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Dear Sir or Madam,

We are proud to invite you to **Skoltech Colloquium!**

Guest Speaker: Alexander B. Chetverin.
He received his Master, Ph.D., and D.Sc. degrees in molecular biology from the Lomonosov Moscow State University. From 1990 to 1992, he has been a Visiting Investigator at the Public Health Research Institute, New York. In 1997, he was elected Corresponding Member of the Russian Academy of Sciences. He invented the method of molecular colonies in collaboration with his wife Helena V. Chetverina in late eighties.

When: October 17**; 4:00pm**

Where: Institute of Gene Biology RAS, ul. Vavilova 34/5, Conference room, 1st floor.

What: Early and reliable diagnosis of deadly diseases with molecular colonies

Abstract: Many deadly diseases, such as AIDS, cancer, and tuberculosis, are accompanied by the appearance in the patient's body of particular nucleic acid (DNA or RNA) molecules that can serve as molecular diagnostic markers. The earlier a marker is revealed, the higher are the patient's chances for survival and the easier can the disease be prevented from spreading. Detecting small amounts of DNA or RNA molecules is only possible after amplifying them, usually by PCR (polymerase chain reaction). However, due to limited amplification specificity, the sensitivity of even the most advanced assays is still insufficient for timely diagnosis, with the rate of false-positive and false-negative results being too high. The problem can be overcome by carrying out the amplification reaction in a gel film, rather than in a test tube. In this format, the amplification products become entrapped in the gel matrix and accumulate around the progenitor molecule, resulting in a 2-D pattern of molecular colonies. Each colony comprises a molecular clone, the progeny of a single starting DNA or RNA template. This provides for the detection, enumeration, and analysis of single molecules present in the analyzed sample. The molecular colony format eliminates the competition from concurrently amplifying non-target nucleic acids and makes the assay digital, as the signal from a colony only needs to be detected without measuring its intensity. This greatly increases the reliability of diagnostics and permits the titer of a molecular marker to be directly determined by counting the number of specific colonies.

Further Information:

If you would like to participate and for further information or questions, please e-mail Alesya Garifullina - garifullina@skolkovotech.ru . Mob. 8 915 357 52 03

Best regards,

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