

## Materials

### 1. Biological Material

1.1 Mouse calvarial cell line MC3T3-E1, ATCC, USA

### 2. Tested Material

2.1 Titanium disks (acid pickling), Straumann, Walden-burg, Switzerland

### 3. Equipments and Instruments

3.1 Autoclave Hiclave™, Model HB-50, Hirayama Manufacturing Corp., Japan

3.2 Automatic pipetter, Portable Pipette-Aid Model XP, Drummond Scientific Company, USA

3.3 Biotrak™ II plate microplate reader, Model 80-2115-82, Amersham Biosciences, Sweden

3.4 Biohazard Laminar Airflow Class II, Astec Microflow Model ABS1200TCN, Bioquell Lab, UK

3.5 Confocal laser scanning electron microscope, Model FV300, Olympus, Japan

3.6 CO<sub>2</sub> Incubator, Series II water jacketed CO<sub>2</sub> Incubator Model 3111, Thermo Forma, USA

3.7 Digital Camera, Nikon Coolpix Model 4500, NIKON, Japan

3.8 Desk Top Centrifuge, Model 5417C, Eppendorf, Germany

3.9 Electric Balance, Adventurer™ AR2140, Ohaus, USA

3.10 Hemocytometer Neubauer improved bright-line Dept 0.1 mm, Model 717810, BRAND, Germany

3.11 Hot Air Oven, Model UM500, Memmert, USA

3.12 Inverted light microscope, Elipse Model TE2000-U, Nikon, Japan

3.13 Microplate Reader, Power waveX , Bio-tek Instruments Inc, USA

3.14 Pipetter 20-microlitre, Cat No.U66585E, Pipetman Gilson®, France

3.15 Pipetter 200-microlitre, Cat No.U65792E, Pipetman Gilson®, France

3.16 Pipetter 1000-microlitre, Cat No.U69088E, Pipetman Gilson®, France

3.17 pH-meter, Precisa Model pH900, Precisa Instrument, Switzerland

- 3.18 Refrigerated Centrifuge, Labofuge Model 400 R, Heraeus, Germany
- 3.19 Scanning electron microscope, JSM-5800LV, JEOL LTD, Japan
- 3.20 Sputter Coater, SPI-Module™, Model 11425, SPI supplies, USA
- 3.21 Ultrasonic cleaner, Cavitator Model ME11, Mettler Electronics Corp., USA
- 3.22 Water Bath, Model WB22, Memmert, Germany

#### **4. Disposable materials**

- 4.1 Cell scraper 24 cm, Cat No.TPP-99002, TRP AG, Germany
- 4.2 Centrifuge tubes 15 ml, Cat No.430052, Corning, Corning intercorporated, USA
- 4.3 Centrifuge tubes 50 ml, Cat No.BCT-P50BS, Biologix, USA
- 4.4 Cryotube 2.0 ml, Cat No. 2008-12, Nunc™, Denmark
- 4.5 Culture flask 75 square cm, Cat No.430641, Corning, Corning intercorporated, USA
- 4.6 Culture plate, 24 well, Cat No.3524, Costar, Corning intercorporated, USA
- 4.7 Culture plate, 96 well, Cat No.3599, Costar, Corning intercorporated, USA
- 4.8 Disposable Pipette tips 10 µl, Treff Lab Cat No.96.8704.9.01, Treff AG, Switzerland
- 4.9 Disposable Pipette tips 200 µl, Treff Lab Cat No.96.8700.4.02, Treff AG, Switzerland
- 4.10 Disposable Pipette tips 1000 µl, Treff Lab Cat No.96.8776.6.01, Treff AG, Switzerland
- 4.11 Eppendorf centrifugation tube 1.5 ml, Eppendorf, Germany
- 4.12 Filter paper dia 110 mm, Cat No.413, ALBET, Germany
- 4.13 Glass cover slips, Cat No.470045, BRAND, Germany
- 4.14 Glass pasteur pipettes, Cat No.747720, BRAND, Germany
- 4.15 Microscope glass slides, Cat No.474743, BRAND, Germany
- 4.16 Pipette Plugged 2 ml, Cat No.159617, Nunc™, Denmark
- 4.17 Pipette Plugged 10 ml, Cat No.159633, Nunc™, Denmark
- 4.18 Pipette Plugged 25 ml, Cat No.159641, Nunc™, Denmark
- 4.19 Sterile filter 0.2 µm, Cat No.11107 47 N, Sartorius, Germany

#### **5. Chemical and reagents**

- 5.1 Alcohol 70%, Cat No.IA807/39, Coholsahakarn, Thailand
- 5.2 Ascorbic Acid 100 gm, Cat No.A4544, Sigma, Germany
- 5.3 Celecoxib, Celebrex, Pfizer, USA
- 5.4 CellTiter 96® Non-radioactive Cell Proliferation Assay, Cat No.G4000, Promega, USA

- 5.5 Dimethylsulfoxide (DMSO), Cat No.103234L, Analar®, BDH Laboratory supplies, England
- 5.6 Dulbecco's Phosphate buffer saline, Cat No.21600-051, Gibco, USA.
- 5.7 Ethanol Absolute for Analysis 500 ml, Cat No.E7023, Sigma, Germany
- 5.8 Fetal bovine serum, Cat No.L152, Biochrome AG, Germany
- 5.9 Fungizone, Amphotericin B, Cat No.15290-018, Gibco, USA
- 5.10 Hydrochloric Acid in 100 ml, Cat No.H9892, Sigma, Germany
- 5.11 Indomethacin, Cat No. I8280, Sigma, Germany
- 5.12 Minimum Essential Medium Alpha Medium, Cat No.11900-016, Gibco, USA.
- 5.13 Mouse osteocalcin EIA kit, Cat No.BT-470, Biomedical Technologies Inc., USA
- 5.14 Neutral Red Solution 50 ml, Cat No.N6264, Sigma, Germany
- 5.15 Penicillin/Streptomycin, Cat No.A2213, Biochrom AG, Germany
- 5.16 P-Nitrophenol standard solution 100ml, Cat No.N7660 , Sigma diagnostics®, USA
- 5.17 P-Nitrophenyl phosphate disodium salt, Cat No.4876, Calbiochem®, Germany
- 5.18 Prostaglandin E<sub>2</sub> high sensitivity Immunoassay, Cat No.DE2100, R&D system, Inc., USA
- 5.19 Protein standard II (Bovine Serum Albumin), Cat No.500-0007, Bio-Rad, USA
- 5.20 RC DC protein assay kit II, Cat No.500-0122, Bio-Rad, USA
- 5.21 Sodium bicarbonate dry substance, Cat No.L1703, Biochrom AG, Germany
- 5.22 Triton X-100, Cat No. T8787, Sigma, Germany
- 5.23 Trypsin/EDTA (0.5%/0.2%) in (10x) PBS without Ca<sup>2+</sup>, Mg<sup>2+</sup>, Cat No. L2153, Biochrom AG, Germany

## 6. Softwares

- 6.1 SPSS for windows, Version 11.0, Standard Software Package Inc., USA
- 6.2 Statview for windows, version 4.5, SAS Institute Inc., USA