

CHAPTER TWENTY EIGHT

GLYCOGEN BREAKDOWN

What is the process by which glycogen is broken down in cells called ?

Glycogenolysis.

What is the important enzyme in glycogenolysis ?

Glycogen phosphorylase. This is a rate limiting enzyme (the reactions in the whole pathway can only proceed as fast as the rate at which the rate limiting enzyme catalyzes its reaction). Like many rate limiting enzymes glycogen phosphorylase is a target for various mechanisms of controlling the rate of the reaction pathway it is involved in.

What reaction does glycogen phosphorylase catalyze ?

It cleaves the bond between a glucose at the end of a glycogen chain and the glucose adjacent to it. The free glucose is then combined with a phosphate group to form glucose-1-phosphate.

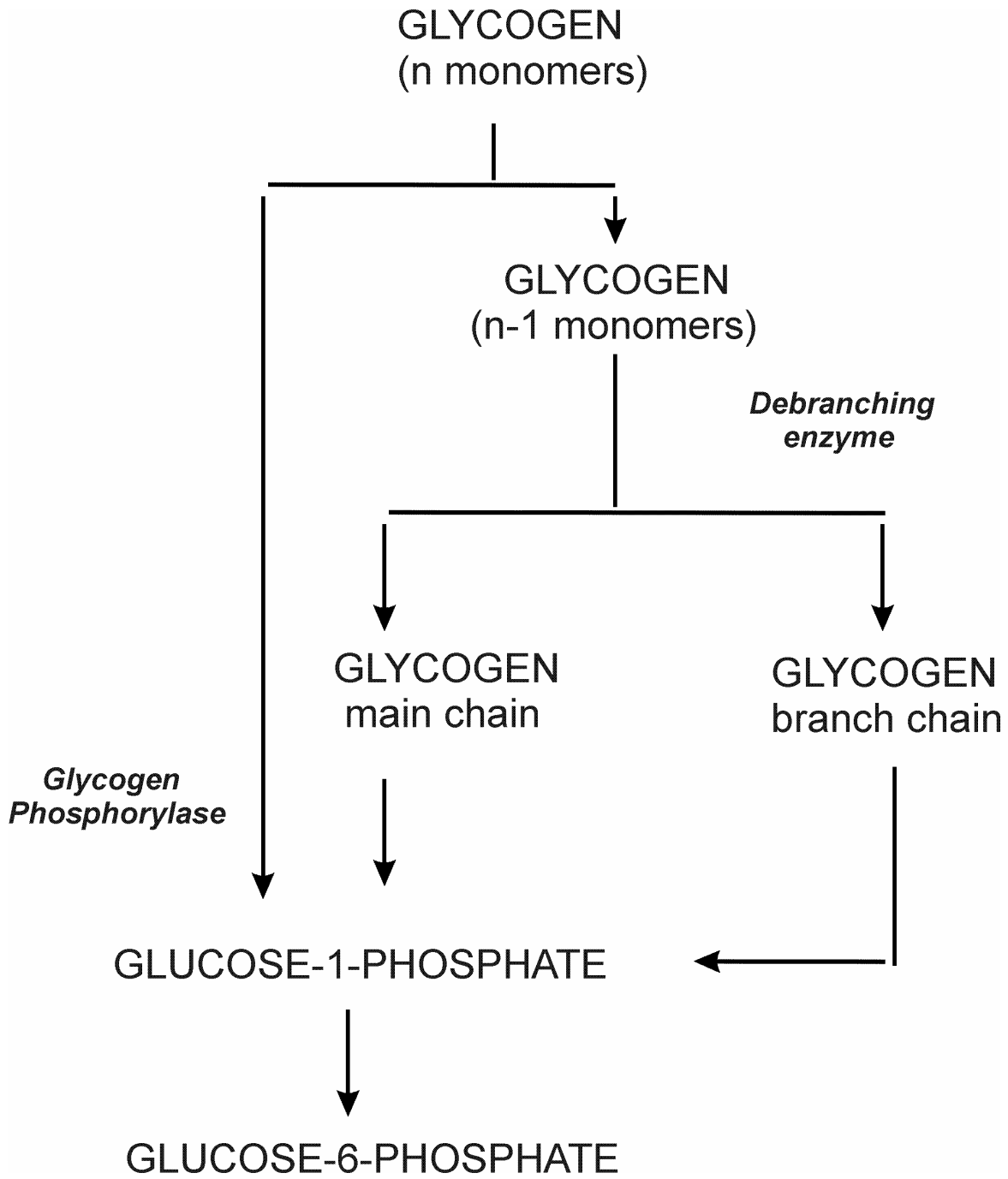
What happens when glycogenolysis reaches a branch point in a glycogen molecule ?

A second enzyme, the debranching enzyme, catalyzes the reactions necessary to remove the branch chain from the main chain. Then glycogen phosphorylase enzymes can act on both the main chain and on the broken off branch chain to release more glucose molecules.

What happens to the glucose-1-phosphate molecules produced ?

The glucose-1-phosphate can then be converted back to glucose-6-phosphate and used for glycolysis.

Draw the important steps in glycogenolysis. Include the important enzyme(s).



You can purchase the full 50 chapters of

GET TO GRIPS WITH **BIOCHEMISTRY**

BOOK ONE

**ENERGY METABOLISM, CARBOHYDRATES
AND LIPIDS**

AT

<http://get2grips.50webs.com>

email: pmhbyrne@gmail.com

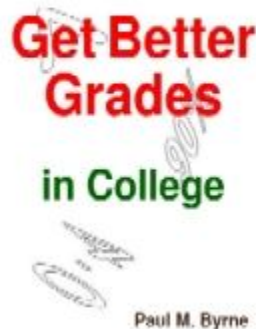
Copyright ©2008 Paul M. Byrne.

All rights reserved. No part of this book may be reprinted or reproduced or utilized in any form or by any electronic, mechanical, or other means, now known or hereafter invented, including photocopying or recording, or in any information storage or retrieval system, without permission in writing from the author. All inquiries should be addressed to the author at pmhbyrne@gmail.com.

by the same author

GET BETTER GRADES

IN COLLEGE



Does it feel like you don't get the grades you should get for the work you have done and the amount you know ?

Would it be possible for you to get more marks, not just by trying to learn more but by making some simple changes to the way you present what you do know in your coursework and exam scripts?

<http://betterbgrades.50webs.com>

There are things other than a student's knowledge that examiners value when assigning grades.

This ebook has 33 chapters of suggestions on **how to improve your grades** with thirty three short chapters, each covering specific and practical techniques that will help you **GET BETTER GRADES**.

Personalised Essay Correction

You will also find details on the website of how to have an essay you have written reviewed by the author and get further advice on incorporating some of the techniques in this book into your own work.