

# **The Wittig Reaction Experiment Analysis**

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The Wittig Reaction Experiment Analysis UC Berkeley College of Chemistry. Chemistry 112B. Organic Chemistry. The Wittig Reaction. Author: Jonathan Melville Graduate Student Instructor: Rebecca Triano March 13, 2014. 1 Introduction. The Wittig reaction, discovered in 1954 by Georg Wittig, is one of the most common techniques used for the stereoselective preparation of alkenes. Broadly speaking, the reaction allows for the formation of an alkene product and a triphenylphosphine oxide side product from the reaction of an aldehyde ... The Wittig Reaction - Open Computing Facility The Wittig Reaction. Written by Michael. Purpose: The purpose of this experiment was to learn about the use of carbanions and stabilized carbanions in synthesis through performing a synthesis that constructs a carbon-carbon bond. Another purpose of this experiment lies in the purification of an organic base using an acidic aqueous extraction. The Wittig Reaction: Experiment - Odinity Wittig olefination (also known as the Wittig reaction) was developed by Georg Wittig in 1954; a reaction for which he was awarded a Nobel Prize in Chemistry 25 years later. 6 Many other olefination reactions have been classified since Wittig's publication, most of which involve a variety of heteroatoms substituting for the more commonly used phosphorus ylide, as well as some being mediated by transition metals. 7 The Wittig Reaction - Formal Report - Odinity The Wittig reaction generates an alkene via the reaction between a stabilized carbon

nucleophile and a ketone or aldehyde (most other carbonyl groups are unreactive) . Figure 1 shows the overall process. Synthesis of an Alkene via the Wittig Reaction ... The Wittig Reaction allows the preparation of an alkene by the reaction of an aldehyde or ketone with the ylide generated from a phosphonium salt. The geometry of the resulting alkene depends on the reactivity of the ylide. If R is an electron withdrawing group, then the ylide is stabilized and is not as reactive as when R is alkyl. Wittig Reaction - Organic Chemistry Experiment 1 : The Wittig and Suzuki reaction Introduction The Wittig reaction is named after its discoverer, Georg Wittig, winner of the 1979 Nobel Prize for Chemistry. It is an effective way of making an alkene carbon-carbon double bond from an aldehyde or ketone with the help of an organophosphorus intermediate. Experiment 1 : The Wittig and Suzuki reaction Wittig Reaction - Solving Problems by Retrosynthetic Analysis. To predict the reactants of a Wittig reaction, cleave the C=C bond and place an oxygen on one and (Ph)<sub>3</sub>P on the other end of the bond: The arrow above shows the retrosynthetic direction - i.e. what compounds had reacted to prepare the alkene. Wittig Reaction Practice Problems - Chemistry Steps Prelab The Wittig reaction was discovered in 1954 by Georg Wittig, for which he was awarded the Nobel Prize in Chemistry in 1979. It is one of the most direct methods for the synthesis of alkenes with the fewest isomeric products. Experiment 12: Wittig Reaction of trans-Cinnamaldehyde ... The plate was analyzed under a UV light, and R<sub>f</sub> values were calculated for each of the 3 spots. Results: In this experiment, a Wittig reaction was used to react trans-cinnamaldehyde with

benzyltriphenylphosphonium chloride to produce 1,4-diphenyl-1,3-butadiene. Lab Report 5 copy - Grade: A - CH 238 - UAB - StuDocu Reaction Scheme. Analysis of Results (12 points): 1) (3 points) In no more than three sentences, describe the point of this experiment, and how/why it was successful 2) Analysis subquestions (4 points): (a) Draw the mechanism of the Wittig reaction. Solved: Eto PPh, Br ON KOC(CH<sub>3</sub>)<sub>3</sub>. Toluene OzN Figure 1. Re ... The variation in Wittig reaction stereochemistry is attributed to dominant kinetic control in nearly all cases. Formation of cis or trans oxaphosphetanes is the decisive step, and this occurs by an asynchronous cycloaddition. An interplay of 1,2- and 1,3-steric interactions decides which diastereomeric oxaphosphetane will be favored. 1. The Wittig Reaction - CCC/UPCMLD The Wittig reaction or Wittig olefination is a chemical reaction of an aldehyde or ketone with a triphenyl phosphonium ylide to give an alkene and triphenylphosphine oxide. It is widely used in organic synthesis for the preparation of alkenes. It should not be confused with the Wittig rearrangement. Wittig reactions are most commonly used to couple aldehydes and ketones to singly-substituted triphenylphosphonium ylides. For the reaction with aldehydes, the double bond geometry is readily predict Wittig reaction - Wikipedia FT-IR, Ms, 1H-and <sup>13</sup>C- NMR analysis Reaction 15 min. (PhhP (PhP-O r.t 1. Place 1 mmol of benzaldehyde and 1 mmol of (Using a pestle, blend the two starting materials together until they form a homogeneous, translucent paste. in a mortar 2. Allow the reaction mixture to stand for 15 min. Workup 3. Solved: CHM 2260 ORGANIC CHEMISTRY LABORATORY II Experimen ... Adapted from "Exploring the Wittig

Reaction: A Collaborative Guided Inquiry Experiment for the Organic Chemistry Laboratory", James A. MacKay and Nicholas R. Wetzel, Journal of Chemical Education, 2014, 91, 722

Interpreting NMR Spectra from your Wittig Reaction

Interpreting NMR Spectra from your Wittig Reaction

Wittig olefination of d-glyceraldehyde acetonide (R)-37 with  $\text{Ph}_3\text{P}=\text{CHCHO}$  gives, after reduction of the enal with diisobutylaluminum hydride, the (E)-allylic alcohol 159 (Scheme 68). The Katsuki-Sharpless enantioselective epoxidation 149a-149d applied to 159 allows to prepare d-arabinitol (= d-lyxitol) and ribitol, a meso-alditol. Similarly, Wittig olefination of (R)-37 with  $\text{Ph}_3\text{P}=\text{CHCH}(\text{OEt})$  ...

Wittig Olefination - an overview | ScienceDirect Topics 10/07/2013

Experiment 5: Wittig Reaction Purpose

The purpose of this experiment is to synthesize trans-9- (2-phenylethenyl) anthracene using a wittig reagent formed by reacting phosphonium chloride with base.

Experiment 5: Wittig Reaction - Term Paper

In this experiment, a Wittig reaction was performed in order to synthesize a mixture of (E)- and (Z)-stilbene. Photoisomerization was then performed to isolate (E)-stilbene by transforming (Z)-stilbene into (E)-stilbene. The presence of the products throughout the experiment was monitored by  $^1\text{H}$  NMR.

Analysis Of Photoisomerization Of (E)-Stilbene - 1084 ...

Wittig reaction is an organic reaction between a phosphonium ylide and an aldehyde or a ketone that produces an alkene. Using this reaction in the undergraduate teaching curriculum gives a gre... (PDF)

Greening the Wittig and other reactions for the ...

Methodology used for Quantitative and Qualitative Assessment

Each reaction has been measured by

quantitative and qualitative means. The quantitative assessment includes a volume of waste estimate, and an environmental, health and safety assessment. With a collection of more than 45,000 free e-books, Project Gutenberg is a volunteer effort to create and share e-books online. No registration or fee is required, and books are available in ePub, Kindle, HTML, and simple text formats.

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