Секция «Зоология беспозвоночных»

In search of the mother of blue mussel cancer: The first description of a widespread *Mytilus trossulus*-derived transmissible neoplasia in *Mytilus trossulus*

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Two genetic lineages of bivalve transmissible neoplasia (BTN), BTN1 and BTN2, are known in blue mussels *Mytilus* [3]. Both lineages derive from the Pacific mussel *M. trossulus* and are identified primarily by their unique genotypes of the nuclear gene EF1α [1, 3]. BTN1 is found in populations of *M. trossulus* from the Northeast Pacific [1], while BTN2 has been detected in the other *Mytilus* species worldwide but not in *M. trossulus* itself [1, 3]. Here we examined *M. trossulus* populations from the Sea of Japan (Northwest Pacific) for the presence of BTN. Using hemocytology and flow cytometry of the hemolymph, we confirmed the presence of disseminated neoplasia in our specimens [2]. Cancerous mussels possessed the BTN2 EF1α genotype and two mitochondrial haplotypes with different recombinant control regions, similar to that of common BTN2 lineages. This is the first report of BTN2 in its original host species *M. trossulus*. A comparison of all available BTN and *M. trossulus* COI sequences suggests a common and recent origin of BTN2 diversity in populations of *M. trossulus* outside the Northeast Pacific, possibly in the Northwest Pacific.

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References

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