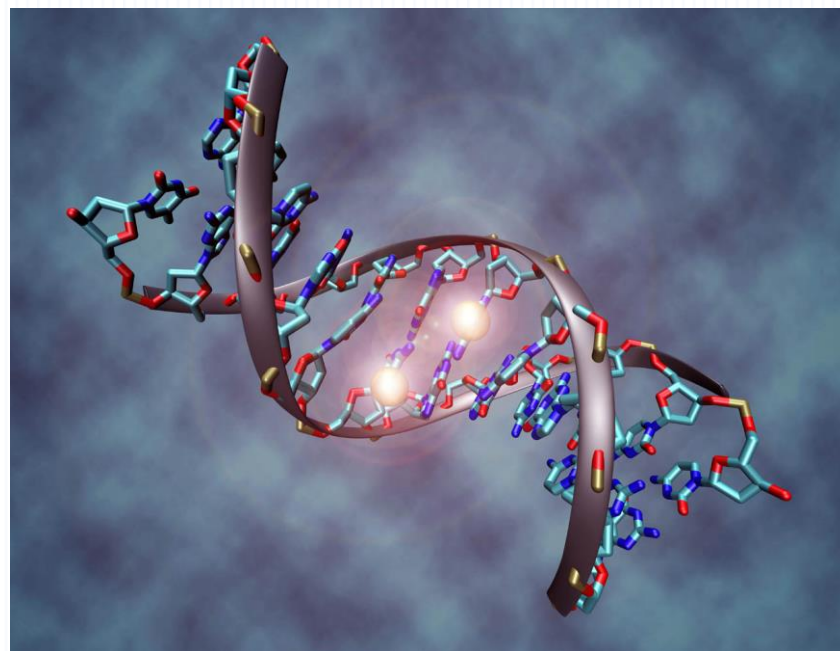




# ***SibEnzyme***

*New enzymes  
for DNA technologies*

Company and  
Products  
Information



Novosibirsk, Russia, 2017

# Common facts

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- ▶ SibEnzyme was founded in 1991
- ▶ Basic activities of the company are discovery, study and production of enzymes for genetic engineering and medical applications.
- ▶ SibEnzyme has a big collection of bacterial strains-producers of enzymes, including more than 100 recombinant ones. There are three companies in the world producing more than 200 restriction enzymes: New England Biolabs, Life Technologies and SibEnzyme.
- ▶ SibEnzyme first discovered new types of DNA endonucleases: nicking DNA endonucleases, site-specific methyl-directed DNA endonucleases.
- ▶ Strong R&D team with more than 35 years of scientific experience.
- ▶ We supply our enzymes worldwide including US, EU, Japan, Turkey, India, Malaysia, South Korea and other countries.

# Common facts

- ▶ Our headquarter is located in Scientific and Technological park of Novosibirsk, Russia
- ▶ Scientific and Technological park of Novosibirsk includes Academgorodok of Novosibirsk, Medical research cluster, Agricultural research cluster and Center of virology and biotechnology
- ▶ It is the second biggest scientific center in Russia
- ▶ SibEnzyme is a member of BioMed Cluster of the Novosibirsk region



# Our production division

- ▶ Our production division is located in industrial territory of Berdsk, the Novosibirsk region
- ▶ Our production occupies the territory of 1 hectare and located in several buildings.
- ▶ List of products includes more than 300 positions : enzymes for genetic engineering, DNA ladders, oligonucleotides, DNA preparations, kits and others.
- ▶ Our production is ISO certified



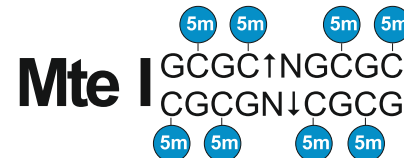
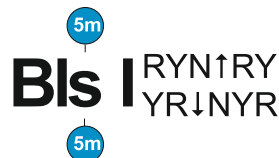
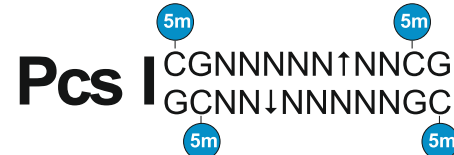
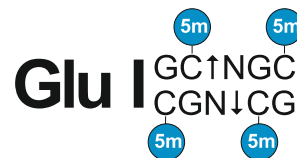
# SibEnzyme's activities

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- ▶ SibEnzyme is focused on a research and supply of new products and kits preferably for epigenetics
- ▶ SibEnzyme discovers, studies, produces and licences new restriction and MD endonucleases. For example, New England Biolabs (US) bought licence for production of more than 10 new enzymes.
- ▶ The last R&D projects of SibEnzyme in DNA technologies are:
  - ▶ GLAD-PCR assay – a new epigenetic method for DNA methylation analysis - effective alternative of bisulfite methods. Kits are available
  - ▶ Epigenetic sequencing – a new method of human DNA sequencing on NGS machines allowing to get DNA methylation patterns of whole genome
- ▶ SibEnzyme has a distribution network in Russia and sells enzymes in retail in some other countries.

# New type of enzymes

- ▶ Methyl-directed site-specific DNA endonucleases belong to a new type of enzymes discovered by SibEnzyme (Russia).
- ▶ These enzymes are very similar to restriction enzymes in biochemical properties and cleave DNA completely, but act in opposite way: they cleave only methylated DNA and do not cleave unmethylated DNA at all.
- ▶ Now 9 different MD DNA-endonucleases are commercially available



BlsI - at least one methyl group in each DNA strand

PkrI – at least 3 methyl groups in recognition sequence

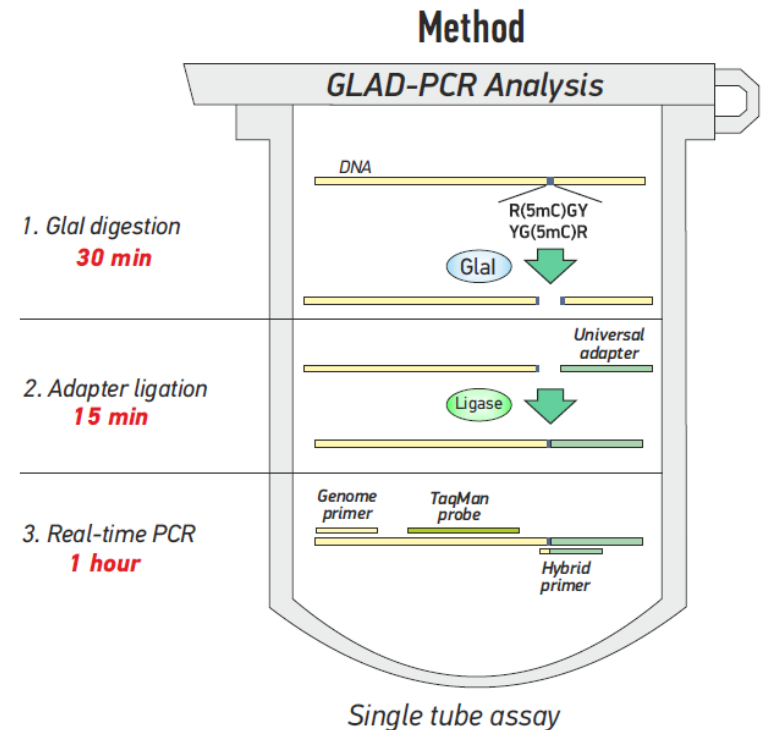


# GLAD-PCR assay: method

GLAD-PCR assay is the new methylation detection method developed by SibEnzyme which does not require bisulfite treatment. GLAD PCR analysis is performed in one tube and includes 3 steps. It is:

- ▶ Simple & Quick
- ▶ Requires only real time PCR-machine
- ▶ Sensitive – the measured limit is 6 molecules of methylated DNA in sample
- ▶ Reliable – mistakes rate is less than 1%

GLAD PCR assay was specially designed to detect methylated DNA in a presence of excess of unmethylated DNA which is typical for DNA preparations from clinical samples





# GLAD-PCR assay kit

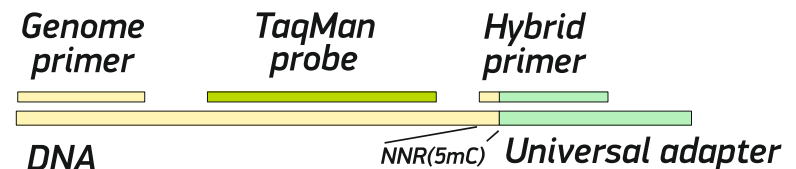
A new SibEnzyme kit for DNA methylation analysis is designed for 200 GLAD-PCR reactions. All reagents are included except primers and TaqMan probe.

## Reaction requires:

- sample DNA
- genome primer and TaqMan probe designed for R(5mC)GY site of interest
- hybrid primer (consist of two parts: one part is complimentary to the universal adapter and another one - to the DNA at the point of Glal hydrolysis).

On your request we will supply a customized kit with a set of primers and probe designed for your site of interest

More information at: [sibenzyme.com/products/kits](http://sibenzyme.com/products/kits)





# Applications

GLAD-PCR assay was recently used for development of epigenetic test for colorectal cancer screening and early detection.



**GLAD-PCR assay is an ideal instrument** for the development of diagnostic tests for diseases involving epigenetic changes such as most types of cancer, cardiovascular diseases, diabetes, Alzheimer's disease and others.

# Restriction enzymes and other products

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- ▶ SibEnzyme Ltd. is one of the leading companies in restriction endonucleases production;
- ▶ SibEnzyme portfolio includes about 200 traditional and fast digestion restriction enzymes.
- ▶ Besides we supply:
  - ▶ Nickases
  - ▶ DNA methyltransferases
  - ▶ Other Enzymes: polymerases, ligases, transcriptases
  - ▶ DNA Ladders
  - ▶ dNTPs

# Contacts

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