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Changes in salivary nitrophorin profile during the life cycle of the blood-sucking bug *Rhodnius prolixus*

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Abstract

The insect *Rhodnius prolixus* is a hematophagous hemipteran that has five nymphal instars. Fifth instar nymphs contain, in their salivary glands, four nitrophorins which have already been described in the literature (NP1, NP2, NP3 and NP4). Two new hemeproteins were isolated and partially characterized from first instar nymphs. NP2, that shows an anticoagulant activity, was also identified, but NP1, NP3 and NP4 were not found. As these new hemeproteins have amino-terminal sequences clearly homologous to already described nitrophorins and were capable of binding nitric oxide, they were named nitrophorins 5 and 6, although they showed an unusual Soret band at 412 nm. In each subsequent nymphal stage, a new nitrophorin emerges. In the second instar, NP4 comes into view, in the third instar NP1 appears, and NP3 is only found in fifth instar nymphs and adults, showing that the nitrophorin profile of *R. prolixus* saliva

is stage-specific.



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Keywords

Nitrophorin; Salivary gland; Hemeproteins; Nymphs; *Rhodnius prolixus*

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