MAR ATHANASIOS COLLEGE FOR ADVANCED STUDIES TIRUVALLA (MACFAST)

Thiruvalla – 689101

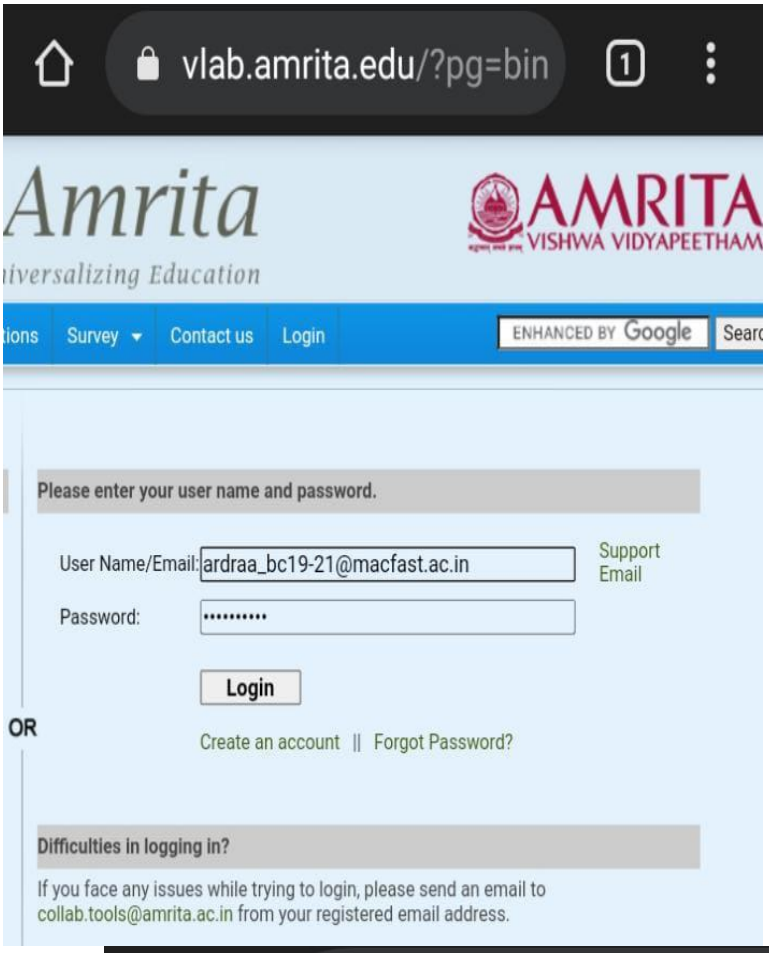
REPORT ON VIRTUAL LAB

MACFAST has been allotted as the nodal centre of **Amrita University's VALUE Virtual lab** sponsored by Ministry of Human Resource Development; Govt. of India.Virtual laboratory had made learning science in an enjoyable and easier way. Virtual lab enable students to perform various experiments that are difficult to perform in real laboratories. Students will get practical training via computer interface.Students and teachers can avail the different tools for learning, including animated demonstrations, video lectures self-evaluation etc.

Objective:

- To provide complete Learning Management System
- To perform the practical experiments related to the theoretical courses
- Learning basic and advanced concepts through remote experimentation

Sl. No	Institute/Organization	Nodal Coordinator(s)
	Kerala	
25	Mar Athanasios College for Advanced Studies, Tiruvalla Thukalassery, Thiruvalla, Kerala 689101	Prof. Biju Dharmapalan Prof. Blessan Santhosh George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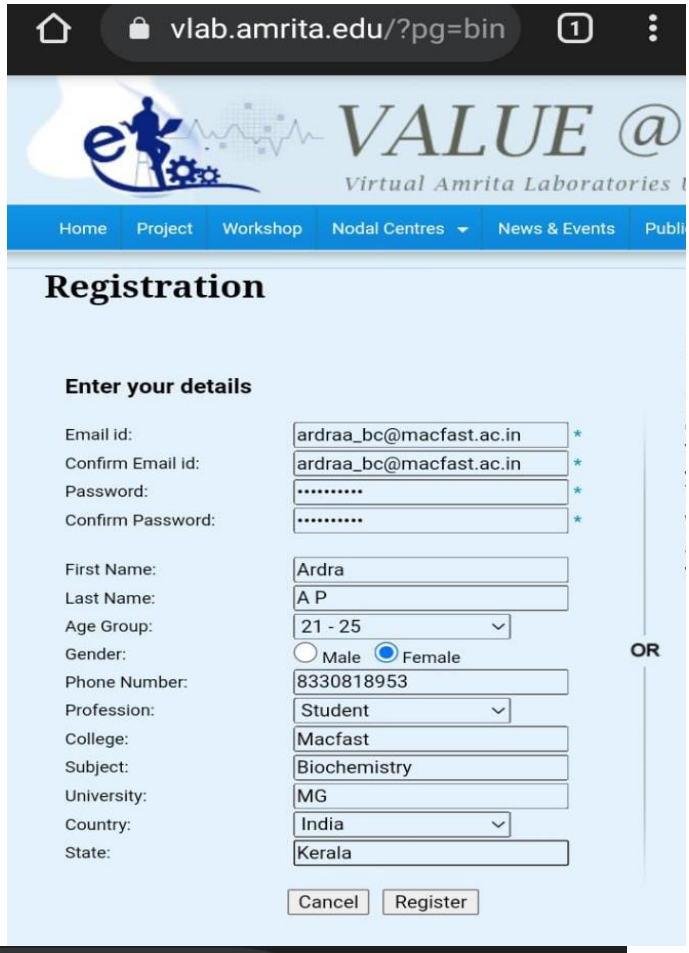
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HOD Biosciences MACFAST <hodbio@macfast.org>

VALUE Virtual Lab NOdal Centre

1 message

Biju Dharmapalan <biju@macfast.org> Sat, May 2, 2015 at 3:07 PM
To: bioscience@macfast.org, "Fr. Pradeep Vazhatharamalayil" <principal@macfast.org>, Pradeep Mammen <pradeepvmammen@macfast.org>

Dear Teachers,
MACFAST has been allotted as the nodal centre of Amrita University's VALUE Virtual lab sponsored by Ministry of Human Resource Development, Govt. of India. I request all of you to use the Virtual Lab facility in your teaching sessions. You can log using your MACFAST email account in the following link
http://vlab.amrita.edu/index.php
In case you find any difficulty please feel free to contact me
Biju Dharmapalan

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Biju Dharmapalan
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HOD Biosciences MACFAST <hodbio@macfast.org>

VIRTUAL LAB PRACTICAL SESSIONS TILL JUNE 14TH

1 message

Biju Dharmapalan <biju@macfast.org> Tue, Jun 2, 2020 at 11:10 PM
To: bio2019-21@macfast.ac.in, bioscience <bioscience@macfast.org>

Dear Students,
I request all of you to go through the AMRITA VALUE virtual lab supported by MHRD,Govt.of India till June 14 . The doubts in the practical sessions can be clarified with concerned teachers or with me any time.Since MACFAST is a nodal centre you can create an account using your MACFAST email in the link provided below,
http://vlab.amrita.edu/?sub=3
You may choose practical sessions of your choice(at least one session from your course either first sem or any other semesters) , and kindly read the principle and observe the animations carefully.
The pre-test and post test questions of practical classes attended should be copied to your notebooks and submitted for evaluation after reopening.
In case you find any difficulty you are free to contact me during working hours.

Warm regards,
Biju

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Biju Dharmapalan
Science Communicator
Assistant Professor & Head,School of Biosciences
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Amirtha Virtual Lab II - Biochemistry Virtual Lab II

Experiment No: 1

Isolation of β Amylase from Sweet potato

Self evaluation

1) Beta ~~amalyae~~ amylase cleaves the ____ bond of starch molecule

Ans: α 1,4

2) Starch is a ____

Ans: Homopolysaccharides

3) Why Beta amylase an exoenzyme

Ans: It hydrolyzes the glycosidic linkage from the non-reducing end of polysaccharides

4) Beta-amylase acts on starch to give

Ans: Maltose

5) The branching chain linkage in Amylopectin is

Ans: α 1, 6

Assignments

1.) perform the experiment and try to Isolate the β amylase enzyme from other Sources

2.) Study the behaviour of the β amylase enzyme Isolate from Sweet potato

3.) What will you observe when the Isolated beta amylase enzyme is Subjected to biuret test

4.) What happened if we add normal Saline instead of PBS during beta amylase extraction

5) How can we differentiate beta amylase from alpha amylase.

Answers

2) Amylase are enzymes that are hydrolyze starch. The enzyme Beta amylase catalyses the hydrolysis of α 1,4 glycosidic linkage from the non reducing end of the polysaccharides (starch - amylose, amylopectin) to yield maltose unit. The glucose residue at the non reducing ends of the outer branches are removed enzymatically to facilitate the mobilization of starch for energy production. Thus it is also known as 1,4 α D Glucan maltohydrolase. β amylase is specific for amylose chains of six glucose units.

3) No action. Biuret test is used to find the peptide bond. ~~There is no peptide bond in β amylase~~. Beta amylase is a enzyme.

4) Beta amylase can be isolated from Cadaba farinosa (Indian cadaba).

5) α amylase is known as 1,4 α-D glucan glucano hydrolase and glycogenase. It is produced by mamalian digestive system. Can also be produced by plants and fungi. Calcium is essential for function optimum pH is 6.7 - 7.0. Mainly involved in the food digestion process. Can act anywhere on substrate. faster acting than β amylase. Insensitive to higher temperature and heavy metal ions and is inactivated at low pH.

β amalyse is also known as 1,4 α-D-glucan malto hydrolase glycogenase and Saccharogen. It is produced by bacteriaß, fungi, and plants, cannot be produced by tissues or cells of ~~am~~ animals. Calcium is required optimum pH is 4.0 - 5.0. Mainly involved in fruit ripening and seed germination process. It can act from the non reducing end and catalyze the hydrolysis of the the second α 1,4 glycosidic bond. Slower acting than α amylase. It is Sensitive to high temperature and heavy metal ions and is stable at a low pH.

4) PBS has pH range from 6.0 – 7.4 and normal Saline has pH 5.5. The pH range for Beta-amylase is 4.0 – 5.0. So while using Saline buffer instead of PBS will give more accuracy.