

論文全文要約

Effects of High-Frequency Near-Infrared Diode Laser Irradiation
on IL-1 β -Induced Expression of Inflammatory Cytokines and
Matrix Metalloproteinases in Human Primary Chondrocytes

(ヒト初代培養軟骨細胞における炎症性サイトカインおよびマトリックスメタロプロテアーゼの IL-1 β 誘導性発現に対する高周波近赤外半導体レーザー照射の影響)

Ph.D. Applicant Shuzo Sakata

Graduate School of Biomedical and Health Sciences
Hiroshima University

Supervisor: Kotaro Tanimoto

2020

Contents

I . Introduction

II . Materials and Methods

2-1. Cell Culture

2-2. Chondrocyte human recombinant IL-1 β stimulation

2-3. Laser irradiation

2-4. Quantitative real-time polymerase chain reaction analysis

2-5. Western blot analysis

2-6. Enzyme-linked immunosorbent assay (ELISA)

2-7. Immunocytochemistry

2-8. Imaging cytometry analysis

2-9. Electrophoretic mobility shift assay (EMSA)

2-10. NF- κ B p65 transcription factor assay

2-11. Statistical analysis

III. Results

3-1. Effects of high-frequency near-infrared diode laser irradiation on gene expression of inflammatory cytokines in NHAC-Kn cells

3-2. Effects of high-frequency near-infrared diode laser

irradiation on gene expression of MMPs in NHAC-Kn cells

3-3. Effects of IL-1 β or high-frequency near-infrared diode laser irradiation on inflammatory cytokines protein expression in NHAC-Kn cells

3-4. Effects of high-frequency near-infrared diode laser irradiation on protein expression of matrix metalloproteinases in NHAC-Kn cells

3-5. Effects of high-frequency near-infrared diode laser irradiation on secretion of matrix metalloproteinases in NHAC-Kn cells

3-6. Effect of IL-1 β or high-frequency near-infrared diode laser irradiation on NF- κ B phosphorylation

3-7. Effect of IL-1 β or high-frequency near-infrared diode laser irradiation on nuclear NF- κ B translocation

3-8. Effect of IL-1 β or high-frequency near-infrared diode laser irradiation on NF- κ B transcriptional activity

IV. Discussion

V. Figures and Tables

VI. References