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Histochemical Study to Investigate Carbohydrates, Proteins and Lipids Compounds and Their Physiological Role in Microcercous and Distome Cercariae

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ABSTRACT

Histochemical techniques revealed the presence of proteins, carbohydrates and lipids in both microcercous and distome cercariae. There was an abundance of glycogen and different mucopolysaccharides when lead tetra acetate-Schiff technique was used, but the result was negative in case of microcercous cercariae when maxilon blue RL technique was used as no metachromatia was noticed. The reaction was moderately

positive with distome cercariae by using the same technique. Also there was an abundance of proteins containing tryptophan and arginine in tissues of both cercariae. Both cercariae showed very strong positive reaction with the technique used to detect lipoproteins.

.(Pearse, 1985)

(Butler and Fried, 1977)

Oil red O

O

Echinostoma revolutum

Bolbogonotylus corkumi

acid-mucopolysaccharides

glycocalyx

.(Walker and Wittrock, 1992)

Echinostoma caproni

Alcianblue

periodic acid Schiff (PAS)

O

(Walker and Wittrock, 1999)

.(Idris and Fried, 1996)

O

Gryptogonimus chyli

Zygocotyle lunata

.(Marsit *et al.*, 2000 a,b)

E. caproni

(2002)

(DNA)

Clinostomum complanatum

.....

(AL-Hayyali, 2004)

protoscolices

Echinococcus granulosus

(2006)

.1

Melanopsis nodosa

()

soft tissues

normal physiological

.saline

acetocamine

microcercous cercariae

.(Gurr, 1962)

Roberts and Janovy, 2005;)

distome cercariae

.(Mohammed and Rahemo, 2001

.2

buffer neutral formalin

()

.(Pearse, 1985)

7-5

: .3

:

.Lead tetra acetate-Schiff (LTA-S) – .1

.Maxilon blue RL method (MB – RL) .2

.β – metablashia

α – metablashia

.

.1

Naphthyl ethylene diamine for tryptophan (NED-T)

Sakaguchi reaction for arginine (SR-A) .2

Salt extraction for residual lipoproteins (SE-RLP)

Pearse (1968)

(1)

.....

:1

SE-RLP	NED-T	SR-A	MB-RL	LTA-S	
+++	++++	+++	-	+++	
+++	++++	++++	++	+++	

:

:-

:++

:++++ ++

:

.1

-

M. nodosa

(PAS)

.(2 1)

(Walker and Wittrock, 1992, 1999)

(2002

)

.PAS

C. chyli B. corkumi

Clinostomum complanatum

PAS

(1:2 glycoles)

(

)

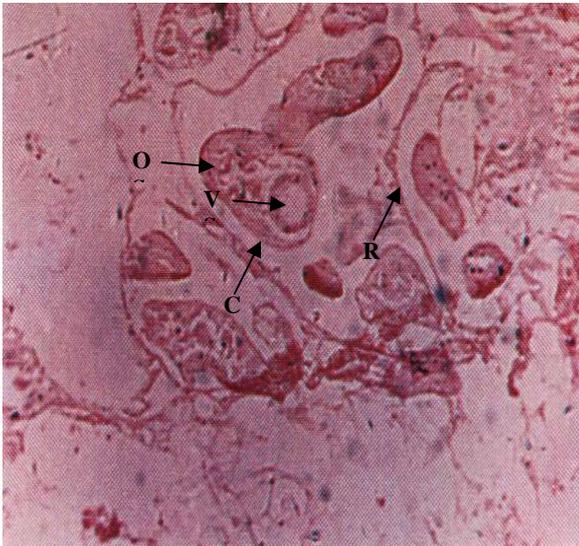
-

glycocalyx

.(Georgieva and Boevska, 1999)

.(Walker and Wittrock, 1999)

(2006)



:2

:1

(R) : *M.nodosa*
 (OS) (C)
 .(VS)
 .(125x) -

(R) : *M.nodosa*
 (OS) (C)
 (T) (VS)
 .(125x) -

SO₃H

β - metachromatia

.(3) COOH
 metachromatia

10.3

.(Pearse, 1968, 1985)

(2002)

C. complanatum

.....

(4)

Richards (1982)

Walker and Wittrock (1992, 1999)

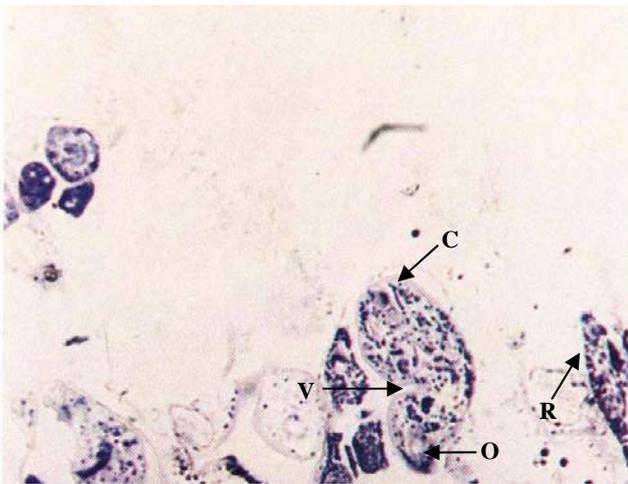
(2002)

C. chyli *B. corkumi*

Joyeuxiella sp.

Dibothriocephalus sp.

.(1990)



:4

(R) : *M.nodosa*
 (OS) (C)
 .(VS)

.(125x)



:3

(R) : *M.nodosa*
 (VS) (OS) (C)
 . (125x) (T)

.(6,5)

.(8,7)

(Olsen, 1974)

Sulphydral

disulfid

(Pachuski *et al.*, 2002)

E. caproni

(Barrett, 1991)

E. caproni

(Roberts and Janovy, 2005)

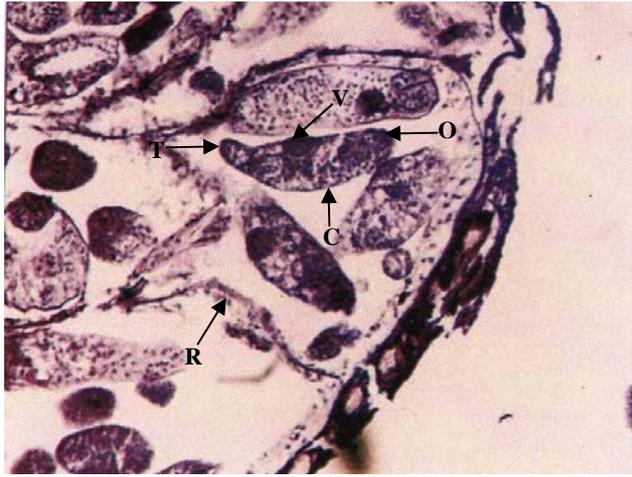
(Murray *et al.*, 2000)

.....



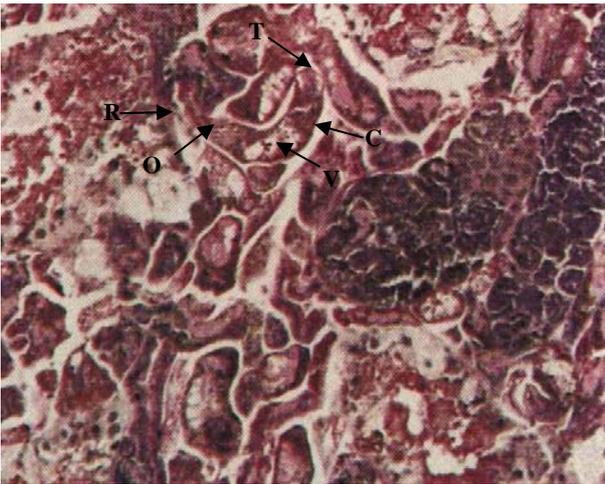
:6

(R) : *M.nodosa*
 (OS) (C)
 .(125x) .(VS)



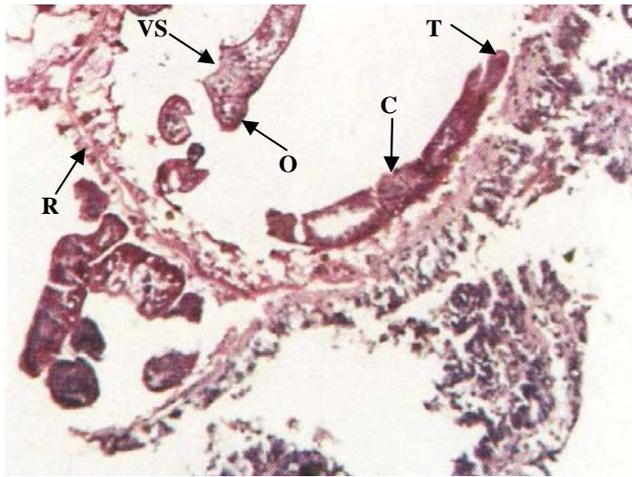
:5

(R) : *M.nodosa*
 (OS) (C)
 (T) (VS)
 .(125x)



:8

(R) : *M.nodosa*
 (OS) (C)
 .(125x) .(VS)



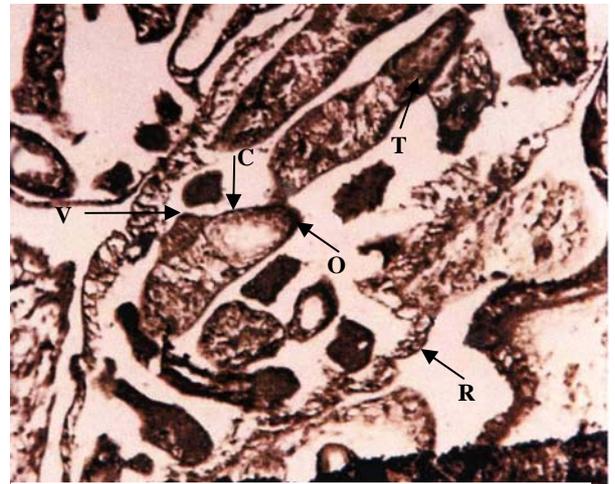
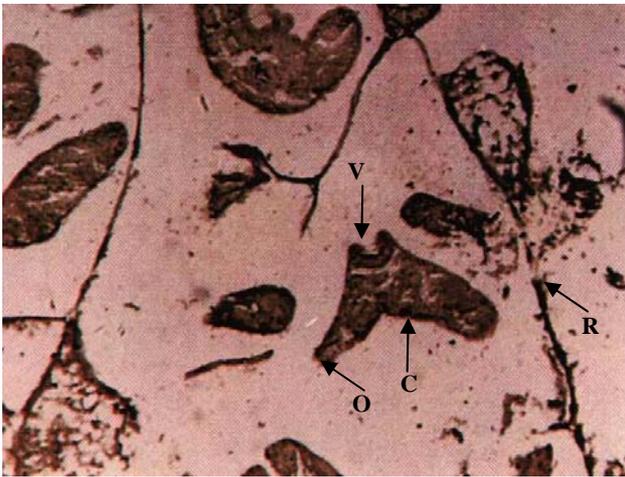
:7

(R) : *M.nodosa*
 (OS) (C)
 .(125x) (T) (VS)

.3

(10,9)

O *E. revolutum* Butler and Fried (1997)
 (Walker and Wittrock, 1992, 1999)
) *C. chyli* *B. corkumi* (
 (Marsit *et al.*, 2000b)
 (2002) *E. caproni*
C. complanatum
 (Humiczewska and Rajska, 2005) *Barbus luteus*
Fasciola hepatica



	:10		:9
:	<i>M.nodosa</i>	:	<i>M.nodosa</i>
(OS)	(C)	(R)	(OS)
	(VS)		(T)
	(125x)		(125x)

O -
 phospholipids
 granular myoblastoma neutral fats

.(Georgieva and Boevska, 1999)

(Roberts and Janovy, 2005)

(2006)

.2006

.2002

.1990

.211

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