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# 43 Transdermal Transport by Sonophoresis

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## CONTENTS

43.1 Introduction .....	619
43.2 Physical Characteristics of Ultrasound.....	620
43.2.1 Frequency .....	620
43.2.2 Mode.....	620
43.2.3 Intensity .....	620
43.3 Ultrasound-Enhanced Percutaneous Absorption:	
Pharmacokinetic Data .....	621
43.3.1 Medium- and High-Frequency Phonophoresis .....	621
43.3.2 Low-Frequency Sonophoresis.....	623
43.4 Mechanism of Action of Ultrasound on Transdermal Transport .....	626
43.4.1 Heating.....	626
43.4.2 Cavitation.....	627
43.4.3 Miscellaneous .....	630
43.5 Biological Consequences of Ultrasound Application on Skin.....	630
43.5.1 Removal or Modification of Stratum Corneum Lipids.....	630
43.5.2 Imaging Pathway of Sonophoretic Transport .....	630
43.5.3 Skin Tolerance to Ultrasound .....	631
43.6 Stability of Drugs Exposed to Ultrasound.....	634
43.7 Prospects: is Painless Needle-Free Injection a Realistic Goal? .....	634
References.....	634

## 43.1 INTRODUCTION

Phonophoresis or sonophoresis is the term given to the use of ultrasound as a physical enhancer of percutaneous absorption of drugs. The skin provides an essential barrier function that effectively limits exchanges with the external environment in both directions: reduction of penetration of exogenous compounds and reduction of transepidermal losses. The main barrier property of the skin is due to the stratum corneum (SC), the outermost layer of the skin, that is a 10- to 20- $\mu\text{m}$ -thick membrane composed of compact stacking of cornified keratinocytes that are separated by highly ordered intercellular lipid bilayers.

Topical or systemic administration of drugs through the skin needs to overcome this barrier. However, significant transdermal transport of high-molecular-weight molecules is quite impossible