# Pyruvic Acid Encyclopedia Article

## Pyruvic Acid

The following sections of this BookRags Literature Study Guide is offprint from Gale's For Students Series: Presenting Analysis, Context, and Criticism on Commonly Studied Works: Introduction, Author Biography, Plot Summary, Characters, Themes, Style, Historical Context, Critical Overview, Criticism and Critical Essays, Media Adaptations, Topics for Further Study, Compare & Contrast, What Do I Read Next?, For Further Study, and Sources.

(c)1998-2002; (c)2002 by Gale. Gale is an imprint of The Gale Group, Inc., a division of Thomson Learning, Inc. Gale and Design and Thomson Learning are trademarks used herein under license.

The following sections, if they exist, are offprint from Beacham's Encyclopedia of Popular Fiction: "Social Concerns", "Thematic Overview", "Techniques", "Literary Precedents", "Key Questions", "Related Titles", "Adaptations", "Related Web Sites". (c)1994-2005, by Walton Beacham.

The following sections, if they exist, are offprint from Beacham's Guide to Literature for Young Adults: "About the Author", "Overview", "Setting", "Literary Qualities", "Social Sensitivity", "Topics for Discussion", "Ideas for Reports and Papers". (c)1994-2005, by Walton Beacham.

All other sections in this Literature Study Guide are owned and copyrighted by BookRags, Inc.

# Contents

Pyruvic Acid Encyclopedia Article.....1

Contents.....2

Pyruvic Acid.....3

# Pyruvic Acid

Pyruvic acid is a 3-carbon alpha-keto acid that is an intermediate in several important metabolic pathways. It is the simplest of all alpha-keto acids, containing a carbonyl group C{double bond}O on the middle carbon. Pyruvic acid (in its salt form pyruvate) is formed in the normal metabolism of glucose as a product of the glycolysis metabolic pathway. In a series of enzyme catalyzed reactions, the six carbon sugar is converted to two molecules of pyruvate that are further metabolized, with the loss of carbon dioxide, to two molecules of acetyl coenzyme A. Acetyl coenzyme A is fed into the aerobic Krebs cycle where it is further converted to carbon dioxide and water. In anaerobic conditions, pyruvate may accept hydrogen atoms that would otherwise be transferred to oxygen and thereby be converted to lactic acid. Lactic acid serves as an endpoint for glucose metabolism and may accumulate in tissues, sometimes to toxic levels. Pyruvate can be converted to the amino acid alanine by replacing the carbonyl group with an amino group (NH2). In the Hatch-Slack photosynthetic pathway, pyruvate plays an important role as a precursor to phosphoenolpyruvate, the molecule that serves as an acceptor of carbon dioxide.