



CENTAUR GLOBAL NETWORK

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To: (04) Food-borne, water-borne and air-borne diseases; (05) Zoonoses, general; (08) Mycobacterial diseases; (22) Veterinary administration

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**CGN minireviews on mycobacteria as a public health risk**

A new series, aimed at stimulating discussion on published literature dealing with the threat to public health posed by mycobacteria. Although some information of global significance has been known for decades, the risk posed by mycobacteria remains underestimated.

Prepared by the [Reference Laboratory for Paratuberculosis and Avian Tuberculosis](#) World Organization for Animal Health (OIE) and [Biomedical Technology, Epidemiology and Food Safety Global Network](#) operating in the Veterinary Research Institute, Brno, Czech Republic

We support the [One Health Initiative](#)

**(03) A risk, even hypothetical, has to be treated as a risk (K. Hruska, Brno)**

MAP and mycobacteria in general are harmful organisms or elements of bacterial origin. It does not matter if they are not culturable, really dead, or still revitalisable. Dozens of citations refer this fact indirectly, but fully convincingly. Even if accepted as a hypothetical risk, this fact should be managed as a risk. This is my primary premise. This does not exclude zoonotic infection, multifactorial chronic disease requiring genetic or environmental factors, bacterial triggers, previous sensitization of the immune system, a specific phenotype of MAP, stress or co-morbidity etc. Zoonoses or food born diseases are usually demonstrable as acute infections with typical clinical or laboratory consequences. Mycobacterioses, including tuberculosis and leprosy, differ from acute inflammatory diseases. Really, a peer-reviewed paper, dealing with the experimental proof of development of Crohn's disease or multiple sclerosis, cannot be expected. The administration of cooked MAP suspensions to newborn babies is not possible. Even if carried out, evaluation of the differences in disease incidence at the age of 20 would be needed. Multifactorial etiology, only partially ascribed pathogenesis, many possible sources of MAP or other peptidoglycan/MDP sources (milk, meat, water, aerosols, even vegetables and fish), different nosological units according to the locus minoris resistentiae, affected 10 years ago, etc.), make the problem extremely difficult. In my opinion, the key problem is to accept that mycobacteria pose a serious public health and global problem, different from outbreaks of salmonellosis, listeriosis, norovirus caused illness, or food allergy. Although we cannot kill mosquitos, bees, nuts, EHEC, the accepted risk has led to some measures to decrease the harmful effects of pathogens, toxins or allergens. Why do mycobacteria have a reputation of harmless organisms with the exception of obligatory pathogenic species? Why is the present understanding of inflammatory pathways based on immunology and molecular biology superseded by the formal classification of non-pathogenic mycobacteria, originating in the times of the absolutely validity of the Koch postulates? I do not know the answers, but I am sure that it is time for a change.

For references see the databases

[Publications on paratuberculosis](#)

Publications selected from the search results for (paratuberculosis OR Johne's OR Johnes) from the Web of Science®, published since 2007, are updated weekly. For free [registration](#) on-line for new records alerts mark field (08) Mycobacterial diseases

[Crohn's Disease Digest](#) is a database of selected papers on bacterial triggers and pro-inflammatory cytokines participating in etiology and pathogenesis of the CD.

**Next minireviews**

Mycobacteria ...

... in retail milk

... in water

... can be found all around, in every nook and cranny

... are distributed in bottled water

... play a role in an Island story

... even after their death can modulate inflammatory cytokines by means of their cell wall components

... were used for immunomodulation in Freund adjuvans already 65 years ago



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- ... are pathogens as well as allergens or immunomodulators
- ... could be a missing environmental factor in many etiological hypothesis
- ... are considerably heat and chlorine resistant
- ... have unusual characteristics of food, water, and air borne pathogens or immunomodulators similar to allergens

**See the introductory documents**

- [Paratuberculosis and Crohn's disease: Premises and open questions](#)
- [Infectious diseases incorporated FUIDI premises](#)

**See already published minireviews**

- [\(01\) Do you know, that mycobacteria may trigger asthma](#)
- [\(02\) Mycobacteria are present in milk and dairy products, including dried milk for formula feeding](#)

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