

# VU Research Portal

## Local Vitamin D Metabolism in Bone and Muscle

van der Meijden, K.

2017

### **document version**

Publisher's PDF, also known as Version of record

[Link to publication in VU Research Portal](#)

### **citation for published version (APA)**

van der Meijden, K. (2017). *Local Vitamin D Metabolism in Bone and Muscle*. [PhD-Thesis - Research and graduation internal, Vrije Universiteit Amsterdam].

### **General rights**

Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

- Users may download and print one copy of any publication from the public portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain
- You may freely distribute the URL identifying the publication in the public portal

### **Take down policy**

If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.

### **E-mail address:**

[vuresearchportal.ub@vu.nl](mailto:vuresearchportal.ub@vu.nl)

# CONTENTS

CHAPTER 1	General introduction	7
CHAPTER 2	Primary human osteoblasts in response to 25-hydroxyvitamin D <sub>3</sub> , 1,25-dihydroxyvitamin D <sub>3</sub> and 24R,25-dihydroxyvitamin D <sub>3</sub>	33
CHAPTER 3	Regulation of CYP27B1 mRNA expression in primary human osteoblasts	55
CHAPTER 4	Mechanical loading and the synthesis of 1,25(OH) <sub>2</sub> D in primary human osteoblasts	75
CHAPTER 5	Effects of 1,25(OH) <sub>2</sub> D <sub>3</sub> and 25(OH)D <sub>3</sub> on C2C12 myoblast proliferation, differentiation, and myotube hypertrophy	95
CHAPTER 6	The effects of vitamin D deficiency on bone structure and remodeling in adult rats with a normal mineral homeostasis	125
CHAPTER 7	Long-term vitamin D deficiency in older adult C57BL/6 mice does not affect bone structure, remodeling and mineralization	145
CHAPTER 8	General discussion	167
	General summary	197
	Algemene samenvatting	203
	Dankwoord	209
	About the author	215