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**NOSTOC MUSCORUM AG. EX BORN. ET**

**FLAH.**

10 *Nostoc muscorum* Ag. ex Born. et Flah.  
AKR 4  
( ), ( )  
)  
10 6  
1 2A

, *Nostoc muscorum*,

(Sharma et al., 2006, 2007).

(Sharma & Rai, 2006),

(Tormo et al., 2001).

(Fitzgeorge et al., 1994),

(Kirkpatrick et

al., 2004).

(Woodcock, 1948),

« »

(Benson et al., 2005).

*Karenia brevis*

(Flewelling et al., 2005). (Turner et al., 1990),

10 18

« » *Microcystis aeruginosa* Kütz.,

;

« »

*Nostoc*

(Dodds et al., 1995).

(Vasconcelos et al., 1996). *Nostoc flagelliforme*,

(Gao, 1998).

“ ”, *N. rivulare*,

(Sivonen & Jones, 1999).

(*Nostoc* sp. strain 152; Sivonen et al., 1992; *Nostoc* sp. strain DUN901; Beattie et al., 1998; *Nostoc* sp. strain IO-102-I; Oksanen et al., 2004)

*Nostoc muscorum*

Ag. ex Born. et Flah.

(Cano et al., 1990; Bloor & England, 1991; El-Sheekh et al., 2006).

(Sharma et al., 2006)

*N. muscorum*

(Cheng et al., 2005),

9

*Nostoc muscorum*

Ag. ( )

*Nostoc muscorum*

(*Nostocales*, *Nostocaceae*),

2,5 32

(Sharma et al., 2006). BG-11,

70  $\mu \cdot E \cdot m^{-2} \cdot s^{-1}$ ) / 14:10 ( 28  $\pm$  1  $^{\circ}C$ .

et al., 1986), 1:4:15. 40  $^{\circ}C$ . (0,85 % NaCl); LD<sub>50</sub><sup>-1</sup> 14 (Krishnamurthy

AKR, 6-8 25  $\pm$  2  $^{\circ}C$ , 12:12, ad libitum.

18 36 18

(10, 20 30 ) (0,85 % NaCl). 1 - $\mu$ L (w/v). 3-

(5, 10 15 ), (10, 20 30 ),

20  
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6 (Benson et al., 2005).  
<20 +

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( )

7,4, 5 EDTA; 5 EGTA; 250 mM ; 50 2- NaCl).  
(50 , pH  
8  
( ; EC 3.1.3.16)  
(1 000 x 10 )

10 000 x 30  
100 000 x 60

(Toivola et al., 1994).

P- P-  
405 (An, Carmichael, 1994).

10

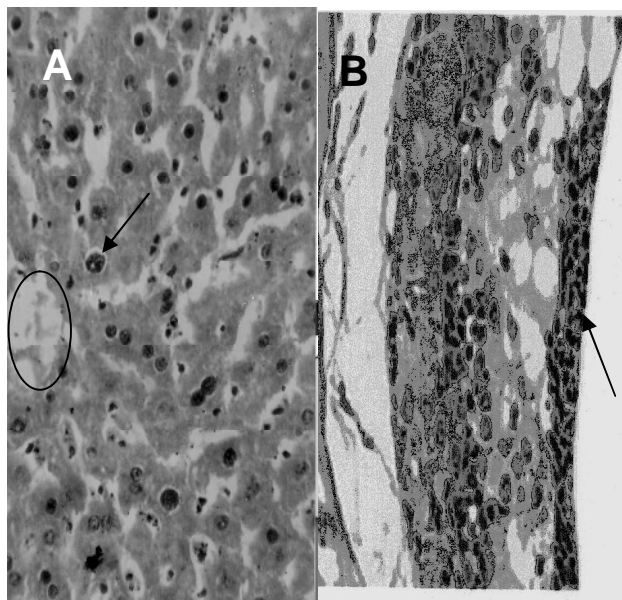
(Sharma et al., 2006).

(  
(Tormo et al., 2001).

2006)

(Sharma, Rai,  
*N. muscorum*.

(Gupta et al., 2003).



A – 4 10 ;  
(600 ); B – 6 10  
; (600 ).

*N. muscorum* (

5 5-8 )

9  
( ) (Cheng et al., 2005).  
(Fitzgeorge et al., 1994) LD<sub>50</sub>

6

( , B).

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LR

16

(Benson et al., 2005)

(Slatkin et al., 1983).

1 2A,

(PP1 PP2) (

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EFFECT OF *NOSTOC MUSCORUM* AG. EX BORN. ET FLAH. TOXINS ON UPPER  
RESPIRATORY TRACT OF MICE

Intraperitoneal administration of 10 µL of *Nostoc muscorum* Ag. ex Born. et Flah. crude extract was sufficient enough for the death of male AKR strain mice at 4h of exposure. Body weight, behavioral and histological observations (necrosis of hepatic cells), and biochemical tests (protein phosphatase inhibition)

indicated for the presence of microcystines in the crude extract. Since, the cyanobacterium was airborne, the very doses were also administered intranasally into mice. A dose of 10 µL of the crude extract resulted in severe morphological alterations of nasal mucosa at 6h of exposures, but not beyond nasal cavity. Though, presence of protein phosphatases 1 and 2A in the tracheal tissues confirmed the susceptibility of the upper respiratory tissues against microcystins. However, due to the deposition of insufficient amount of toxins post-nasal cavity respiratory tissues exhibited no response. This indicated that the route of exposure plays an important role in conferring toxicity.

*Keywords*: airborne algae, hepatotoxic, inhalation, intraperitoneal, intranasal, *Nostoc muscorum*, protein phosphatases.

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