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## Veterinarni Medicina

**Biologically active substances from water invertebrates: a review**

Sinko J, Rajchard J, Balounova Z, Fikotova L:

Veterinarni Medicina, 57 (2012): 177-184

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Some species of invertebrates especially bryozoans (Bryozoa syn. Ectoprocta) and marine sponges (Porifera) are very important sources of pharmacologically exploitable compounds. These substances are probably produced to protect themselves from fish predators and may be an advantage in competition. The real sources of compounds with these antipredatory effects are probably not marine invertebrates themselves, but microscopic symbionts or food which they feed on. Bryostatins from bryozoan species *Bugula neritina* are produced by a bacterial symbiont called *Candidatus Endobugula sertula*. They have significant anti-cancer effects, but also

with the structure of bryostatins were also discovered in some other invertebrates. Sponges are a source of many compounds, e.g., ara-A (vidarabine), manzamine, lasonolides, spongistatins, peloruside and others with antimicrobial, anti-cancer, immunosuppressive and similar activities. Other important sources of compounds with medical effects are tunicates (Tunicata syn. Urochordata) and some snails (Mollusca). One drug was developed from tunicates – Yondelis against refractory soft-tissue sarcomas. Certain other drugs originate from snails: e.g., prialt, which acts against chronic pain in spinal cord injury.

### **Keywords:**

bioactive substances; antipredatory effect; competition; bryozoan; bryostatin; *Bugula neritina*; symbiont; marine sponges; isocyano terpenes; tunicates; snails

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