



**UNIVERSIDAD NACIONAL DE LA PLATA  
FACULTAD DE CIENCIAS VETERINARIAS**

**XI REUNIÓN ARGENTINA DE PATOLOGÍA  
VETERINARIA 2018**

**12° SEMINARIO DE LA FUNDACIÓN  
CHARLES LOUIS DAVIS & SAMUEL  
WESLEY THOMPSON EN ARGENTINA**

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– LA PLATA –  
PROVINCIA DE BUENOS AIRES, ARGENTINA**

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**XI RAPAVE 2018**

REUNIÓN ARGENTINA DE PATOLOGÍA VETERINARIA FCV UNLP LA PLATA

12° SEMINARIO DE LA FUNDACIÓN C.L. DAVIS - S.W. THOMPSON EN ARGENTINA

ORGANIZAN:



# RESÚMENES DE TRABAJOS CIENTÍFICOS

**DERMATOPATOLOGÍA EN CABRAS CON FOTOSENSIBILIZACIÓN POR *HETEROPHYLLAEA PUSTULATA*. ESTUDIO HISTOPATOLÓGICO SECUENCIAL**  
**DERMATOPATHOLOGY IN GOATS WITH PHOTOSENSITIZATION BY *HETEROPHYLLAEA PUSTULATA*. SEQUENTIAL HISTOPATHOLOGICAL STUDY**

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Photosensitization dermatitis is a frequent skin disorder in animals and humans that occurs when photodynamic or fluorescent pigments are deposited in sunlight-exposed skin. The effects of solar radiation on the integument have been known for years, and numerous studies put focus on the direct effects of sun or UV radiation on the cutaneous tissue. However, most of the dermatopathological studies refer to a few natural cases, whereas there are no sequential and/or experimental studies on cutaneous lesions produced by photosensitizing substances. Anthraquinones (AQs) are a group of photoactive substances present in some plants, and several of them have been identified in *Heterophyllaea pustulata* Hook f. (Rubiaceae). This vegetal species has demonstrated photosensitizing activity in natural and experimental cases. This work shows sequenced skin lesions present on goats experimentally intoxicated with *H. pustulata* over time. In addition, proliferation and cell death patterns are shown by immunohistochemistry. For this study, eight adult goats of the Sannen breed were used. Experimental group of 5 animals (EG) received a single dose of AQs (42.25 mg/kg) while control group (CG, n=3) received 5 g/kg body weight of lucerne hay. Two groups of animals were exposed to sunlight for seven days. Serial skin biopsies were collected at different time's interval. Samples were submitted for histopathological and immunohistochemical studies. Immunohistochemistry (IHC) for identifying apoptotic antigens (BCL2, BAX2) as well as proliferation cell nuclear protein markers (PCNA)

was performed. Histopathological studies revealed an interfaced necrotizing dermatitis. Initially, degenerative changes, edema and inflammation were observed. On day 8, epidermal necrosis was intense and repair phenomena began, which included vascular and conjunctive proliferation with epidermal hyperplasia. In agreement, the expression of the apoptotic antigens (BCL2 and BAX) were observed between 32 and 72 h maximum, while PCNA increased its expression between 8 and 15 days. These results suggest that early cell death occurred 32-72 h after the intake of the photosensitization agent, i.e., the period immediately previous to the observation of tissular necrosis. Later, PCNA expression was significantly increased for rest of the experiment at the epithelial layer of the treated group; a fact that was paralleled to the hyperplasia of the epithelium. In conclusion, our findings are basically consistent with those skin changes described for sun damage. Although, physiological mechanisms between photosensitization and direct sun damage show significant differences, the skin response would seem to be similar in both cases. Therefore, photosensitization might be considered an accelerated form of direct skin damage, since the photosensitization agent is able to multiply the effect of sun radiation. The sequential lesions here described can be a model of skin damage by photosensitization in goats and likely to any other domestic animals, as the mechanisms of sun damage are shared by all species.