

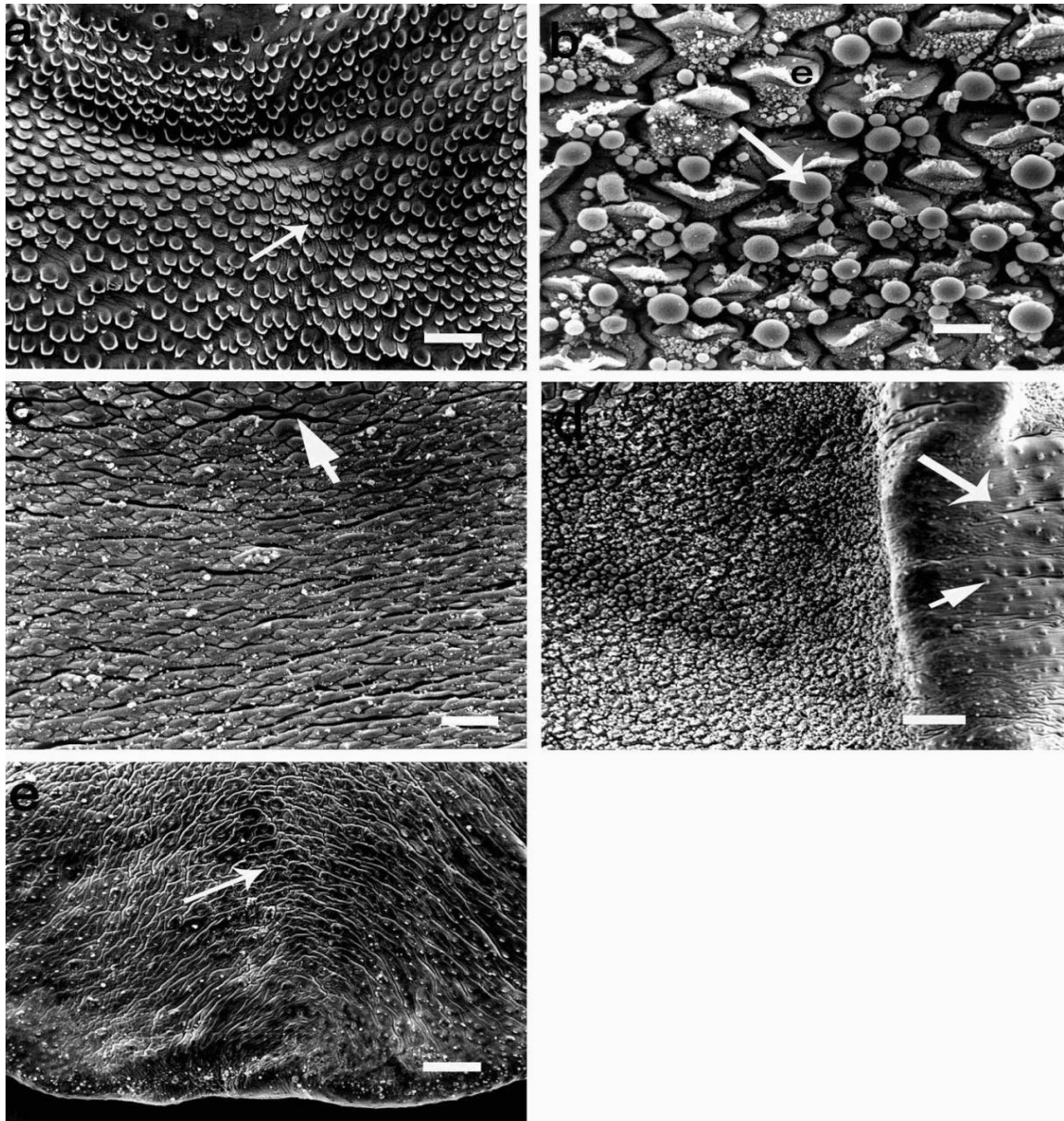
TEGUMENTAL SURFACE EVALUATION OF *Fasciola hepatica* AFTER *in vitro* INCUBATION WITH THE SULPHOXIDE METABOLITE OF COMPOUND ALPHA. Norma Rivera (1), Ian Fairweather (2), Armando Zepeda (3), Froylán Ibarra (1), Alicia Hernández (4), Rafael Castillo (4). (1) Facultad de Medicina Veterinaria y Zootecnia, Dpto. de Parasitología, UNAM 04510. (2) Queen's University of Belfast, School of Biology and Biochemistry, Northern Ireland. (3) Facultad de Medicina Dpto. de Biología Celular y Tisular, UNAM 04510. (4) Facultad de Química, UNAM 04510. E-mail: azr@servidor.unam.mx

Fasciolosis is a parasitic disease that causes important economic losses around the world (1). In recent years, resistance of *Fasciola hepatica* to triclabendazole (TCBZ) has been reported in the United Kingdom and Ireland (2, 3). The aim of the present study was to evaluate by scanning electron microscopy (SEM) the fasciolicidal activity of the 5-chloro-2-methylthio-6-(1-naphthiloxy)-1*H*-benzimidazole named compound alpha (4), against adult flukes of the TCBZ-susceptible Cullompton isolate. The trematodes were recovered from the bile ducts of adult Sprague-Dawley rats under sterile conditions. Seven flukes were then incubated for 24 hours at 37° C in NCTC 135 culture medium with antibiotics and 10µg/ml of alpha sulphoxide. Non-treated control flukes were included. Flukes were flat-fixed in 4% (w/v) glutaraldehyde and 1% aqueous osmium tetroxide, dehydrated in an ascending series of alcohols, dried in Hexamethyldisilazane, mounted on aluminum stubs and coated with gold. After 24 h incubation, the spines of the oral cone on the ventral surface showed some disorganization, mostly around the ventral sucker. A swollen tegument, sunken spines and blebs of different sizes were seen in the midbody region on the ventral surface, particularly along the lateral margins of the flukes where spine-less zones were observed. Deep furrows were seen in the tegument of the posterior midbody region of the ventral surface. The tail region showed a roughened surface, with some blebs but no spines. These same lesions were observed on the dorsal surface of the flukes though in less degree. Non-treated controls had no alteration in their structures. It is concluded that the tegument of adult *F. hepatica* is a focal tissue for compound alpha to exert its fasciolicidal effect. The next step in the compound alpha story should be the evaluation against TCBZ-resistant flukes.

Study partially supported by the project PAPIIT-DEGAPA-UNAM No IN214502-3 and by Queen's University of Belfast, School of Biology and Biochemistry, Parasite Proteomics and Therapeutics Research Group, Northern Ireland.

Referencias

- [1] A, Nari, et al. Argentina: Hemisferio sur, (1984).
- [2] M, McConville. BSc (hons), School of Biology and Biochemistry, Queen's University of Belfast, (2004).
- [3] GBB, Mitchell, et al. Vet Rec (1998) 143, 14.
- [4] CA, Hernández CA, et al. Chem Pharm Bull (2002) 50, 649.



Scanning electron microscopy: **a**, spine disorganization beneath the ventral sucker (arrow). Bar 100 μm . **b**, midbody anterior region of the ventral surface where blebs of different sizes were seen (arrow), e (spine). Bar 20 μm . **c**, Deep furrows at the posterior midbody region, of the ventral surface (arrow). Bar 50 μm . **d**, spine-less zone at the lateral margin of the anterior midbody region of the ventral surface (large arrow), spine (small arrow). Bar 100 μm . **e**, a swollen tegument can be seen at the tail region of the ventral surface (arrow). Barra 100 μm .