Rev Argent Microbiol. 2015;47(4):380–381

REVISTA ARGENTINA DE
MICROBIOLOGÍA

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MICROBIOLOGICAL IMAGE

Capsule expression in isolates of *Streptococcus equi* subsp. *equi*

Expresión de la cápsula en aislamientos de *Streptococcus equi* subsp. *equi*

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Received 13 May 2015; accepted 27 July 2015
Available online 11 November 2015

Streptococcus equi subsp. *equi (S. equi)* of Lancefield group C and beta-hemolytic streptococci (Fig. 1) causes strangles, an acute and contagious lymphadenopathy of young horses.[1-3] *S. equi* is host-adapted to equine but, unlike *Streptococcus equi* subsp. *zooepidemicus*, does not colonize the nasopharynx in healthy horses.[2,3]

The hyaluronic acid capsule is an important virulence factor for many streptococci[1–4] and it is a high molecular weight polymer consisting of alternating residues of N-acetylglucosamine and glucuronic acid. The capsule reduces the phagocytic function of neutrophils and is required for the activity of proteases, toxins and the SeM protein.[3] Furthermore, this capsule mimics the molecule in animal tissue and protects the bacterium from immune recognition.[3]

Virulent isolates of *S. equi* are usually highly encapsulated[1,3] and nonencapsulated mutants are not able to progress from tonsillar tissue to the lymph nodes.[2] However, the high levels of capsule may reduce adhesion to the mucosal surface.[2]

S. equi isolates (Fig. 1) were obtained from horses suffering from clinical strangles and guttural pouch empyema in Buenos Aires. The isolates were cultured for 24 h at 37 °C in 5 ml of Todd Hewitt broth supplemented with 0.2 % yeast extract and 10 % adult horse serum. Then, capsules were observed with phosphotungstic acid (PTA) using a JEOL 1200EX II transmission electronic microscope at 50,000 magnification. The photographs were taken at 80 KV (Figs. 2 and 3).

Figure 1 Beta-hemolytic colonies of *Streptococcus equi* subsp. *equi* in blood equine agar.

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http://dx.doi.org/10.1016/j.ram.2015.07.005

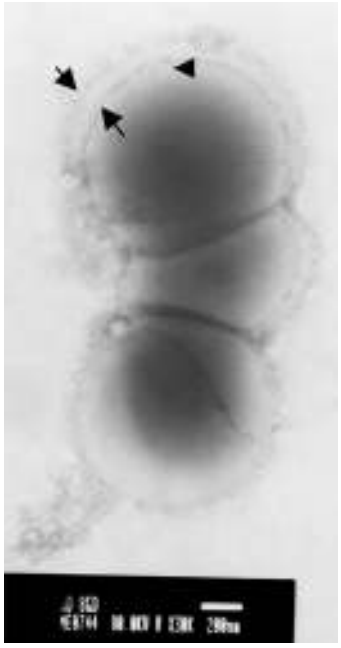

Figure 2 Capsule observation by transmission electronic microscope of *Streptococcus equi* subsp. *equi* showing high levels of capsule expression.

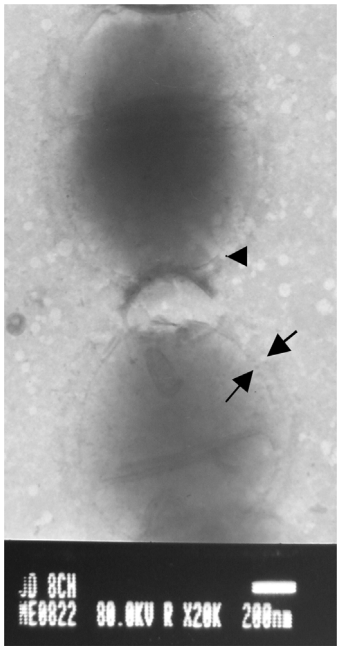

Figure 3 Capsule observation by transmission electronic microscope of *Streptococcus equi* subsp. *equi* showing low levels of capsule expression.

High (Fig. 2) and low (Fig. 3) levels of capsule expression were observed, even in isolates from the same sample.

Ethical responsibilities

Protection of human and animal subjects. The authors declare that no experiments were performed on humans or animals for this study.

Confidentiality of data. The authors declare that no patient data appear in this article.

Right to privacy and informed consent. The authors declare that no patient data appear in this article.

Acknowledgements

This work was supported by Secretaría de Ciencia y Técnica, Universidad de Buenos Aires (Research Project UBA CyT 20020100100149).

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