

# **The Paratuberculosis Newsletter**

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International Association for Paratuberculosis**

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### **DEADLINE FOR NEXT ISSUE: 15 November 2013**

All contributions should be sent to [saxmose@sund.ku.dk](mailto:saxmose@sund.ku.dk)

Søren Saxmose Nielsen  
Editor

## **1. IAP Business**

### **Open Access publication subsidy**

The appearance of the Open Access publication system can help the IAP to better fulfill its main objective of promoting and spreading the knowledge on paratuberculosis. Although this system has increasingly become a business that is posing a higher pressure to publish on researchers with some risk of decreasing the quality of the material being published, it still is a way to make research available to less wealthy societies that should help their scientists to stay current in the continuous flux of newly generated information. This perspective is fully in line with other IAP policies like the Helping Hand awards and has been approved by the Board of Directors, as well as discussed in the last General Membership meeting. In order to take advantage of this system regarding the costs of maintaining the highest possible scientific standards while putting to work the funds collected by the IAP, the following rules have been established.

IAP can pay one Open Access publication fee for papers on paratuberculosis according to the following terms:

- 1) The paper has been accepted by a peer-reviewed Open Access journal in English and both a copy of the paper and of the invoice is sent to the IAP. Priority will be given to journals in order of last published impact index.
- 2) Only one paper per group and year will be subsidized. A paper will be considered from a different group in the same year if it has: a) different senior author (generally the one signing last, with the higher number of papers and/or with higher position in the institution), and b) no more than half the authors signed a previously funded paper.
- 3) At least one among the first, second or the senior authors must be a member of the IAP in good standing.
- 4) Applications are accepted until an IAP fund of US\$10.000 per year is exhausted in a first come, first serve schedule with a maximum of US\$1000 per paper.
- 5) A Selection Committee will make the decision on each submitted paper and will establish new rules and policies on any aspect not specified in this guideline. Initially this Committee will be constituted by the Officers of the IAP: President, Vice-president, Secretary-Treasurer and Editor-in-Chief.
- 6) The evaluation will be a continuous process that will be applied to all the applications submitted every three months until exhaustion of the provided fund.
- 7) Since these publications' copyright remain in the hands of the authors, the IAP might chose to include the subsidized papers in the Paratuberculosis Newsletter. At least the full bibliographic reference of all the subsidized papers will be published in it.

- 8) The IAP would require the following disclaimer to be added to any publication of the winning papers in its own media (The Paratuberculosis Newsletter): The IAP financial support of the Open Access publication does not mean IAP official endorsement of the published contents.
- 9) The call is open since its publication in The Paratuberculosis Newsletter and until otherwise noted in The Paratuberculosis Newsletter. Periodic reminders will also appear in its pages.
- 10) Submission must be sent by email to the Editor-in-Chief of the IAP ([saxmose@sund.ku.dk](mailto:saxmose@sund.ku.dk)) and must include a letter of application, a pdf copy of the published paper or its electronic address and a pdf copy of the publisher invoice.

Ramon A. Juste  
President of the IAP

### 12th International Colloquium on Paratuberculosis

The 12th International Colloquium on Paratuberculosis will take place in Parma 22-26 June 2014. Visit the official website at: <http://www.icp2014.eu/>



### IAP Book Purchases

The association has a number of past International Colloquium proceedings available for distribution. We currently have the following in stock:

- 8ICP Proceedings – Book
- 8ICP Proceedings – CD-ROM
- 7ICP Proceedings – Book
- 6ICP Proceedings – Book
- 5ICP Proceedings – Book
- 4ICP Proceedings – Book

Proceedings are available FREE to members, but shipping charges of \$15 (USA) or \$35 (outside of USA) will apply. Non-members may purchase the Proceedings for \$25 plus shipping costs.

Furthermore,

The History of Paratuberculosis compiled by Rod Chiodini is available for 50 USD + shipping for members, and \$125 +shipping for non-members.

To order please send an e-mail to Secretary-Treasurer Ray Sweeney at:

[rsweeney@vet.upenn.edu](mailto:rsweeney@vet.upenn.edu)

and include the following information:

- Item and no. of each
- Shipping address
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- E-mail address

The number of proceedings is limited so we operate by first-come-first-served principle. Please place your order no later than 1 April 2012.

Also note that the 7<sup>th</sup>, 8<sup>th</sup>, 9<sup>th</sup>, 10<sup>th</sup>, and 11<sup>th</sup> Proceedings are available on-line at [www.paratuberculosis.info](http://www.paratuberculosis.info).

Starting with the 9<sup>th</sup> ICP, a print version of the Proceedings are no longer produced by IAP. However, print versions of 9<sup>th</sup>, 10<sup>th</sup>, and 11<sup>th</sup> ICP can be purchased at <http://www.proceedings.com/6219.html>

## 2. Short Scientific Reports

### ***An interesting case of anomalous TB intradermal test reaction***

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#### History

PIRSA was informed in September 2012 that an Angus heifer being prepared for export appeared to have a positive reaction to an intradermal Tb (caudal skin fold) test. The animal was one of a consignment of 50 animals from a property in SE South Australia, and the only one that had reacted. A lump approximately 2.5cm had developed on the left caudal fold, approximately 10 days after inoculation at that site.

The animal was slaughtered the next day at the export facility, a full post mortem conducted, and samples sent to the lab. The main findings were:

- A large fibrous lump at the inoculation site
- Enlarged and inflamed ileocaecal valve
- Enlarged ileocaecal and terminal mesenteric lymph nodes
- Thickened ileum.

Mediastinal, retropharyngeal and other lymph nodes appeared normal, as well as lungs and other organs. The animal appeared clinically normal.

#### Laboratory results summary:

- Intestinal mucosa & submucosal lymphoid tissue: Granulomas & individual multinucleate giant cells, multifocal, with low numbers of intrahistocytic acid fast bacilli
- Enteritis, lymphoplasmcytic & eosinophilic, diffuse, chronic, marked with villous blunting and low numbers of intraepithelial coccidian protozoa
- Lymph nodes, paracortex: granulomas & individual multinucleate giant cells, multifocal, with low numbers of intrahistocytic acid- fast bacilli
- Other granulomas containing acid fast bacilli seen in intestinal sections
- Serum samples JD ELISA negative
- Tissue and faecal samples: Johne's Disease PCR negative for *M. paratuberculosis*
- Tissue and faecal samples: Growth on solid media culture negative on PCR for *M. paratuberculosis* but the culture grew a mycobactin – **independent acid fast bacillus**. A reculture confirmed this result.
- Fresh tissue samples sent to Animal Health Laboratories – Western Australia were negative on culture for *Mycobacterium bovis* & *Mycobacterium* spp

### Discussion

On the basis of histopathology results the property of origin was Quarantined for Johne's Disease, pending culture results. The property is in a wet area with surrounding wetlands and many wild birds and waterbirds. There has not been a history of Johne's Disease on the property, or in the immediate area, and all remaining livestock appeared well. Twenty one adult cattle on the property were tested in late October with a JD ELISA with negative results, and Quarantine was removed from the property.

Although initial suspicion and diagnosis was Johne's Disease for this animal subsequent testing indicated this was not the case. Cross reactions from intradermal skin testing for Bovine Tuberculosis due Johne's Disease are well known, and not uncommon. However, in this case it appears that another strain of uncharacterised *Mycobacterium* that was capable of generating a tissue reaction in lymphoid & intestinal tissue, and stain acid – fast, was the cause of the cross reaction.





### **3. List of Recent Publications**

- Bannantine JP, Li LL, Sreevatsan S, Kapur V. [How does a \*Mycobacterium\* change its spots? Applying molecular tools to track diverse strains of \*Mycobacterium avium\* subspecies \*paratuberculosis\*](#). Lett Appl Microbiol. 57:165-173.
- Bannantine JP, Bermudez LE. [No holes barred: Invasion of the intestinal mucosa by \*Mycobacterium avium\* subspecies \*paratuberculosis\*](#). Infect Immun. 2013 Aug 12. [Epub ahead of print].
- Cha SB, Yoo A, Park HT, Sung KY, Shin MK, Yoo HS. [Analysis of transcriptional profiles to discover biomarker candidates in \*Mycobacterium avium\* subsp. \*paratuberculosis\*-infected macrophages, RAW 264.7](#). J Microbiol Biotechnol. 2013 Jun 3. [Epub ahead of print].
- Eisenberg SW, Chuchaisangrat R, Nielen M, Koets AP. [The relationship between presence of cows with \*Mycobacterium avium\* subspecies \*paratuberculosis\* \(MAP\) antibody ELISA positive milk and viable MAP in dust in cattle barns](#). Appl Environ Microbiol. 2013 Jun 21.
- Fecteau ME, Bedenice D, Cebra CK, Pinn TL, McAdams SC, Fyock TL, Whitlock RH, Sweeney RW. [Prevalence of \*Mycobacterium avium\* subsp. \*paratuberculosis\* fecal shedding in alpacas presented to veterinary hospitals in the United States](#). J Vet Intern Med. 2013 Jun 19. [Epub ahead of print].
- Forde T, De Buck J, Elkin B, Kutz S, van der Meer F, Orsel K. [Contrasting results of culture-dependent and molecular analyses of \*Mycobacterium avium\* subsp. \*paratuberculosis\* from wood bison](#). Appl Environ Microbiol. 79:4448-54.
- Gonec T, Kos J, Zadrazilova I, Pesko M, Govender R, Keltosova S, Chambel B, Pereira D, Kollar P, Imramovsky A, O'Mahony J, Coffey A, Cizek A, Kralova K, Jampilek J. [Antibacterial and herbicidal activity of ring-substituted 2-hydroxynaphthalene-1-carboxanilides](#). Molecules. 18:9397-419.
- Goodridge A, Correa R, Castro P, Escobar C, de Waard JH. [Serum samples can be substituted by plasma samples for the diagnosis of paratuberculosis](#). Prev Vet Med. 2013 Jul 29. [Epub ahead of print].
- Gurung RB, Begg DJ, Purdie AC, Whittington RJ. [Antigenicity in sheep of synthetic peptides derived from stress-regulated \*Mycobacterium avium\* subsp. \*paratuberculosis\* proteins and comparison with recombinant protein and complex native antigens](#). Vet Immunol Immunopathol. 2013 Jun 8. [Epub ahead of print].
- Hammer P, Walte HG, Matzen S, Hensel J, Kiesner C. [Inactivation of \*Mycobacterium avium\* subsp. \*paratuberculosis\* during cooking of hamburger patties](#). J Food Prot. 76:1194-201.
- Hughes V, Denham S, Bannantine JP, Chianini F, Kerr K, May L, McLuckie J, Nath M, Stevenson K. [Interferon gamma responses to proteome-determined specific](#)



- [recombinant proteins: Potential as diagnostic markers for ovine Johne's disease](#). Vet Immunol Immunopathol. 2013 Jun 28. [Epub ahead of print].
- Khalifeh MS, Stabel JR. [Clinical disease upregulates expression of CD40 and CD40 ligand on peripheral blood mononuclear cells from cattle naturally infected with \*Mycobacterium avium\* subsp. \*paratuberculosis\*](#). Clin Vaccine Immunol. 20:1274-82.
- Klanicova B, Seda J, Slana I, Slany M, Pavlik I. [The tracing of mycobacteria in drinking water supply systems by culture, conventional, and real time PCRs](#). Curr Microbiol. 2013 Jul 31. [Epub ahead of print].
- Kostoulas P, Browne WJ, Nielsen SS, Leontides L. [Bayesian mixture models for partially verified data: Age- and stage-specific discriminatory power of an antibody ELISA for paratuberculosis](#). Prev Vet Med. 111:200-5.
- Kruze J, Monti G, Schulze F, Mella A, Leiva S. [Herd-level prevalence of Map infection in dairy herds of southern Chile determined by culture of environmental fecal samples and bulk-tank milk qPCR](#). Prev Vet Med. 111:319-24.
- Kumthekar S, Manning EJ, Ghosh P, Tiwari K, Sharma RN, Hariharan H. [Mycobacterium avium subspecies paratuberculosis confirmed following serological surveillance of small ruminants in Grenada, West Indies](#). J Vet Diagn Invest. 25:527-30.
- Masala S, Zedda MA, Cossu D, Ripoli C, Palermo M, Sechi LA. [Zinc transporter 8 and MAP3865c homologous epitopes are recognized at T1D onset in Sardinian children](#). PLoS One. 8:e63371.
- Molicotti P, Scanu AM, Lumbau A, Cannas S, Bua A, Lugliè P, Zanetti S. [Molecular identification of \*Mycobacterium avium\* subspecies \*paratuberculosis\* in oral biopsies of Crohn's disease patients](#). Gut Pathog. 5:18.
- Määttänen P, Trost B, Scruten E, Potter A, Kusalik A, Griebel P, Napper S. [Divergent immune responses to \*Mycobacterium avium\* subsp. \*paratuberculosis\* infection correlate with kinome responses at the site of intestinal infection](#). Infect Immun. 81:2861-72.
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- Radia D, Bond K, Limon G, van Winden S, Guitian J. [Relationship between periparturient management, prevalence of MAP and preventable economic losses in UK dairy herds](#). Vet Rec. 2013 Jul 29. [Epub ahead of print].
- Sarafidou T, Stamatis C, Kalozoumi G, Spyrou V, Fthenakis GC, Billinis C, Mamuris Z. [Toll like receptor 9 \(TLR9\) polymorphism G520R in sheep is associated with seropositivity for Small Ruminant Lentivirus](#). PLoS One. 8:e63901.
- Schillinger S, Bridger PS, Bulun H, Fischer M, Akineden O, Seeger T, Barth S, Henrich M, Doll K, Bülte M, Menge C, Bauerfeind R. [Flow cytometric detection of \*Mycobacterium avium\* subsp. \*paratuberculosis\* \(MAP\)-specific antibodies in experimentally infected and naturally exposed calves](#). Clin Vaccine Immunol. 2013 Jul 24. [Epub ahead of print].

- Singh PK, Singh SV, Saxena VK, Singh MK, Singh AV, Sohal JS. [Expression profiles of different cytokine genes in peripheral blood mononuclear cells of goats infected experimentally with native strain of \*Mycobacterium avium\* subsp. \*paratuberculosis\*](#). Anim Biotechnol. 24:187-97.
- Stewart LD, Foddai A, Elliott CT, Grant IR. [Development of a novel phage-mediated immunoassay for the rapid detection of viable \*Mycobacterium avium\* subsp. \*paratuberculosis\*](#). J Appl Microbiol. 115:808-17.
- Swift BM, Denton EJ, Mahendran SA, Huxley JN, Rees CE. [Development of a rapid phage-based method for the detection of viable \*Mycobacterium avium\* subsp. \*paratuberculosis\* in blood within 48 h](#). J Microbiol Methods. 94:175-179.
- Toth JD, Aceto HW, Rankin SC, Dou Z. [Survey of animal-borne pathogens in the farm environment of 13 dairy operations](#). J Dairy Sci. 2013 Jun 27. [Epub ahead of print].
- Vazquez P, Garrido JM, Juste RA. [Specific antibody and interferon-gamma responses associated with immunopathological forms of bovine paratuberculosis in slaughtered Friesian cattle](#). PLoS One. 8:e64568.