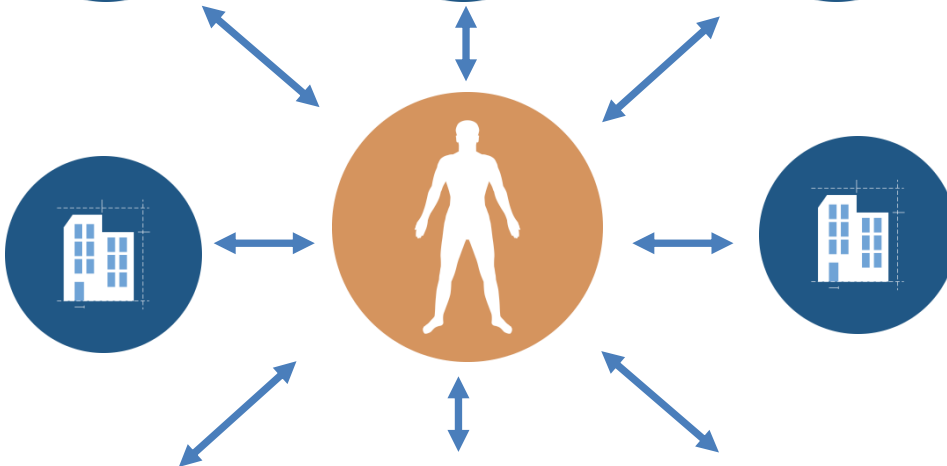
Health
care



Medical
Research



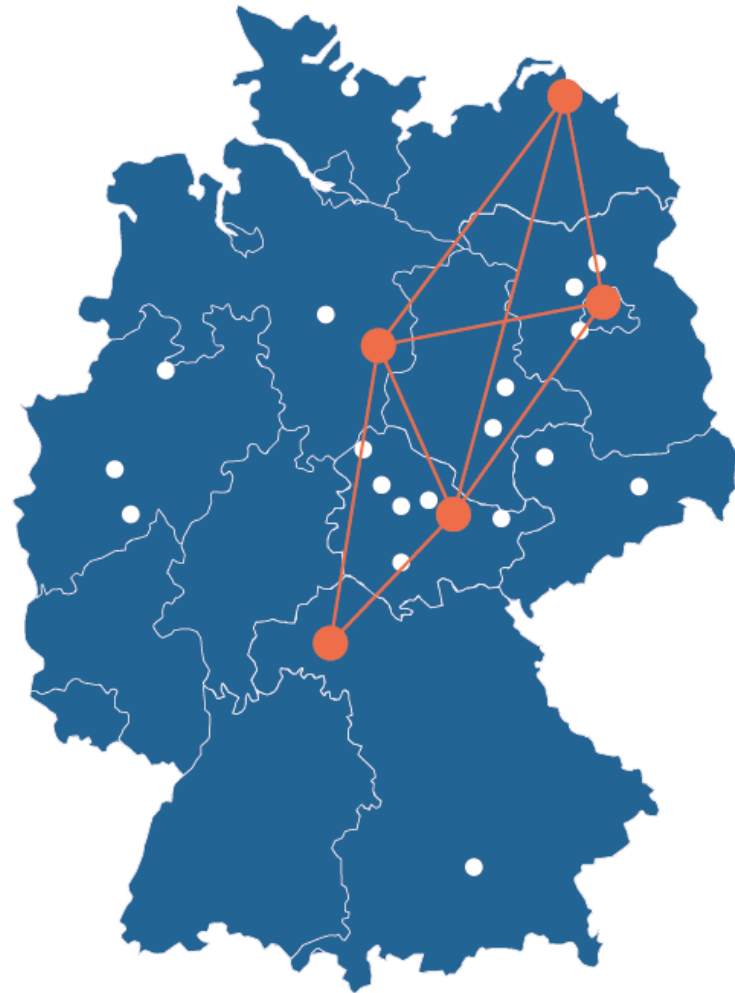
Communication
research



InfectControl: A Germany-wide consortium

Science • Society • Industry

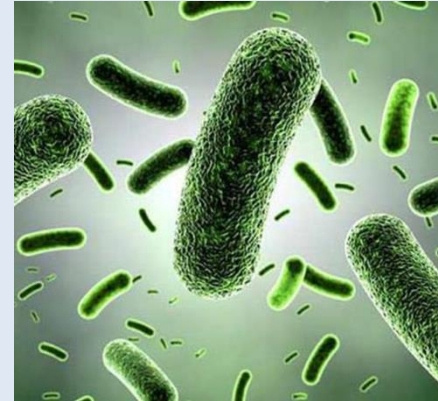
- Established 2015
- Funded by the BMBF
- A total of 37 projects have been initiated
- 34 industry partners
- 28 scientific partners
- 5 innovation laboratories
- Over 84 peer-reviewed publications
- 4 patents



Project Spotlight: **Development of a new tuberculosis antibiotic**

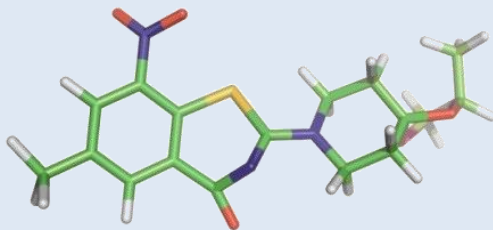
Resistant tuberculosis: a global threat

- 20 million lung TB patients worldwide
- 1.8 million deaths annually
- Highly resistant pathogens (MDR/XDR) are on the advance



Mycobacterium tuberculosis

Benzothiazinon: novel mode of action



- Active against XDR-tuberculosis-pathogens
- The clinic trail phase II is ongoing
- Novel mode of action

Close partnership between science and industry

Upscale of drug synthesis

- Kilogram scale established
- GMP certificate for the active ingredient (API) available



Development of a dosage form

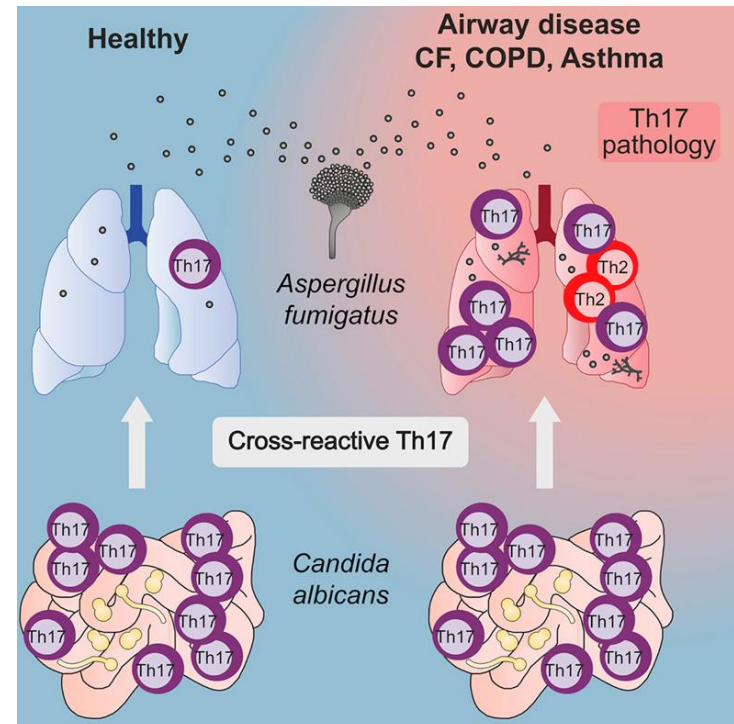
- Tablet (250 mg) developed (standard auxiliary agent)
- GMP production



Project Spotlight: Novel pathogen-specific T-cell diagnostics

Gut-lung axis: Modulation of lung inflammation by gut microbiota

- *Candida albicans* is the major fungal inducer of human Th17 responses
- Other fungal species rely on cross-reactive Th17 cells against *C. albicans*
- Intestinal inflammation expands *C. albicans*-specific and cross-reactive Th17 cells
- Cross-reactive Th17 cells contribute to *A. fumigatus*-driven non-intestinal inflammation



P. Bacher et al., Cell 2019, 176 (6), 1340

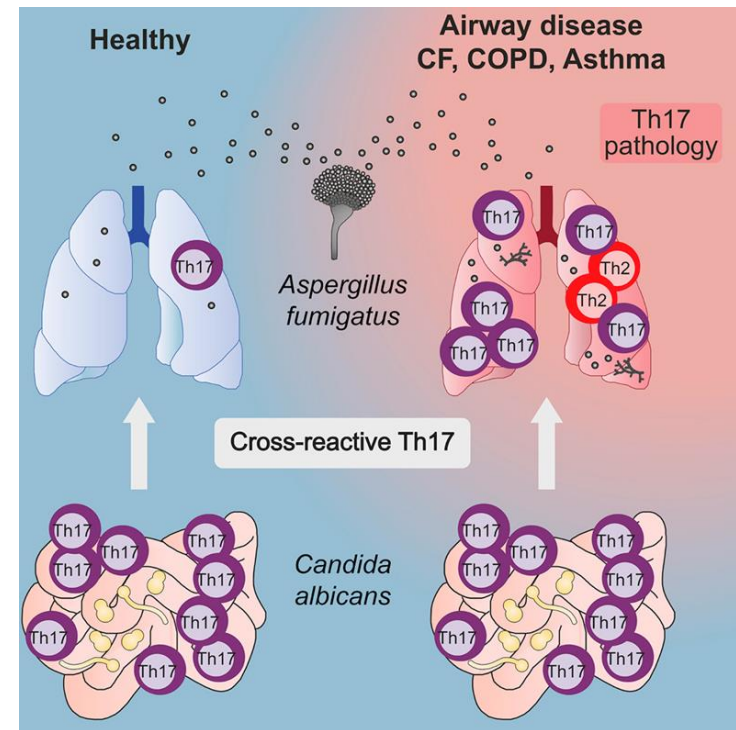
Project Spotlight: Novel pathogen-specific T-cell diagnostics

-> T-cell cross-reactivity is an important factor in human immune response

- Identification of potentially diagnostically relevant antigens of *Aspergillus fumigatus*
- Cross-reactivity between microbes as a pathogenic principle in fungus-associated diseases

Pre-existing T cell memory as a risk factor for severe COVID-19 in the elderly

(P. Bacher et al., medRxiv 2020.09.15.20188896)



P. Bacher et al., Cell 2019, 176 (6), 1340

InfectControl Corona Projects

Architectural solutions

Development of structural solutions to reduce the entry of the pathogen into hospitals or senior residences

Childcare study

Monitoring of infection incidences in childcare facilities. Which monitoring concepts can reduce the spread of infection?

Novel therapeutic concepts against SARS-CoV-2

Activation of human immune cells to recognize and eliminate the virus particles in the body



Speakers in this Session



Prof. Dr. Oliver Kurzai



Prof. Dr. Dr. h.c. Thomas
C. Mettenleiter



Prof. Dr. Petra Gastmeier



Dr. Wolfgang Sunder



Dr. Peter Schmid



Prof. Dr. Lothar H. Wieler

