

## **Сведения об официальном оппоненте**

**Кусайкин Михаил Игоревич**, доктор биологических наук, специальность 03.01.04 – биохимия, доцент, ведущий научный сотрудник лаборатории химии ферментов, заместитель директора по научным вопросам, Федеральное государственное бюджетное учреждение науки Тихоокеанский институт биоорганической химии им. Г.Б. Елякова Дальневосточного отделения Российской академии наук.

### **Список основных публикаций по теме диссертации за последние 5 лет**

1. Ustyuzhanina N.E., Bilan M.I., Dmitrenok A.S., Shashkov A.S., **Kusaykin M.I.**, Stonik V.A., Nifantiev N.E., Usov A.I. Structure and biological activity of a fucosylated chondroitin sulfate from the sea cucumber Cucumaria japonica // Glycobiology. – 2016. – V. 26. – P. 449-459.
2. **Kusaykin M.I.**, Belik A.A., Kovalchuk S.N., Dmitrenok P.S., Rasskazov V.A., Isakov V.V., Zvyagintseva T.N. A new recombinant endo-1,3-beta-D-glucanase from the marine bacterium Formosa algae KMM 3553: enzyme characteristics and transglycosylation products analysis // World Journal of Microbiology & Biotechnology. – 2017. – V. 33. – P. 40.
3. Silchenko A.S., Rasin A.B., **Kusaykin M.I.**, Kalinovsky A.I., Zhang M.S., Liu C.H., Malyarenko O., Zueva A.O., Zvyagintseva T.N., Ermakova S.P. Structure, enzymatic transformation, anticancer activity of fucoidan and sulphated fucooligosaccharides from Sargassum horneri // Carbohydrate Polymers. – 2017. – V. 175. – P. 654-660.
4. Silchenko A.S., Ustyuzhanina N.E., **Kusaykin M.I.**, Krylov V.B., Shashkov A.S., Dmitrenok A.S., Usoltseva R.V., Zueva A.O., Nifantiev N.E., Zvyagintseva T.N. Expression and biochemical characterization and substrate specificity of the fucoidanase from Formosa algae // Glycobiology. – 2017. – V. 27. – P. 254-263.
5. Usoltseva R.V., Zhao P.P., **Kusaykin M.I.**, Jia A.R., Yuan W.P., Zhang M.S., Liu C.H., Ermakova S.P. Structural Characteristics and Antitumor Activity of Fucoidans from the Brown Alga Sargassum muticum // Chemistry of Natural Compounds. – 2017. – V. 53. – P. 219-223.
6. Silchenko A.S., Rasin A.B., **Kusaykin M.I.** Kalinovsky A.I., Zhang M., Liu, Ch., Zueva A.O., Zvyagintseva T.N. Structure, enzymatic transformation, anticancer activity of fucoidan and sulphated fucooligosaccharides from Sargassum horneri // Carbohydr. Polym. – 2017. – Vol. 175. – P. 654-660
7. Silchenko A.S., Rasin A.B., Zueva A.O., **Kusaykin M.I.**, Zvyagintseva T.N., Kalinovsky A.I., Kurilenko V.V., Ermakova S.P. Fucoidan sulfatases from marine bacterium Wenyingzhuangia fucanilytica CZ1127T // Biomolecules. – 2018. – Vol. 8. – No 4. – P. 98.
8. Rasin A., Silchenko A., **Kusaykin M.**, Kalinovsky A. Application of enzyme treatment and nmr spectroscopy for the research of Sargassum horneri fucoidan // FEBS Open Bio. – 2018. – Vol. 8. – № S1. – P. 488.
9. Silchenko A., Zueva A., Rasin A., **Kusaykin M.**, Ermakova S. Identification of fucoidan sulfatases using bioinformatics and functional screening approaches // FEBS Open Bio. – 2018. – Vol. 8. – № S1. – P. 487.
10. Belik A., Silchenko A., **Kusaykin M.** TWO NOVEL BI-FUNCTIONAL GH 16 1,3- $\beta$ -D-GLUCANASES FROM GASTROPODA LAMBIS SP // FEBS Open Bio. – 2018. – Vol. 8. – № S1. – P. 239.

11. Cao H.T.T., Mikkelsen M.D., Lezyk M.J., Bui M.L., Tran V.T.T., Silchenko A.S., **Kusaykin M.I.**, Pham T.D., Truong B.H., Holck J., Meyer A.S. Novel enzyme actions for sulphated galactofucan depolymerisation and a new engineering strategy for molecular stabilisation of fucoidan degrading enzymes // *Marine Drugs.* – 2018. – V. 16. – № 11. – P. 422.
12. Belik A., Silchenko A., **Kusaykin M.**, Zvyagintseva T.N., Ermakova S.P. Alginate lyases: substrates, structure, properties, and prospects of application // *Russian Journal of Bioorganic Chemistry.* – 2018. – T. 44. – № 4. – C. 386-396.
13. Silchenko A.S., Rasin A.B., **Kusaykin M.I.**, Malyarenko O.S., Shevchenko N.M., Zueva A.O., Kalinovsky A.I., Zvyagintseva T.N., Ermakova S.P. Modification of native fucoidan from fucus evanescens by recombinant fucoidanase from marine bacteria *Formosa* algae // *Carbohydrate Polymers.* – 2018. – Vol. 193. – P. 189-195.
14. Malyarenko O.S., Zdobnova E.V., Silchenko A.S., **Kusaykin M.I.**, Ermakova S.P. Radiosensitizing effect of the fucoidan from brown alga *fucus evanescens* and its derivative in human cancer cells // *Carbohydrate Polymers.* – 2019. – V. 205. – P. 465-471.
15. Belik A., Silchenko A., Malyarenko O., Rasin A., Kiseleva M., **Kusaykin M.**, Ermakova S. Two New Alginate Lyases of PL7 and PL6 Families from Polysaccharide-Degrading *Bacterium Formosa* algae KMM 3553T: Structure, Properties, and Products Analysis. // *Mar Drugs.* 2020. – Vol. 18(2). – pii: E130. doi: 10.3390/md18020130.