{bits}

"Sugars" are the foundations on which we build our solutions for you.

Biomaterial in Tokyo

BIOMASS

Actively Using Biomass to Support the Development of a Sustainable Society.

The fibres found in plants are polymers of sugars (cellulose and hemicellulose). We at bits hope that by utilizing biomass and biotechnology based on "sugars" to produce renewable energy and industrial materials, we can support a clean and sustainable society.

Development of Second Generation Bioethanol

Bioethanol has a long history of use as an alternative fuel, beginning with industrial grade ethanol produced from potato starch being mixed with gasoline. Today, the need for "second generation bioethanol", which is produced from non-edible plant material, is gathering attention, with a heavy focus being placed on cellulase enzymes that hydrolyze and break down the biomass into "sugars". We have developed cultivation systems and techniques for cellulase-producing filamentous fungi (*Trichoderma reesei*) and other microbes that convert sugars into ethanol and oils such as yeasts (*Saccharomyces cerevisiae*) and thraustochytrids (*Schizochytrium sp.*), making use of our 5L, 30L, and 1㎥ cultivation equipment to scale up from lab to industrial scale.

Research Facility Fit for High Quality Research

"Sugars" come in various forms: monosaccharides, disaccharides, oligosaccharides, polysaccharides, neutral sugars, acidic sugars, and sugar alcohols. The various forms are normally analyzed using HPLC, but we combine it with the use of UV detection, fluorescence detection, refractive index detection (RI), pulse amperometric detection (PAD), as well as charged aerosol detection (CAD) to detect compounds that do not absorb UV light or ionize for mass spectroscopy.

Cellulosic biomass not only contains cellulose, but also hemi-cellulose, which is comprised of the pentoses arabinose and xylose, which most organisms cannot metabolism effectively. To develop microbes that can withstand the harsh industrial environment, we have various equipment to carry our gene modification, such as electroporation system, thermal cycler, real time PCR, microplate reader, 2UV trans-illuminator, and high-speed vacuum concentrator, which we use in our joint research and development projects with various universities and national research institutes.

TECHNICAL INFOMATION

Major Projects

Development of Technology to Efficiently Convert Biomass Energy

(New Energy and Industrial Technology Development Organization)
Research on Simultaneous Cultivation of Recombinant *E. coli* and *C. glabrata* for Alcohol Production
July 27, 2007 – March 20, 2009

Enhancing the Branding of Regional Resources

(Chiba Prefecture)
"Development of Food Products Containing Polyphenols from Peanut Skin"
September 11, 2009 – March 31, 2008

New Industry Development in Kashiwa City

(City of Kashiwa)
"Ethanol Production from Wheat Straws Using Novel Genetically Modified Yeast"
August 1, 2007 – March 31, 2008

Sustainable Employment Opportunities in Developing a Cosmopolitan City in Chiba Prefecture

(Chiba Prefecture)
"Evaluation of Producing and Realizing Vitamin Production using Yeasts
October 1, 2008 – March 31, 2009

Establishing the Technology to Utilize Soft Cellulose

(Ministry of Agriculture, Forestry and Fisheries)
"Kashiwanoha Soft Cellulose Utilization Project"
June 19, 2009 – March 31, 2013

Strategic Development of Next-Generation Bioenergy Utilization Technology

(New Energy and Industrial Technology Development Organization)
"Development of Biojet Fuel and Marine Fuel Production System Using Thraustochytrids"
August 8, 2013 – March 20, 2015

Development of Efficient Elemental Technologies for Biofuel Production

(New Energy and Industrial Technology Development Organization)
"Research and Development on Producing Woody-Biomass Pulp Degrading Enzymes by Microbial Cultivation on Soluble Sugars"
December 18, 2013 – current

Development and Verification of Cellulosic Ethanol Production System

(New Energy and Industrial Technology Development Organization)
"Developing and Evaluating the Use of Steam Explosion on Pulp for Bioethanol Production"
April 1, 2015 – current

CORPRATE INFOMATION

Company Name
Biomaterial in Tokyo CO.,LTD.

Established
June 30, 2006

Capital
7.5 million yen

Main Business Activities
Research and development on biomass use
Consultation work on biomass use
Development of Food Materials

A Message from the CEO

- Striving for New Bio-Business Opportunities –

Biomaterial in Tokyo (bits) was established in 2006 out of the desire to combine “research” with “monozukuri”, a Japanese word meaning "to make something". Focusing specifically on “sugars” and using our knowledge in biotechnology, bits bridges people with people and companies with companies, aiming to become a leading expert, consultant, and engineer in the bioscience industry.

By unlocking the hidden potentials of sugars and developing new materials based on scientific principles, we aim to provide our clients with complete solutions based on a system of technology and research background.

Success only comes once our products and services are widely used, both by industrial experts and the general public, and this is one of the essences of monozukuri. With that in mind, we hope to continue advancing in our current research and technology development while venturing out onto new possibilities.

Yoshiya Izumi
Chief Executive Officer
Biomaterial in Tokyo Co., Ltd.

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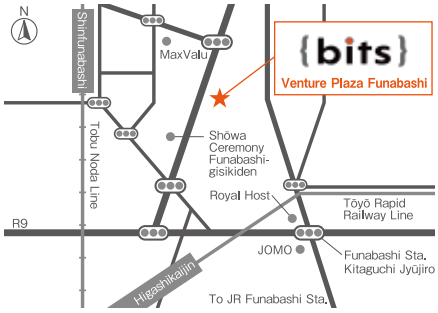
<Access>
JR Sobu Line: 14 minutes from Funabashi Station
Toyo Rapid Railway Line: 6 minutes from Higashi-Kaijin Station
Tobu Noda Line: 9 minutes from Shin-Funabashi Station
Keiyo Road: 2.5 km from the Funabashi Interchange



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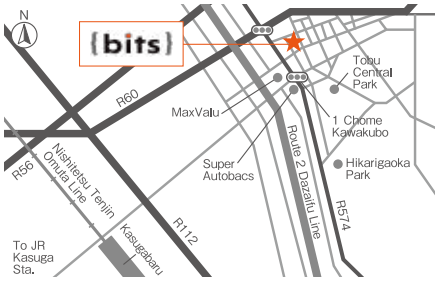

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