

Before going any further, We must first declare :

Although the performance of ceramic materials can be expected to be beneficial to the body, we still do not want the ceramic material to be intended to diagnose, treat, cure or prevent any disease. It will be against the law and be fined when advertising on this claim .

研究報告源自 : 台北醫學大學梁庭繼醫師研究資料

Data quoted from : Ting-Kai Leung. MD ,Bio-energy laboratory ,Taipei Medical University Hospital

經由醫學大學醫生；Taipei Medical University Hospital, doctor.
(人體臨床實驗； Human clinical trials)

(1)遠紅外線可以促進酵素的生成，使 H_2O_2 下降，減少自由基的產生

(1) Far infrared ray (**FIR**) can promote the formation of enzymes in order that the H_2O_2 can be decreased to reduce the production of free radicals.

(2)眼罩；使黑眼圈消失

(2) Goggles ; make dark circles disappear

(3)降低血壓

(3) Lower blood pressure

(4)減緩老年癡呆

(4) Alzheimer's condition improved

(5)延遲動脈硬化

(5) Arteriosclerosis improved

(6)促發攜鈣蛋白，以利調整細胞內鈣離子濃度

(6) Promoting the formation of Calmodulin in order for better adjusting the concentration of Ca^{+} -ion in cells

(7)色素癌細胞之抑制效果明顯

(7) A clear inhibitory effect on cancer

(8)促進Calmodulin的活化生成，產生蛋白質

(8) Promoting the formation of Calmodulin in order to produce protein

(9)提高Osteoblast cell量，降低骨質疏鬆

(9) Enhancing the amount of Osteoblast cell in order to reduce osteoporosis

(10) 減緩類風溼關節炎

(10) Rheumatoid arthritis's condition improved

(11)屬於物理治療，取代口服

(11) Belonging to Physiotherapy, instead of oral

(12) Water Memory (水發放能量)

Medical research through the five steps :

Phase 1 : The safety of used material

Phase 2 : Biochemical blood test (blood tests)

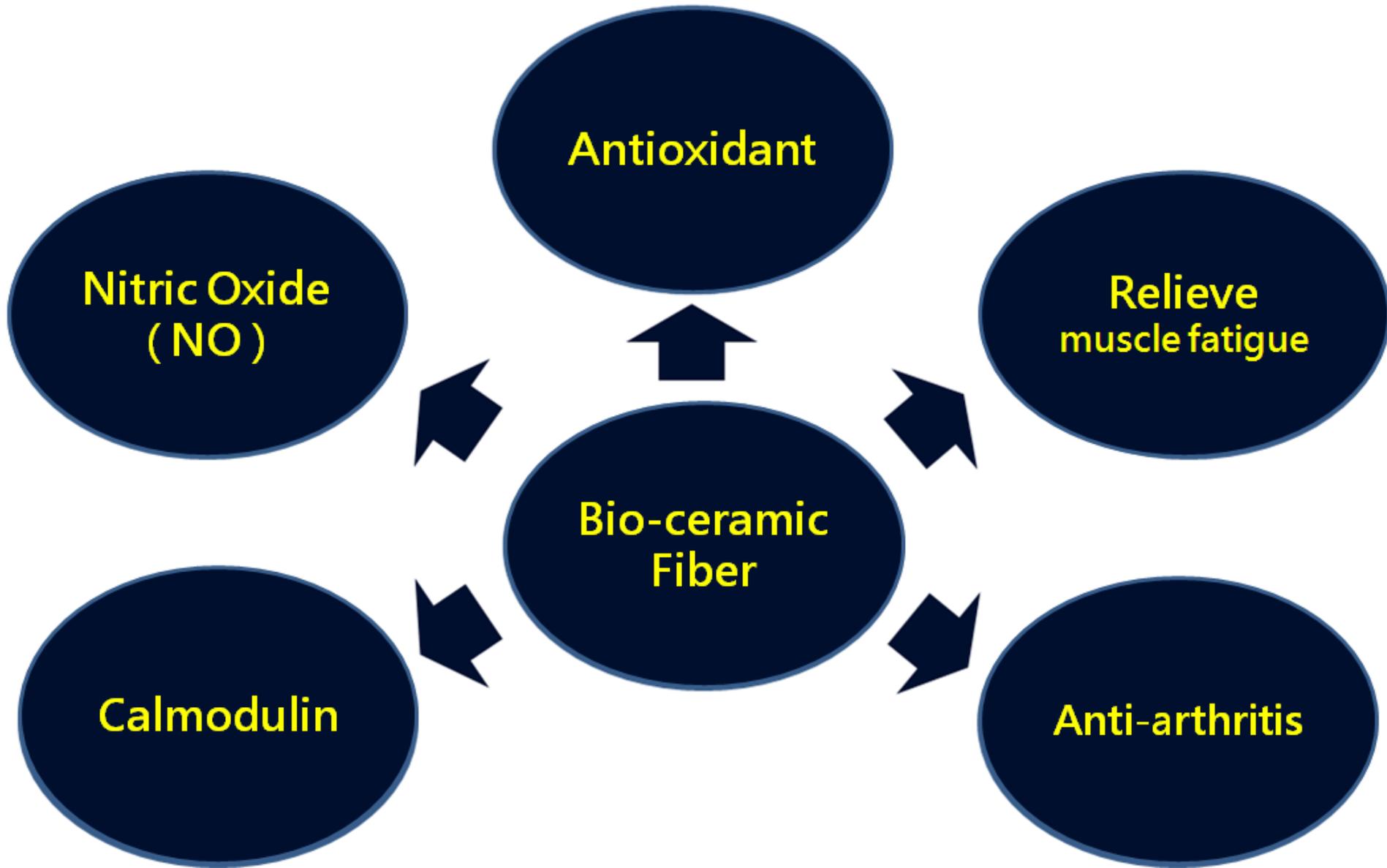
Phase 3 : Cell experiments

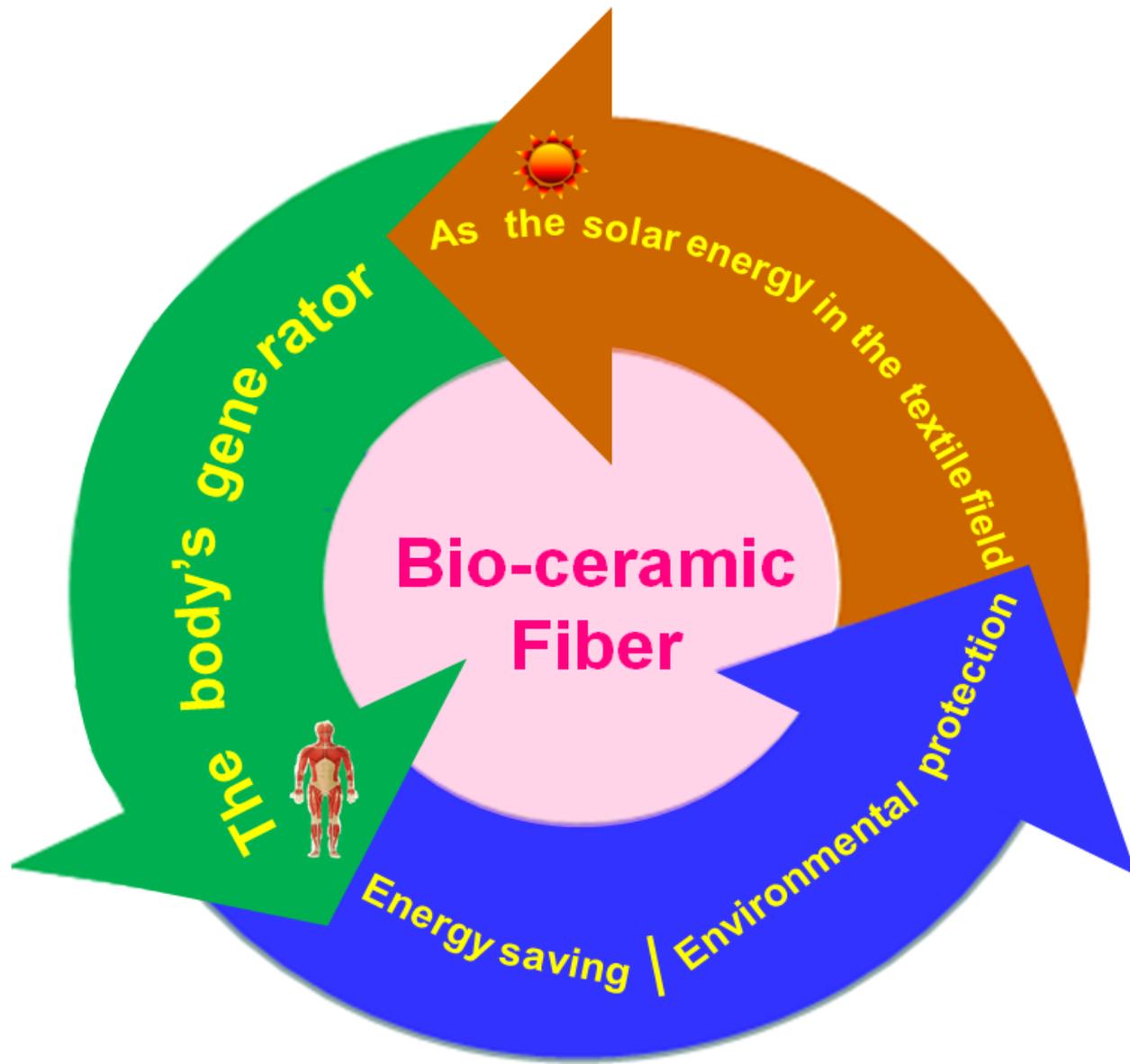
Phase 4 : Animal experiments

Phase 5 : Human experiments

In general, the related tests made by others were just into Phase 2 : **Biochemical blood test (blood tests)**

Five Major Achievements of Bio-ceramic Material





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 - 2.6 The energy intensity of emitted radiation (by bio-material) close to the body's energy intensity by their own (不含重金屬 ; Bio-material does not contain heavy metals)
3. Mechanism of bio-energy
 - 3.1 Memory effect of water
 - 3.1.1 How to prove the phenomenon " water memory" and its effect ? Sorghum liquor (Taiwan Kaoliang wine) can be used for the test
 - 3.1.2 Memory effect of blood
 - 3.2 Restore muscle fatigue
 - 3.2.1 pH changes after fatigue by electro-stimulated isometric contractions
 - 3.2.2 Increasing muscular endurance and promoting recovery from fatigue after exercise
 - 3.3 Activation of cellular function (Say "no" to chronic diseases ! Nitric Oxide (NO) plays the leading role) Cells : "NO" fluorescent dye
 - 3.3.1 The applications
 - 3.4 Activation of cellular function (Calmodulin has important biological functions)
 - 3.5 Removal of free radicals (the main cause of human aging) ; Other relevant literatures
 - 3.6 bio-energy has anti-inflammatory effects by the rabbit experiments

4. Bio-energy (Bio-ceramic) helps health

4.1 Micro-circulation mechanism

4.1.1 Promoting blood circulation and increasing body temperature
(Suitable for: long-term bedridden patients or those with diabetes)

4.1.2 Difficulties in wound healing for diabetic patients

4.1.3 A new target for treatment of diabetes : GAPDH
[cFIR can stimulate the production of GAPDH (Enzyme)]

4.2 Prevention of Myocardial Ischemia

4.3 License Book - The plan of implementation of human laboratory studies.

4.4 Rebuilding the immune system after chemotherapy

5. What areas the bio-energy material can be applied in ?

6. Websites related to bio-energy

7. The specifications of Bio-energy yarns ?

1. An introduction to Ting-Kai Leung, MD

1.1 Trademark has been approved in Taiwan

1.2 published Patents and journals

1.2.1 Efforts of the paper catalog



Bio-Energy Laboratory
Radiology Department,
Taipei Medical University



梁庭繼醫師
科別：放射診斷科
職稱：主治醫師



“Far infrared ray irradiation induces intracellular generation of nitric oxide in breast cancer cells,”

生物能(cFIR)對巨噬細胞內產生攜鈣蛋白(calmodulin)之影響

生物能(cFIR)作抗氧化(清除過氧化物)之影響
相關論文著作超過30篇

簡介：

臺北醫學大學附設醫院放射診斷科成立迄今已有近30年之歷史，我們不斷創新服務著信義區及大台北民眾，並善盡支援臨床醫療職責。主要的工作內容為一般放射診斷及多項介入性放射線治療。一般放射診斷包括傳統X光片診斷、X光透視診斷、電腦斷層掃描、磁共振攝影等。介入性檢查與治療包括乳房數位化立體定位儀作乳房病灶的定位及生檢，電腦斷層攝影引導下作組織生檢，肝癌腫瘤血管、動靜脈畸型、腸胃道出血等栓塞術，肝膽管引流術及膽管擴張術。

1.1 Trademark has been approved in Taiwan

BIOCERAMIC

健康新紀元

◎ 梁庭繼 醫師 著

生物能陶瓷材料

BIOCERAMIC Material

新版



科學數據會說話！別懷疑，就是這樣神奇，藉由「生物能陶瓷材料」，改變生活一些物質，同時已超越遠紅外線材料作用，這就是「生物能陶瓷材料」。該材料係經由實驗室以多項嚴謹實驗來證明其效果，從效果上、應用的方便性上，都可以稱得上為第一支名副其實具有生物功能的材料，這也是國內第一個利用嚴謹實驗研究，讓科學數據說話的生物能材料。



作者感謝

Author's thanks

本書目的是分享相關研究心得，以敬畏和謙卑的態度，期盼能揭開更多科學奧秘和引起同好學者的注意。本書能以新版順利發行，應該感謝的人太多，特別是父親梁仲厚(福巨)和母親梁錦屏(施燕)，在此致意於遠比我可敬佩的以下各研究人員、醫師、教授、博士、專家等，感謝幫忙指導和資料提供，順序不分先後，包括李志明、林永昇、林義民、施純明、劉得任、喬惠芳、李怡萱、蔡世晉、蘇慶華、陳彥州、何元順、陳建中、歐耿良、楊正昌、楊淑惠、施純光、洪國盛、邱文達、楊致行、曲立全、葛之剛、周曉珊、黃慶成、張光偉、徐基生、黃惠雯、徐煥謙、劉順宗、高建薰、黃敏勇、郭家驊、趙若水、林章賢、蔡定平、胡一君、張漢劄、黃琮通、蕭勝謙、林明瑜、盧彥蓓、蕭東莞、黃群耀、林永和、陳祥和等等，實在無法一一題舉。

另外，再向對本書大力支持幫忙的以下友人感謝，包括陳立恆先生、平總編輯、宋權煥先生、陳前芳先生、黃正垣博士、顏豐明先生、林香如小姐、張世傑先生、邱立堅先生、陳振乾先生、陳世傑博士、戴子欽博士、黃天福先生、游聰益先生、Candy蔡、卓廷彬先生、孫宇恆先生、Diana Candy湯 等等，在下萬分感激您們的付出與貢獻。

Michael Huang (Hua Mao)

梁庭繼(旭庭) 致意

Author's Name: Dr. Stephen Ting-Kai Leung, MD



Born in 1968

Specialist Divisions: Radiologist

Education: Faculty of Medicine, Taipei Medical University.

Experience: Internal Medicine Resident, Radiological Resident and Attendant.

Lecturer in 'medical physics' and 'clinical radiology' for Faculty of Medicine in Taipei Medical University

Moderator of bioceramic material research project and in-charge for Bio-energy laboratory in Taipei Medical University

Related experience:

Resident of internal medicine

Radiology physician

Taipei Medical University, Faculty of Medicine, "Medical Physics" and "radiology medical imaging," teachers(with Faculty of Education approval)

Quality Assurance Committee of National Health Authority Breast Screening in Taiwan

One of the founders of Homeopathy Development Association in Taiwan

Now serving as attendant in Radiology Department of Taipei Medical University Hospital

Reference Expertise:

1. Cardiovascular diagnostic imaging (MDCT, cardiac MRI)
- 2.. Breast cancer diagnostic imaging (mammography, breast MRI)
3. Bio-energy Research(biomaterial development, cellular, animal and human test).

Related Publications:

Authors of the China Times newspaper column - (Kyorin fax) and (Hua Tuo fax) Contributing Writer:

One of the authors of health book: "How to eat healthy and Beauty" Domestic and foreign medical journals original papers, papers and medical records of dozens of seminar papers Academic publications in over half hundred in numbers, include journal articles, case reports and Conference papers.

BIOCERAMIC Material

Radiologist and physician, Dr. Stephen, Ting-Kai Leung of Medical Imaging(Radiology) Center of Taipei Medical University Hospital, who spent over ten years to study the relationship between water and life-energy materials. This is a research and development on the topic of bio-energy, is safe and beneficial to human body.



by Dr. Stephen Ting-Kai Leung, M.D.

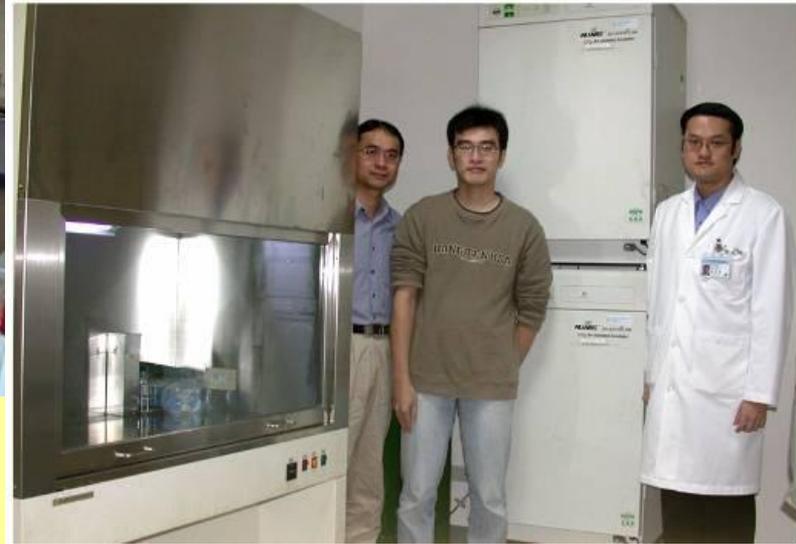
ISBN 957-28706-0-2



suggested price \$25.00

Team group-

Ting-Kai Leung. MD ,Bio-energy laboratory ,Taipei Medical University Hospital



1.2 published Patents and journals

Bronze Medal

2010 海峽兩岸中醫藥合作發展論壇

2010 Cross-strait Forum on Co-operation and Development of Traditional Chinese Medicine

Science

Presented to

Yung-Sheng Lin(林永昇) **Ting-Kai Leung(梁庭繼)**
Yen-Chou Chen(陳彥州), Huey-Fang Shang(商惠芳)

For the Display of

Effects of Ceramic Far Infrared Radiation on Murine Macrophage

AT

September 25-26, 2010
Kaohsiung, Taiwan

大會主席

傅勝利

Chairperson



1.2 Patents : 1~6 ; Patents pending 7~10 (in Taiwan)

| | | |
|----|--------------------------|--------------------------------------------------------------------------------------------------------------|
| 1 | 中華民國專利M321771 | 遠紅外線固定裝置 (Fixture of FIR) |
| 2 | 中華民國專利M317859 | 遠紅外線包 (Package emitting FIR) |
| 3 | 中華民國專利M329445 | 可加熱式遠紅外線裝置 (Heating device emitting FIR) |
| 4 | 中華民國專利M335274 | 遠紅外線保險套 (Infrared condoms) |
| 5 | 中華民國專利M337472 | 遠紅外線元件 (Infrared devices) |
| 6 | 中華民國專利I327475 | 一種美白方法 (Composition for Skin Care and Method for the Same) |
| 7 | 中華民國專利審查中 (#96107951) | 遠紅外線基材的製成方法 (Manufacturing method of far infrared-based substrate) |
| 8 | 中華民國專利審查中 (#96109014) | 增加細胞內一氧化氮之組合物及其方法 (Composition for increasing intracellular Nitric Oxide and method for the same) |
| 9 | 中華民國專利審查中 (#96121436) | 增加溶劑中植物之有效成分含量的方法 (Method for increasing an amount of effective constituents from a plant in a solvent) |
| 10 | 中華民國專利審查中 (#96121948) | 用於美白的遠紅外線基材 (FIR-based materials used for Skin Care) |

Patents pending 11~17 (in Taiwan) ; Patent : 18 (in China)

| | | |
|----|------------------------------------------------------------|---------------------------------------------------------------------------------|
| 11 | 中華民國專利審查中 (#96129302) | 多孔性敷料 (Porous dressing) |
| 12 | 中華民國專利審查中 (#96129302) | 複合層敷料 (Composite dressing) |
| 13 | 中華民國專利審查中 (#96140638) | 用於控制血糖之組合物及方法 (Composition for controlling blood glucose and method thereof ?) |
| 14 | 中華民國專利審查中 (#96138079) | 製備遠紅外線基材的方法 (Manufacturing method for a Far-Infrared Substrate) |
| 15 | 中華民國專利申請中 | 用於提升攜鈣蛋白之組合物 (Composition for promoting calmodulin) |
| 16 | 中華民國專利申請中 | 一種增加溶液揮發效率之組合物 (Composition for enhancing evaporation of solution) |
| 17 | 中華民國專利申請中 | 用於增加過氧化氫分解之組合物 (A composition for decomposing H ₂ O ₂) |
| 18 | 中華人民共和國專利證書號第1048886號 | 一種光波能量膠管 (A hose with light energy) |
| 19 | US patent pending. (PCT/US07/12977) (WO/2008/147365) | Composition for Increasing Intracellular Nitric Oxide and Method for the Same |

Patents pending 21~27 (in Taiwan) ; Patent : 20 (in Germany)

| | | |
|----|----------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|
| 20 | Germany patent. pending. (DE 10 2007 046 799.2) | Composition for Skin Care and Method for the Same |
| 21 | US patent pending. (11/857,158) | Composition for Skin Care and Method for the Same |
| 22 | US patent pending. (11/856,981)IPC8Class AC07B6300FIUSPC Class:20415821 | Method for Increasing an Amount of Effective Constituents from a Plant in a Solvent |
| 23 | US patent pending. (11/969,425) | Manufacturing Method for a Far-Infrared Substrate |
| 24 | US patent pending. (11/926,575) | Porous Dressing |
| 25 | US patent pending. (12/001,291) | Composite Dressing |
| 26 | US patent pending. (12/028,044) | Composition for controlling blood glucose and method thereof |
| 27 | US patent pending. (12/035,680) | Manufacturing Method for Far-Infrared Radiating Substrate |
| 28 | status of patent application | Composition for promoting calmodulin |
| 29 | status of patent application | Composition for enhancing evaporation of solution |
| 30 | status of patent application | A composition for decomposing hydrogen peroxide (H ₂ O ₂) |

1.2 Published in the journals

1. Yung-Sheng Lin, Ming-Yu Lin, **Ting-Kai Leung**, Chi-Hung Liao, Tsung-Taio Huang, Hui-Shun-Huang, Han-Chang Pan
" Properties and Biological Effect of High Performance Ceramic Powder Emitting Far-Infrared Irradiation"
Instruments Today 2007.6(158), 28: 6, 60-6
2. **T. K. Leung**, C. M. Lee, M. Y. Lin, Y. S. Ho, C. S. Chen, C. H. Wu and Y. S. Lin,
" Far infrared ray irradiation induces intracellular generation of nitric oxide in breast cancer cells," J. Med. Biol. Eng., 29(1):15-18, 2009. (SCIE,EI)
3. **T. K. Leung**, Y. S. Lin, Y. C. Chen, H. F. Shang, Y. H. Lee, C. H. Su, H. C. Liao,
" Immunomodulatory effects of far infrared ray irradiation via increasing calmodulin and nitric oxide production in RAW 264.7 macrophages, "
Biomed. Eng Appl. Basis. Comm., Vol 21, No.4(2009), 1-7. (SCIE,EI)
4. **Ting-Kai Leung**, Chi-Ming Lee, Shin-Yin Tsai, Yi-Chien Chen, Jo-Shui Chao,
" A pilot study of ceramic powder far-infrared ray irradiation (cFIR) on physiology : observations of cell cultures, amphibian skeletal muscles, and human athletic performance."
Informed by Editor in Chief that this article can be accepted for publication in CHINESE JOURNAL OF PHYSIOLOGY (CJP).

1.2 Referring to those journals and seminars (conferences) in which cFIR-related researches have been published.

5. **Ting-Kai Leung**, Chih-Pong Chang, Chi-Ming Lee, Li-Kuo Shen
"Retrospective study the total insertion period of peripherally inserted central catheter: discussion of anti-thrombogenic surface and other biomaterial requirements." Bio Medical Materials and Engineering 16(3): 183-188 (2006).(SCI)
6. **T. K. Leung** et al,
"Magnetic resonance venography (MRV) evaluating veins flow for legs by application of long stretch elastic bandage."
Informed by Editor in Chief that this article can be accepted for publication in "International Angiology". **June 17th 2010**
7. **Ting-Kai Leung**, Yung-Sheng Lin, Chi-Ming Lee, Yen-Chou Chen, Huey-Fang Shang, Shenf-Yi Hsiao, Hsuan-Tang Chang, Jo-Shui Chao,
"Direct and Indirect Effects of Ceramic Far Infrared Radiation on the Hydrogen Peroxide-Scavenging Capacity and on Murine Macrophages Under Oxidative Stress"
It will be accepted for publication in Journal of Medical and Biological Engineering (JMBE) if the reviewers' comments can be responded.
8. T. T. Huang, M. Lin, Y. Lin and **T. Leung**,
"Suppressive Effect Of Far-Infrared Ray on The Melanogenesis"
BMES 2007(conference), P.156.

1.2 Referring to those journals and seminars (conferences) in which cFIR-related researches have been published.

9. "Effects of Far-Infrared Ray-Treated Water on Germination of Seeds."

梁庭繼 (**Ting-Kai Leung**)、林永昇、張楷弦、廖啟宏

2008年第十一屆工程科技與中西醫藥應用研討會所發表 (Eleventh Symposium on the Application of Engineering Science, Chinese and Western Medicine; 2008)

1.2.1 Efforts of the paper catalog

Direct and Indirect Effects of Far Infrared Rays on Hydrogen Peroxide-Scavenging Capacity
Ting-Kai Leung, Huey-Fang Shang, Dai-Chian Chen, Hsuan-Tang Chang, Jia-Yu Chen, Yung-Sheng Lin
(subm)

Effects of Somatothermal Far-Infrared Irradiation on Murine Melanoma Cell Growth,
Melanin Content, Tyrosinase Activity and Intracellular Nitric Oxide Production
Ting-Kai Leung, Yen-Pei Lu, Tsung-Tao Huang, Ming-Yu Lin, Yung-Sheng Lin(subm)

Short- and long-term observations of different physiological parameters after
Ceramic powder of far-infrared ray irradiation of cells and animal tissues
Ting Kai Leung , Yung-Sheng Lin . ,Tak-Wah Wong .(Submitting)

Elevation of sorghum liquor volatility by room temperature far infrared ray(FIR)
emitting material and FIR irradiated water.
T-K Leung,Y-S Lin, C.M. Lee .(Submitted)

Effects of Far-infrared Irradiation on Water for Extracting Green Tea Leaves
Yung-Sheng Lin, Ming-Yu Lin, Ting-Kai Leung*, Hsien-Yi Hsiao(submitted)

Far infrared ray irradiated from a ceramic source in room temperature (cFIR)
effectively scavenging hydrogen peroxide in RAW 264.7 and increase cell viability
T. K. Leung, , Y. C. Chen, Y. S. Lin, H. F. Shang, Y. H. Lee, C.M.Lee(submitting)

Far infrared ray irradiated from a ceramic source in room temperature (cFIR)
effectively scavenging hydrogen peroxide in murine fibroblast cell(NIH 3T3)and the mechanism.
T. K. Leung, Y. C. Chen, Y. S. Lin, H. F. Shang, Y. H. Lee, C.M.Lee(submitting)

1.2.1 Efforts of the paper catalog

Biological effects of bio-ceramic fiber made necklace/collar on neck and in vitro cells study for prostaglandin E2(PGE2)

Ting Kai Leung et al. (submitting)

Biological effect of ceramic powder emitting far infrared ray(cFIR)on microcirculation and metabolism

Ting Kai Leung et al. (submitting)

Evidence of biomolecular induction of cells and a new experimental design to prove the effective function of health-promoting fabrics

Ting Kai Leung et al.(revision)

Possible benefits of far-infrared ray emitting ceramic material (cFIR) for inflammatory arthritis and bone health maintenance

Ting Kai Leung et al.(revision)

2. The safety of bio-energy (ceramic powder) material

2.1 What is Bio-ceramic material ? (SGS toxicity test : Qualified)

2.2 Non-ionizing radiation (不含游離輻射)

2.3 Evaluation of skin irritation by Klogman system (過敏性試驗)

2.4 Animal experiments (動物實驗)

2.5 Cell safety test (細胞安全性測試)

2.6 The energy intensity of emitted radiation (by bio-material)
close to the body's energy intensity by their own
(不含重金屬 ; Bio-material does not contain heavy metals)

2.1 What is Bio-ceramic material ?

From the broad definition of material science, Bio-ceramic material is a ceramic powder material. Its main property is being able to emit high and saturated wavelength of **far infrared ray**. The most important thing is that the material does not need to be maintained by a heat source from an energy supply, so in effect, **it is an environmentally protective material**.

Bio-ceramic material is composed of pure, natural elements found in ocean water. The elements are not toxic and each chemical or component can be found in the pharmacopoeia of western medicine. **The material is so safe that one could even ingest it into the body.**

2.2 Non-ionizing radiation (不含游離輻射)

Meeting the standard that was issued by Atomic Energy Council (2007.01.05)
 : 『 Release of radioactive material derived from natural waste 』

| 核種 (Nuclear species) | 活度濃度基準值 (standard ; baker/kg)(貝克/公斤) |
|---------------------------------|--------------------------------------|
| 鉀(K)-40 | 10000 |
| 釷(Thorium series)系列核種 | 1000 |
| 鈾(Uranium series)系列核種 | 1000 |
| 其他非鉀或釷、鈾系列天然放射性核種(Other series) | 1000 |

| Powder samples | 重量 weight | 核種活度(baker/kg±%) | | |
|----------------|--------------|------------------|--------|--------|
| | | 鉀(K)-40 | 釷(Th)系 | 鈾(Ur)系 |
| Ceramic powder | 1.0 | 16±9 | - | - |

2.3 Evaluation of skin irritation by Klogman system (過敏性試驗)

Test results are low level of allergy

Evaluation of skin irritation by Klogman system

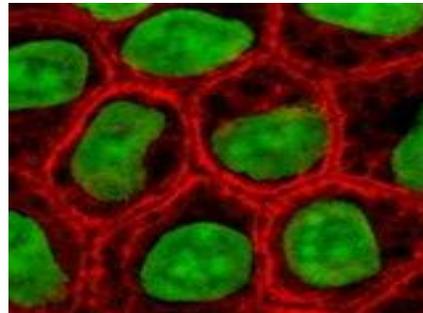
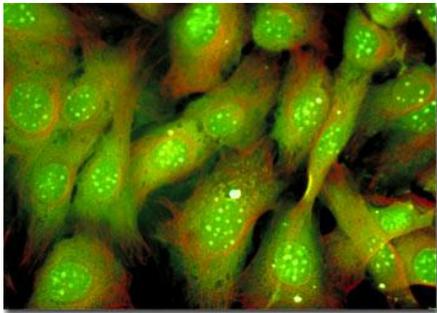
| Sensitization Rate (%) | Grade Scale | Class |
|------------------------|-------------|----------|
| 0 ~ 8 | 1 | Weak |
| 9 ~ 28 | 2 | Mild |
| 29 ~ 64 | 3 | Moderate |
| 65 ~ 80 | 4 | Strong |
| 81 ~ 100 | 5 | Extreme |

2.4 Animal experiments (動物實驗)

The mice are under cover of high performance infrared material and kept for 12 months. The mice are still in healthy growth.

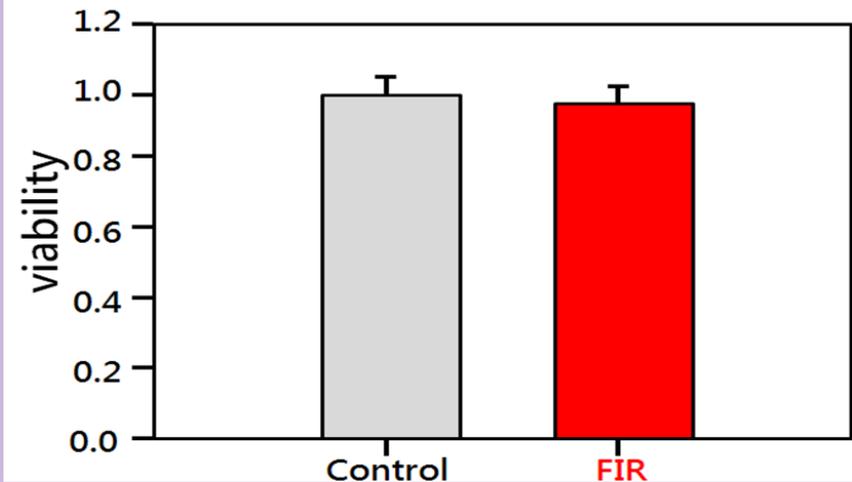


2.5 Cell safety test (細胞安全性測試)

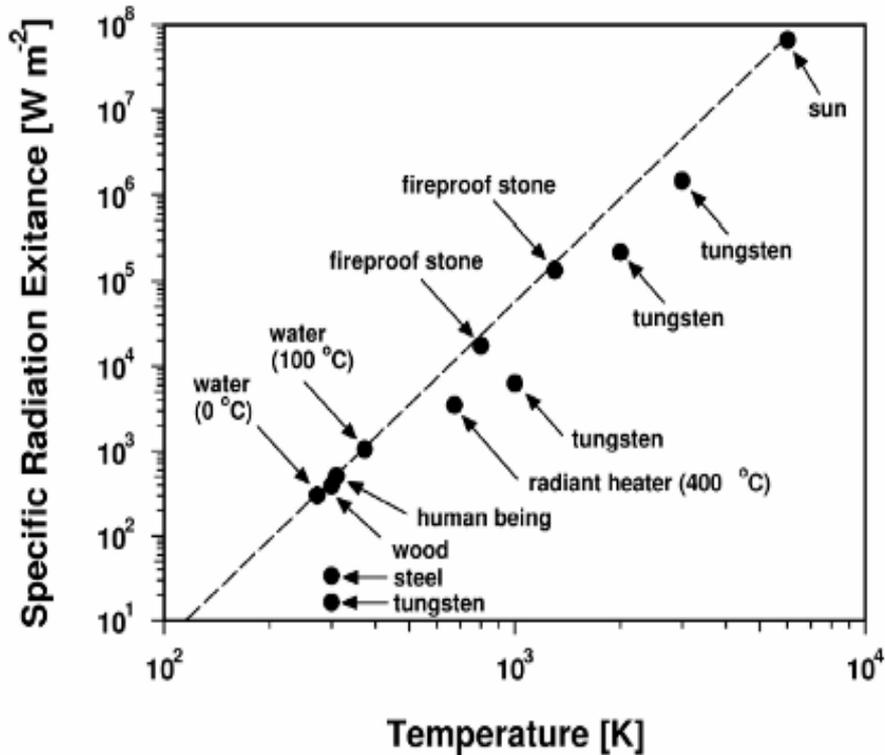


RAW 264.7 cells were cultured under normal environment (Control group) or FIR-environment (FIR group) for 24 hours. Cell viability was analyzed with MTT method. The result showed that the proliferation activity of RAW 264.7 cells were similar.

In vitro Preliminary Study Cell viability test



2.6 The energy intensity of emitted radiation (by bio-material) close to the body's energy intensity by their own (Bio-material does not contain heavy metals)



- ▶ Emissivity of FIR powders = 0.98
- ▶ Emissivity of human being = 0.97 ~ 0.98

Date derived from [Healthy Physics 91(6): 630-645,]

3. Mechanism of bio-energy

3.1 Memory effect of water

3.1.1 How to prove the phenomenon " water memory" and its effect ?

Sorghum liquor (Taiwan Kaoliang wine) can be used for the test

3.1.2 Memory effect of blood

3.2 Restore muscle fatigue

3.2.1 pH changes after fatigue by electro-stimulated isometric contractions

3.2.2 Increasing muscular endurance and promoting recovery from fatigue after exercise

3.3 Activation of cellular function (Say "no" to chronic diseases ! Nitric Oxide (NO) plays the leading role) ; Cells : "NO" fluorescent dye

3.3.1 The applications

(**Robert Furchgott shared a Nobel prize in 1998** for showing nitric oxide played an important role in the cardiovascular system.)

3.4 Activation of cellular function (**Calmodulin has important biological functions**)

3.5 Removal of free radicals (the main cause of human aging) (**Other relevant literatures**)

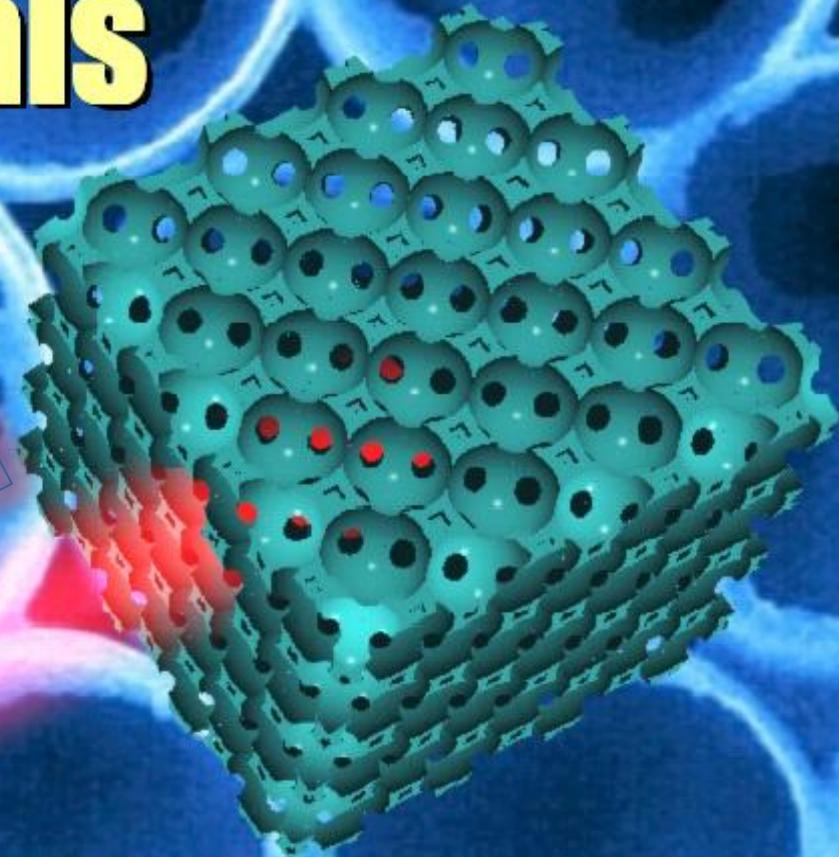
3.6 Bio-energy has anti-inflammatory effects by the rabbit experiments

3.7 The experimental for rats eating

How bio-ceramic materials (**photonic crystals**) are applied in the use of textile fields ?

Photonic Band Gap Materials

1. To prevent the smell
2. Fabrics Warming
(Exothermic type by moisture)
3. Fabric Cooling
4. Health effects on the human body



3.1 Memory effect of water

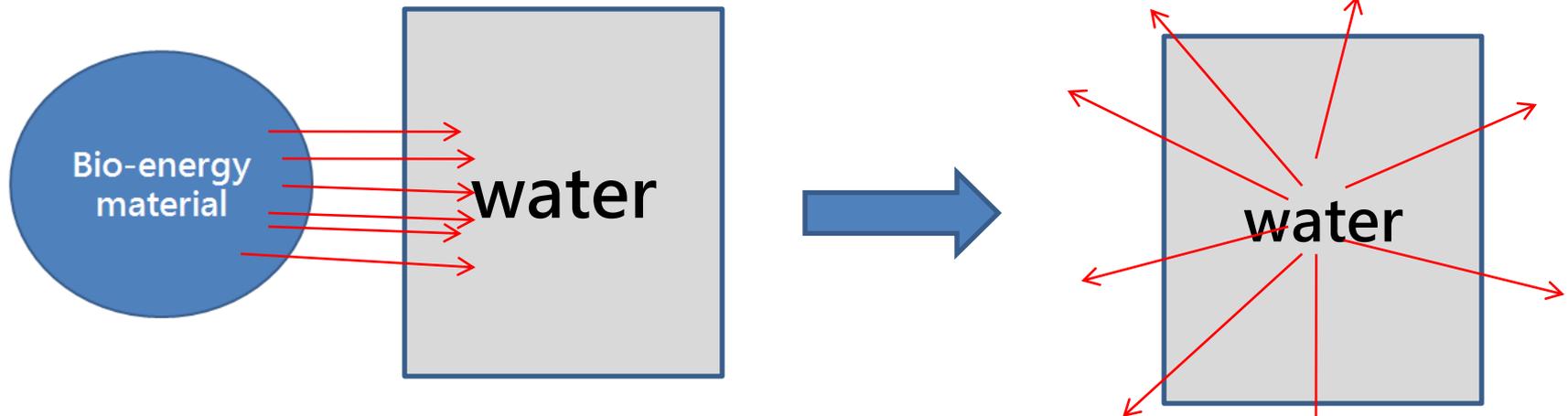
When water-soluble molecules were excited by some kind of signal, the molecules will follow the characteristics of the signal. Besides the Phenomenon, the water molecules also can rapidly deliver the signal and pass it on to other water molecules, and soon all the water has the same features. This excitation process and the related results have been interpreted unofficially as "water memory." This similar phenomenon was ever published in the world's top journal "Nature " (Nature, [1988] vol 333, June 30, p186-188)

Therefore, the energy radiation emitted through the bio-ceramic materials, the water is excited and remembers the characteristics of bio-energy (bio-energy memory of water). That is to say, the water can emit energy radiation. It can help the whole body when the water drunk into the body. The water energy released to make the human cells absorb the energy of water and the intracellular water has become the energy water.

The aging of the cells can be expected to be activated and enhance the metabolism, help remove harmful substances accumulated inside the body, and strengthen the body's immune ability to restructure and healing. The phenomenon was ever published in "Biomedical Engineering Annual Meeting, ROC 2006, located and held at National Taiwan University ."

3.1 Memory effect of water

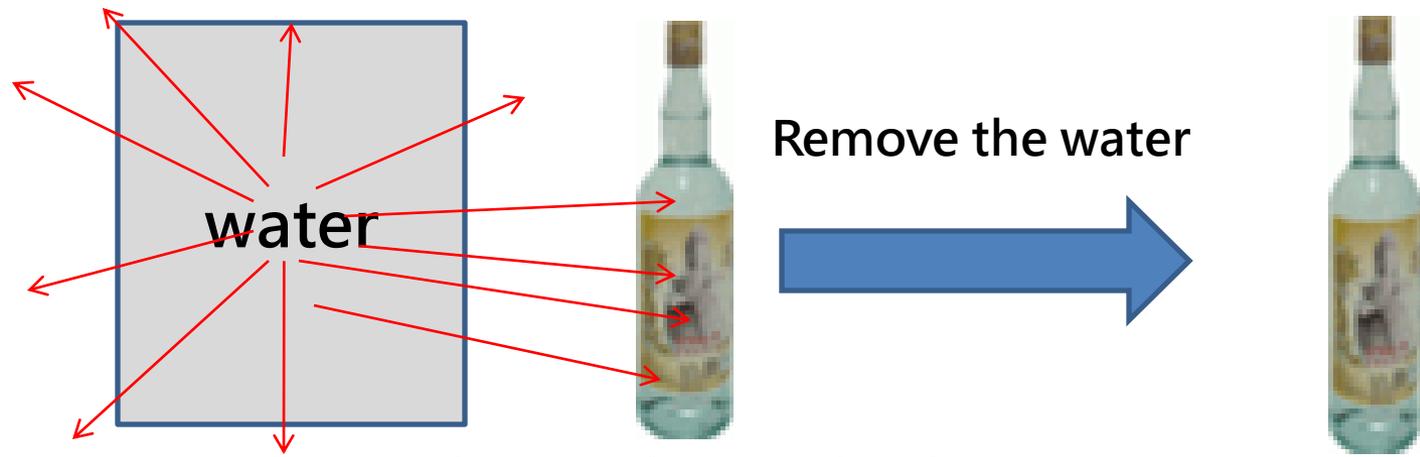
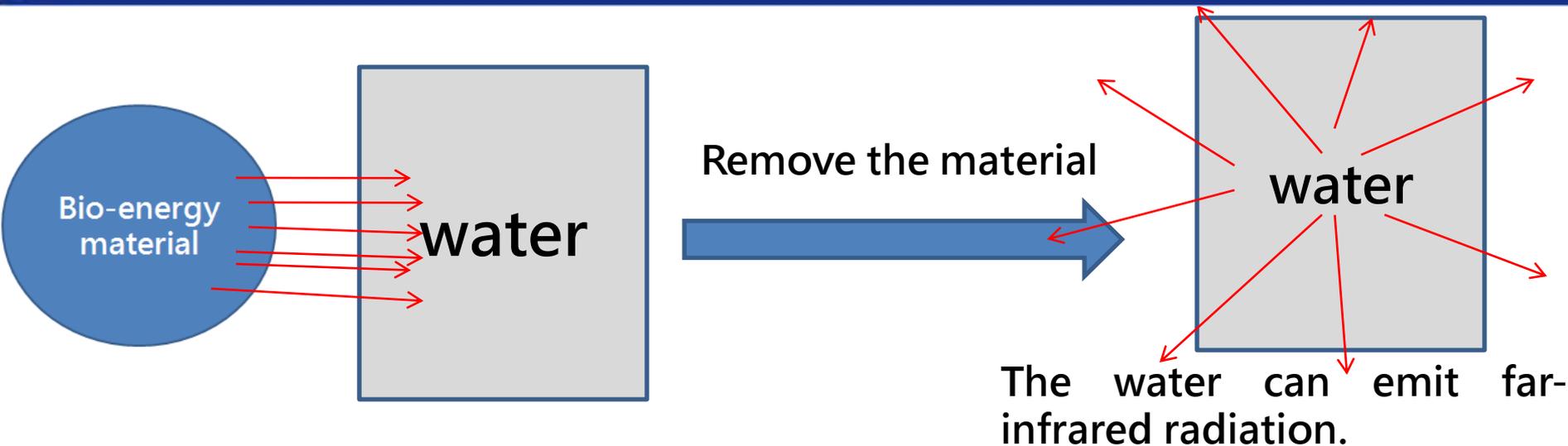
Bio-energy ceramic material has a characteristic, that is to say, it can emit far-infrared radiation and make the water be excited in order that the water itself has the same characteristics like the bio-energy ceramic material, the water can emit far-infrared radiation.



Bio-energy ceramic material can emit the far-infrared radiation and make the water be excited

The water can emit far-infrared radiation.

3.1.1 How to prove the phenomenon "water memory" and its effect ? Sorghum liquor (Taiwan Kaoliang wine) can be used for the test

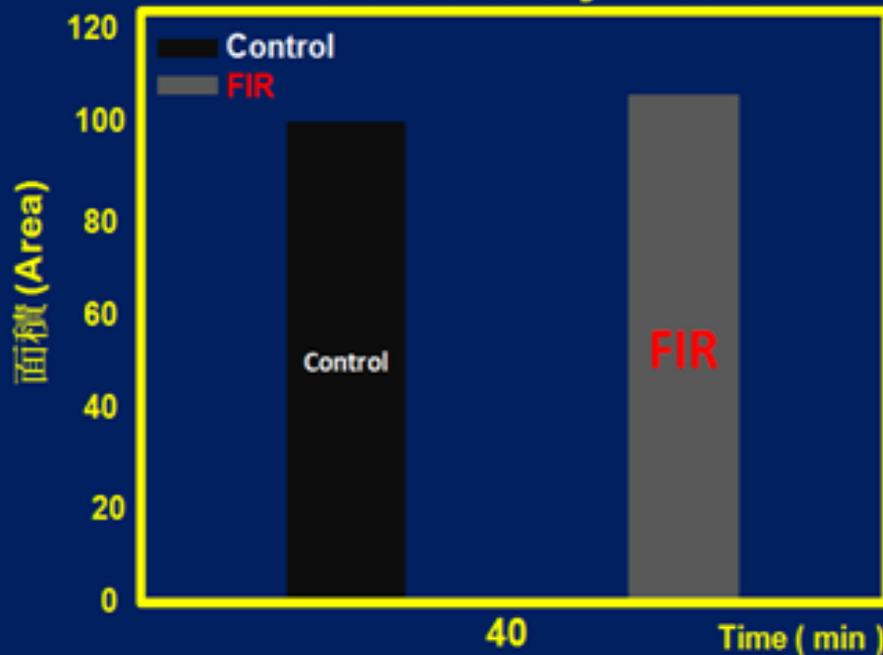


This caused a change in the wine making it take on the properties of a more aged and finer sorghum wine. (Because the radiation energy generated by water excitation to make the **aldehydes** inside the wine be changed by chemical reaction **into alcohol**.)

1%網布在水記憶現象之結果與統計意義

What is the result and its statistical significance of the phenomenon of water memory caused by FIR-1%-based Fabric

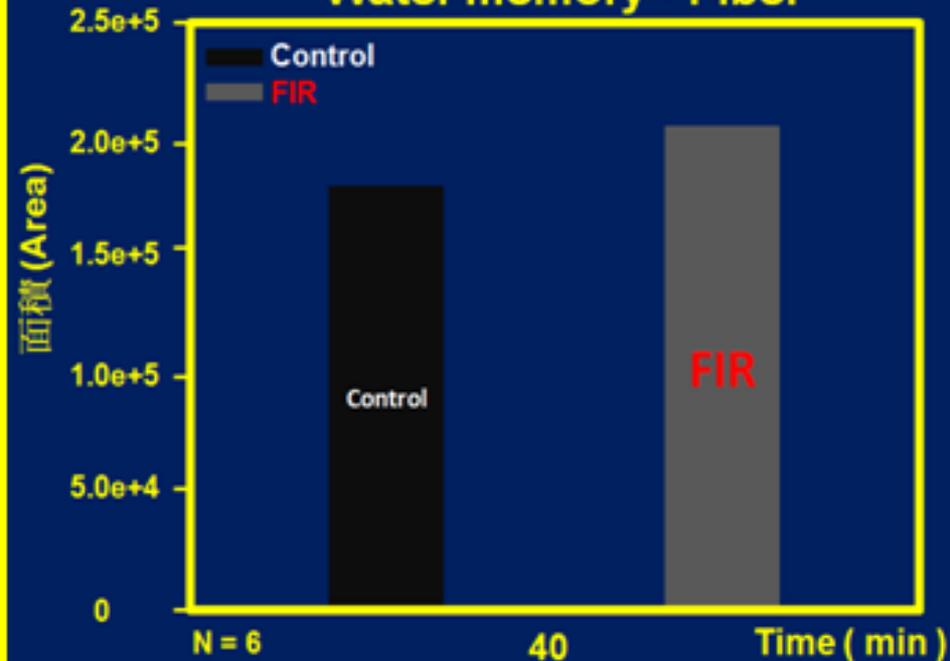
水記憶效應 — 纖維
Water memory - Fiber



P value = 0.012637 (<0.05) (~0.01)

N = 5

水記憶效應 — 纖維
Water memory - Fiber



N = 6

40

Time (min)

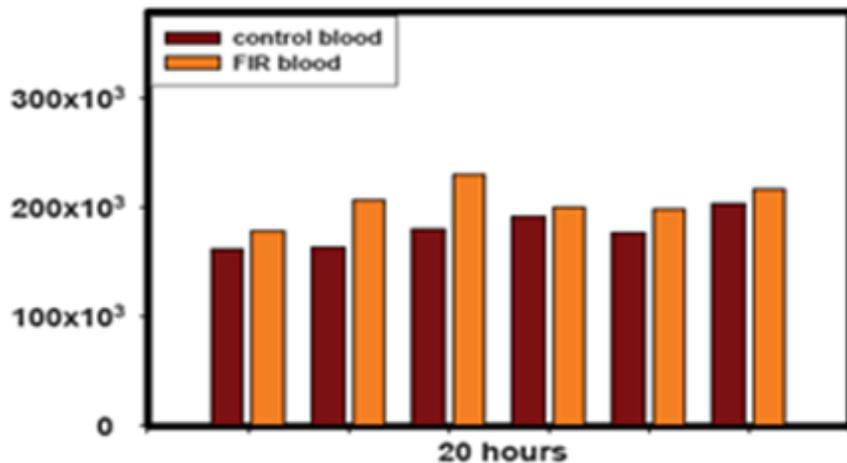
3.1.2 Memory effect of blood

Surprisingly

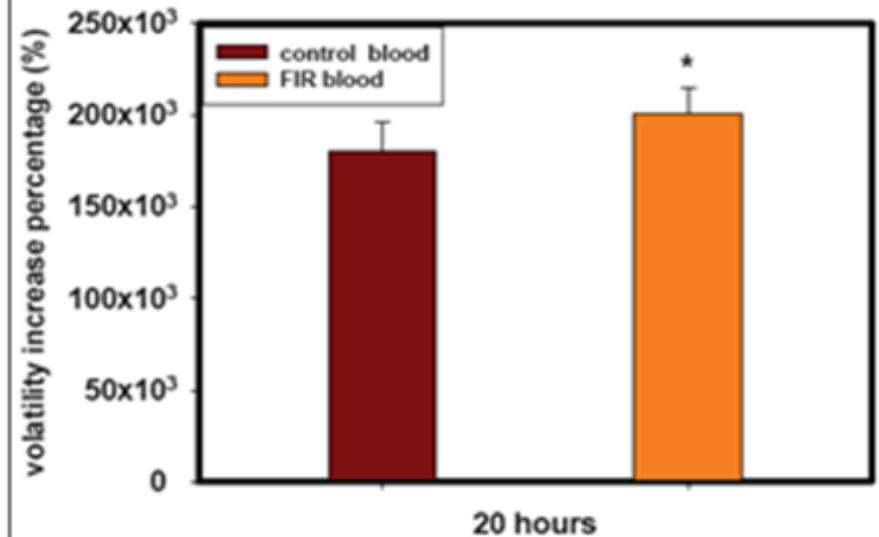
Fabric blood memory test

血液記憶效益—測試

volatility - sorghum liquor



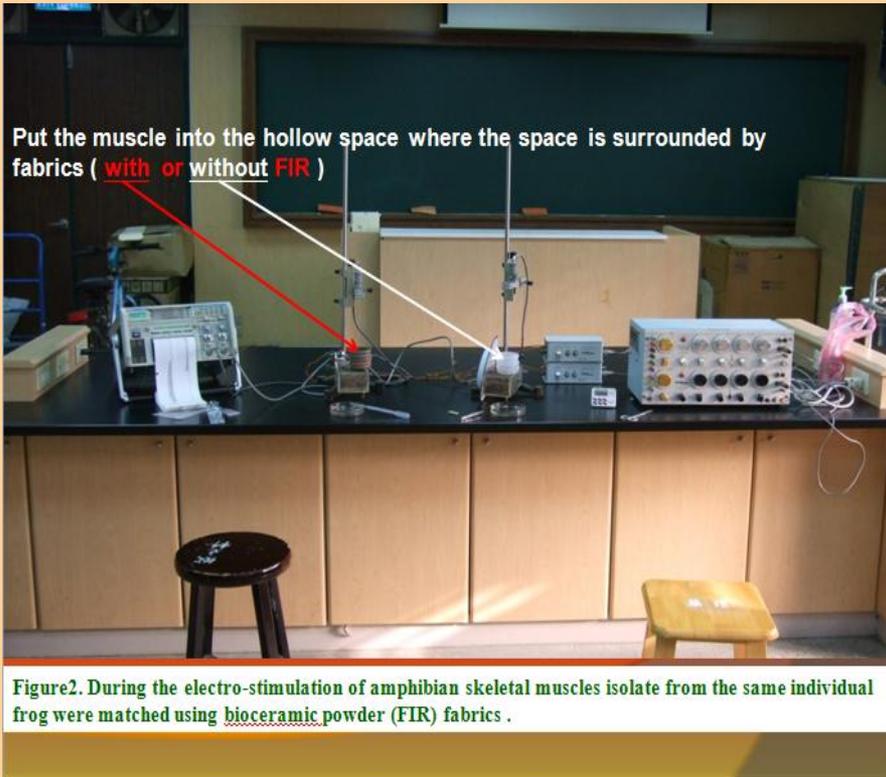
volatility - sorghum liquor



P value = 0.0280022685 < 0.05

北醫梁庭繼生物能實驗室

3.2 Restore muscle fatigue



Obtain a double-pithed frogs and using a sharp scissors to peel the skin off the leg and trim the thigh muscles away from the femur. And then, dissect under the Achilles tendon.

Ligate the tendon and free the gastrocnemius off from tibia and fibula of the lower leg and finally cut off tibia and fibula and femur. The muscle preparation was then attached to the recording apparatus that showed as Figure.

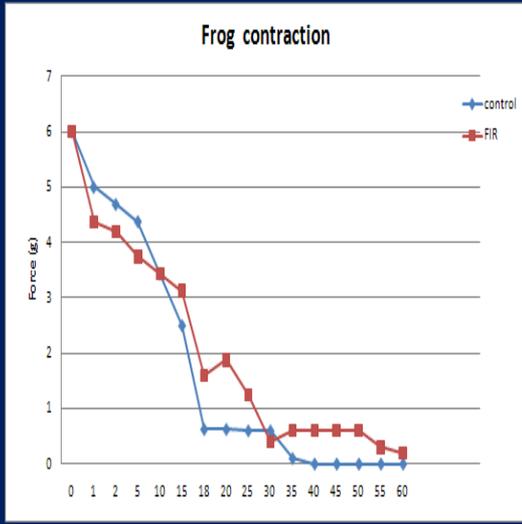
While two individual gastrocnemius muscles were connected to the computer system (*BIOPAC physiological recording system*), we operated the computer and the stimulator to obtain the maximum contraction power by adjusting the power supply. The stimulator stimulated the muscle with continuous pulses at intervals of X ms for periods of one second.

The purpose of this experiment was to stimulate the muscle constantly for a long period of time and record loading contraction force (grams) and time until onset of muscle fatigue.

3.2 Restore muscle fatigue

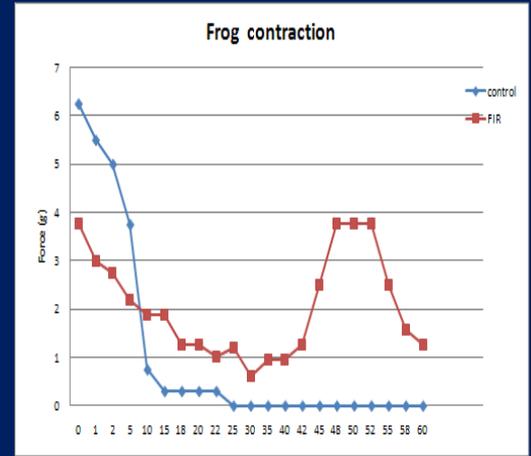
| 2月25日 布料2 | | | | |
|-----------|---------|------|-------|------------------------------|
| | treat | Volt | Force | 1pps stimulate until fatigue |
| Frog腿1 | FIR | 1 | 3.75 | 55mins |
| Frog腿2 | control | 1 | 6.25 | 30mins |

| Control | | FIR | |
|-----------|-----------|-----------|-----------|
| Time(min) | Force (g) | Time(min) | Force (g) |
| 0 | 6 | 0 | 6 |
| 1 | 5 | 1 | 4.375 |
| 2 | 4.69 | 2 | 4.2 |
| 5 | 4.38 | 5 | 3.75 |
| 10 | 3.43 | 10 | 3.43 |
| 15 | 2.5 | 15 | 3.125 |
| 18 | 0.625 | 18 | 1.6 |
| 20 | 0.625 | 20 | 1.875 |
| 25 | 0.6 | 25 | 1.25 |
| 30 | 0.6 | 30 | 0.4 |
| 35 | 0.1 | 35 | 0.6 |
| 40 | 0 | 40 | 0.6 |
| 45 | 0 | 45 | 0.6 |
| 50 | 0 | 50 | 0.6 |
| 55 | 0 | 55 | 0.3 |
| 60 | 0 | 60 | 0.2 |



| 2月25日 | | | | |
|--------|---------|------|-------|------------------------------|
| | treat | Volt | Force | 1pps stimulate until fatigue |
| Frog腿1 | FIR | 2V | 3.75 | 5mins |
| Frog腿2 | control | 7V | 6.25 | 10mins |

| Control | | FIR | |
|-----------|-----------|-----------|-----------|
| Time(min) | Force (g) | Time(min) | Force (g) |
| 0 | 6.25 | 0 | 3.75 |
| 1 | 5.5 | 1 | 3 |
| 2 | 5 | 2 | 2.75 |
| 5 | 3.75 | 5 | 2.188 |
| 10 | 0.75 | 10 | 1.875 |
| 15 | 0.3 | 15 | 1.875 |
| 18 | 0.3 | 18 | 1.25 |
| 20 | 0.3 | 20 | 1.25 |
| 22 | 0.3 | 22 | 1 |
| 25 | 0 | 25 | 1.2 |
| 30 | 0 | 30 | 0.625 |
| 35 | 0 | 35 | 0.938 |
| 40 | 0 | 40 | 0.938 |
| 42 | 0 | 42 | 1.25 |
| 45 | 0 | 45 | 2.5 |
| 48 | 0 | 48 | 3.75 |
| 50 | 0 | 50 | 3.75 |
| 52 | 0 | 52 | 3.75 |
| 55 | 0 | 55 | 2.5 |
| 58 | 0 | 58 | 1.563 |
| 60 | 0 | 60 | 1.25 |



Found that : As time progresses, the frog (sample 1) there is still some degree of strength index of the size of sustainability, while the frog (samples 2) strength index is nearing completion (no force on).

Bio-ceramic material can be applied to promote the activities of frog' s organizations with the enhancement of their own continuous operation.

3.2.1 pH changes after fatigue by electro-stimulated isometric contractions

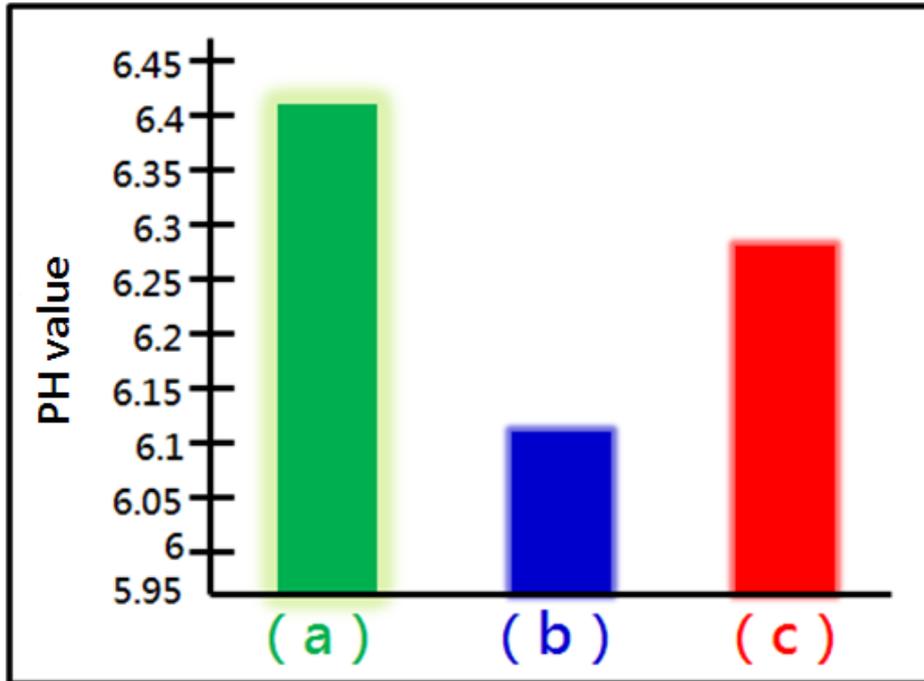


Figure : The change in PH value before and after electrical stimulation experiments of frog muscles

• The changes in pH value of metabolism acid of frog muscles before and after testing for electro-stimulation, including :

- (a) before the electro-stimulation
- (b) after the electro-stimulation for 20 minutes (not treated by far- infrared radiation during the experiment
- (c) after the electro-stimulation for 20 minutes (treated by far-infrared radiation produced by bio-energy material during the experiment

- PH results
- ddH₂O : 5.63
- initial muscle : 6.39
- Control : 6.10
- Bioceramic (with FIR) : 6.27



In this study, the biological reaction caused by bio-ceramic materials can retard accumulation of metabolic acid.

3.2.2 Increasing muscular endurance and promoting recovery from fatigue after exercise



3.2.2 Increasing muscular endurance and promoting recovery from fatigue after exercise

Athletes are always searching for ways to improve their performance and prevent fatigue which can be conveniently used as part of a normal lifestyle, such as antioxidant dietary supplements.

Table : The average performance of the nine female athletes in 100-meter dash wearing cFIR necklace

| | | 1st wk | 2nd wk | 3rd wk | 4th wk | 5th wk | 6th wk |
|----------|---------|--------|--------|--------|--------|--------|--------|
| Before | wearing | 13.25s | 13.10s | 13.45s | 13.00s | 13.25s | 12.85s |
| Expected | results | | | | | | |
| After | wearing | 13.15s | 13.25s | 13.10s | 12.75s | 12.95s | 12.50s |
| Final | results | | | | | | |
| | | +0.75% | +1.15% | +2.60% | +1.92% | +2.26% | +2.23% |

Bio-energy ceramic fiber / fabric --- to improve athletic performance

3.3 Activation of cellular function (Say “no” to chronic diseases ! Nitric Oxide (NO) plays the leading role)

NO (Nitric Oxide ; 一氧化氮) 對人體的影響 What are the effects of NO on human body

腦中神經元
Brain neurons



(4) NO是腦中神經細胞間重要的訊息傳遞物質
Between brain nerve cells, NO is an important material for communicating the message.



(5) NO可抵抗細菌及寄生蟲的感染
NO is resistant to bacteria and infections from parasite



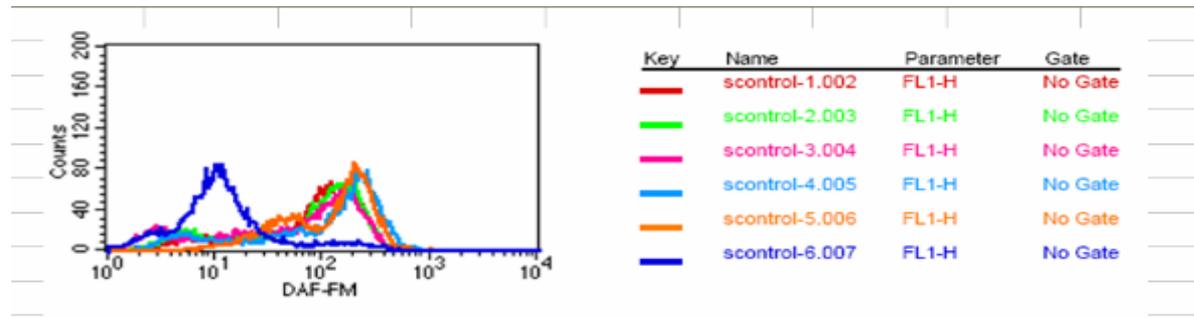
(1) NO可提升嗅覺
NO can enhance the sense of smell

(2) NO的釋放能加強發炎反應，可應用在協助臨床的診斷
The release of NO can enhance the inflammatory response that can be applied to assist the clinical diagnosis for -----

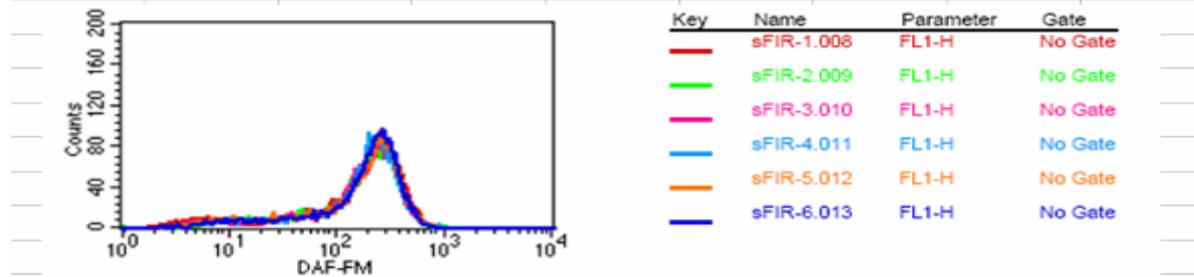
(3) NO藉由血管的擴張，引起陰莖的勃起
NO can cause the penis erection by making the blood vessels expanded

Cells

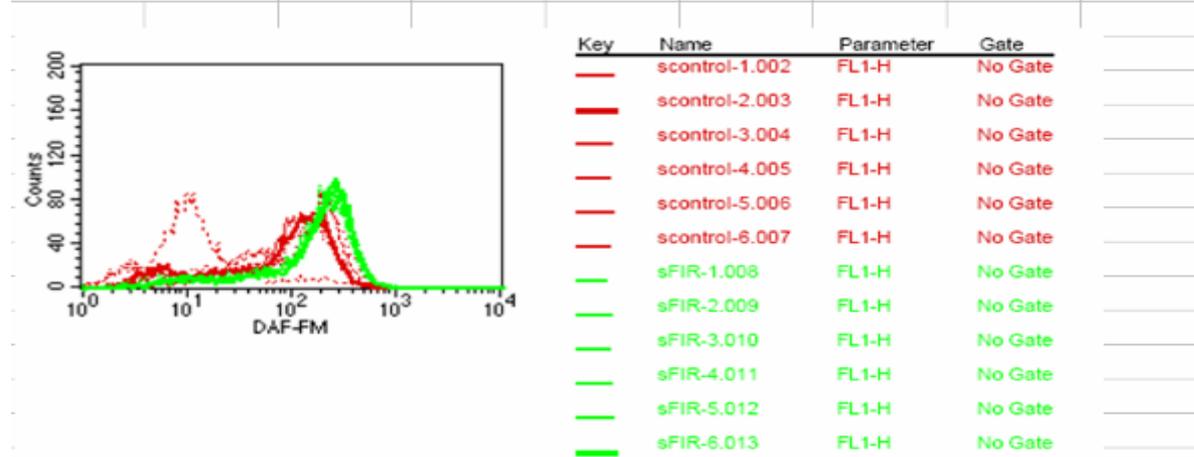
"NO" fluorescent dye



FIR groups(1 to 6)

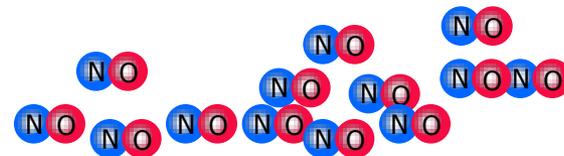
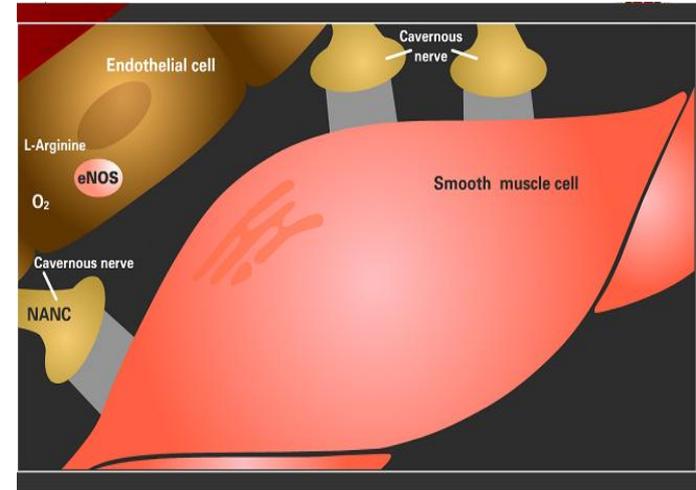
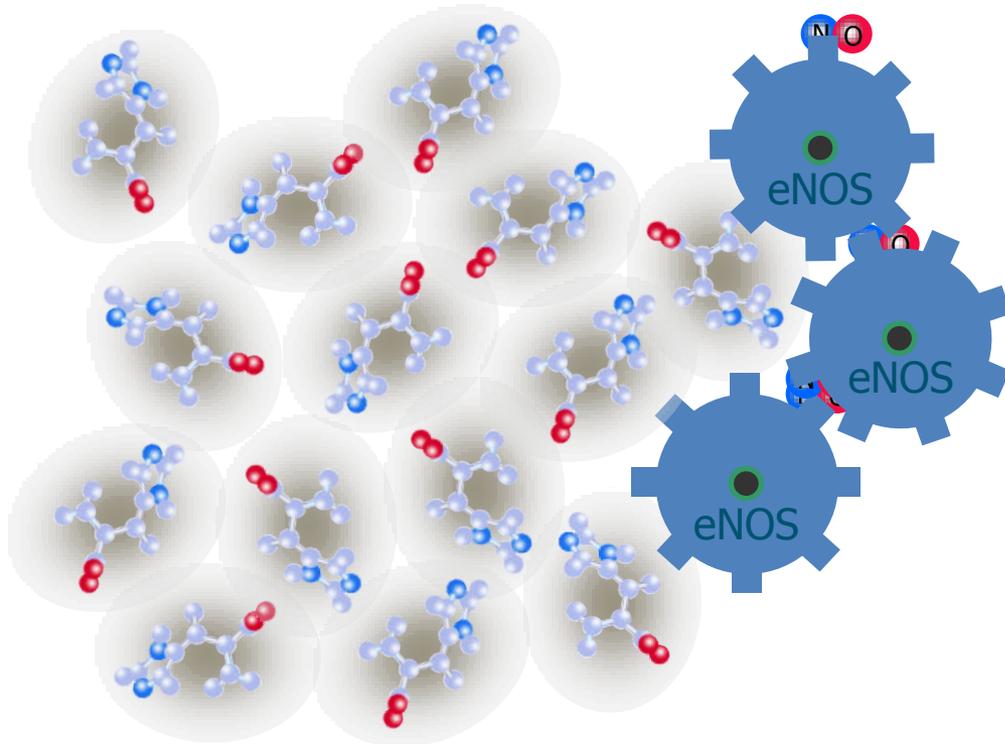


control vs FIR (total)



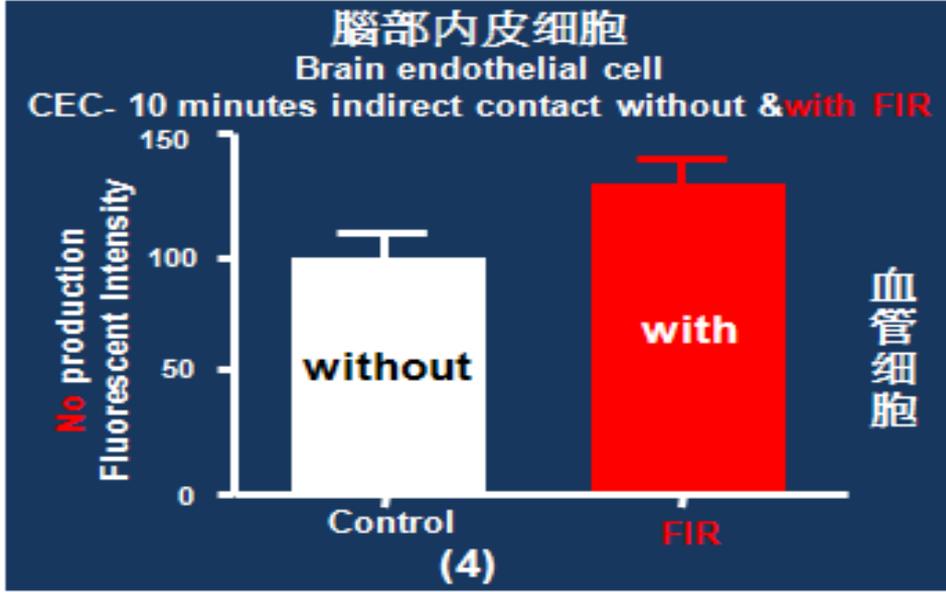
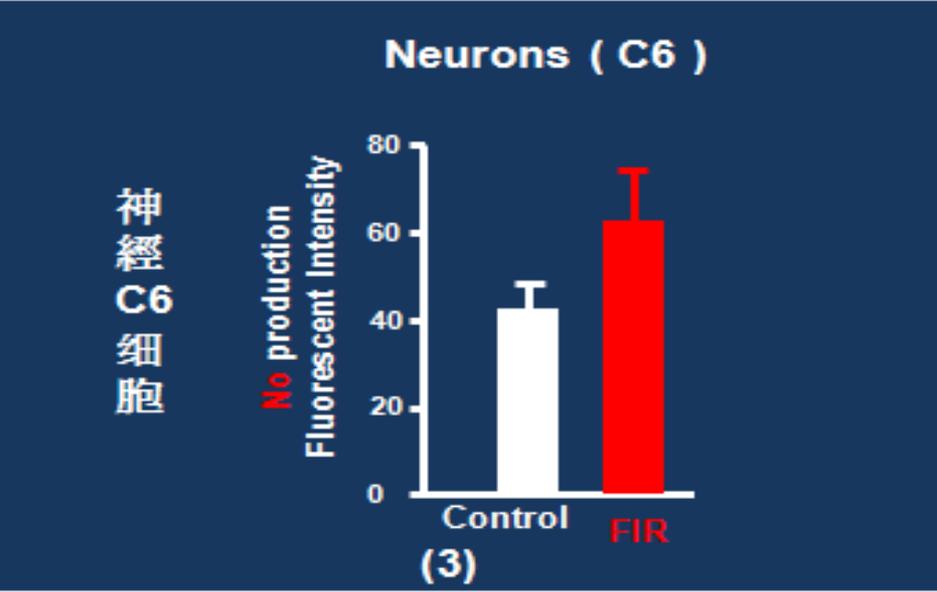
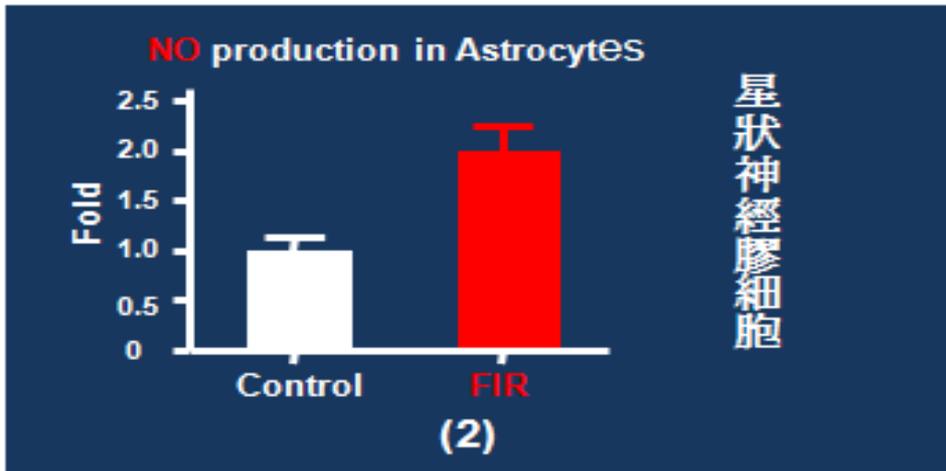
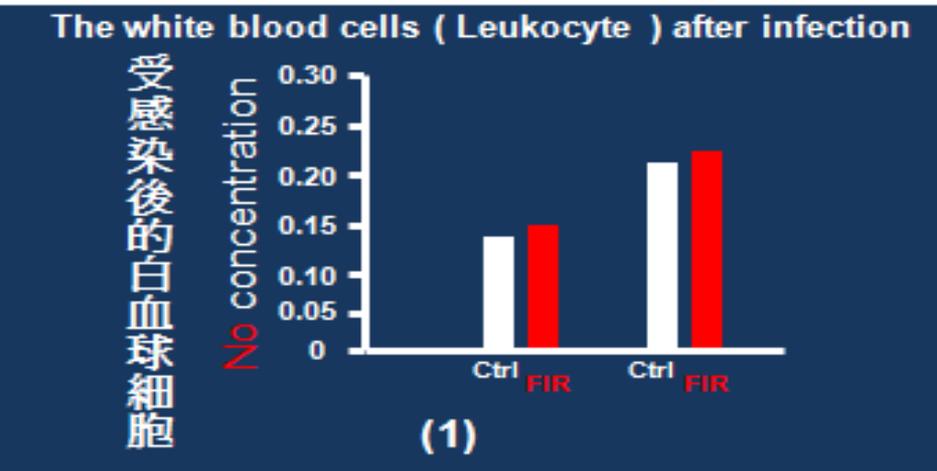
cFIR can make "eNOS" be induced to produce "NO"

L- arginine



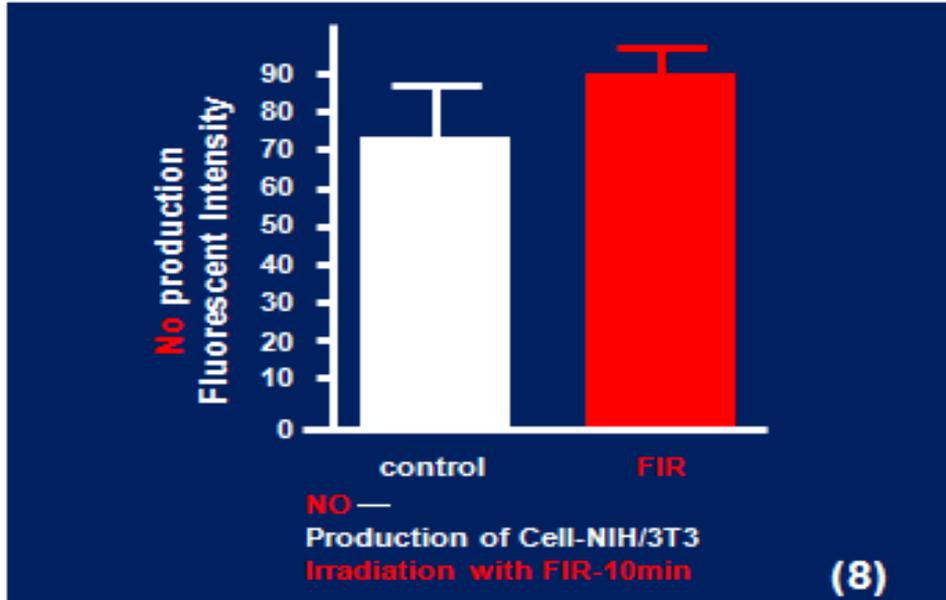
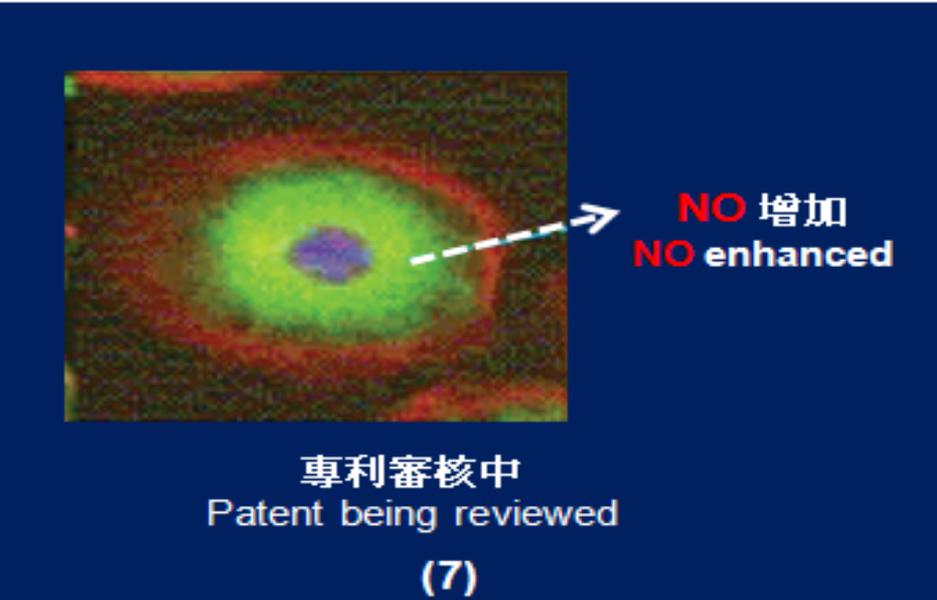
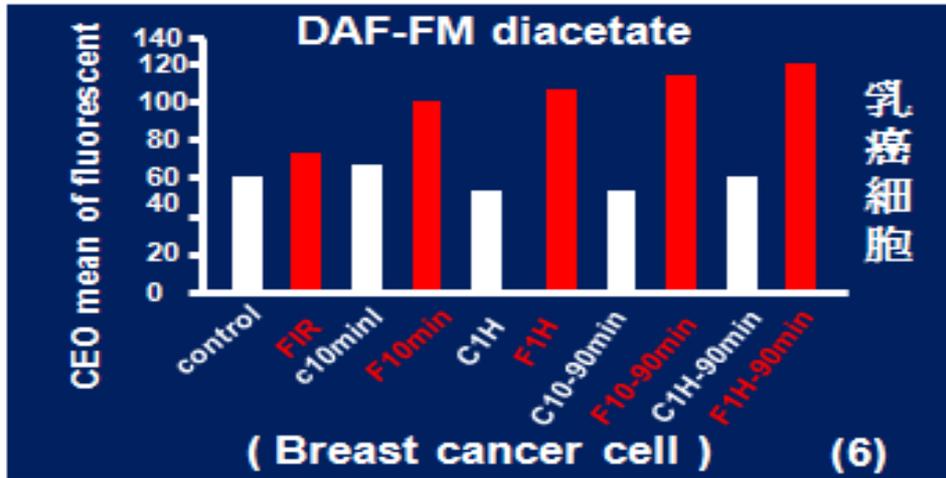
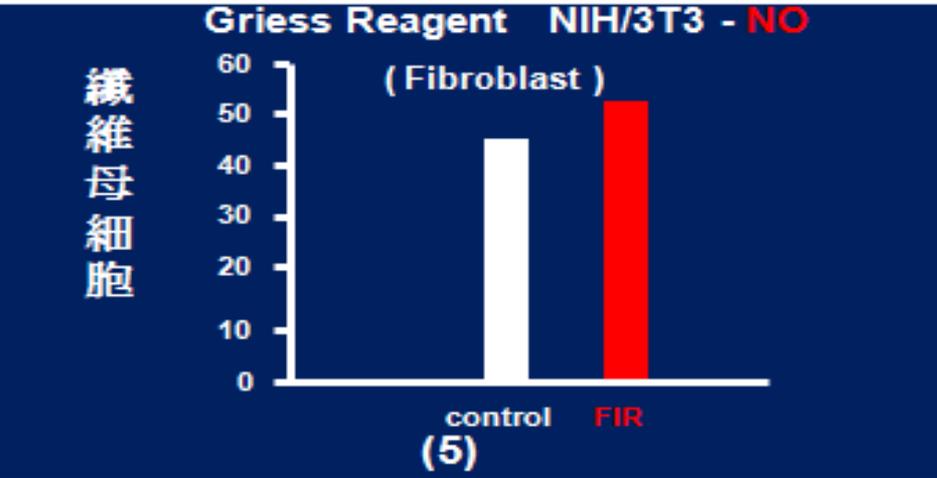
3.3 Activation of cellular function (Say "no" to chronic diseases ! Nitric Oxide (NO) plays the leading role)

生物能材料(不需直接接觸)—能瞬間誘發細胞產生Nitric Oxide (縮寫成NO；一氧化氮)
NO in cells can be induced immediately by FIR in which a contact between them is no need.



3.3 Activation of cellular function (Say "no" to chronic diseases ! Nitric Oxide (NO) plays the leading role)

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3.3.1 The applications

Robert Furchgott shared a **Nobel prize** in 1998 for showing nitric oxide played an important role in the cardiovascular system.

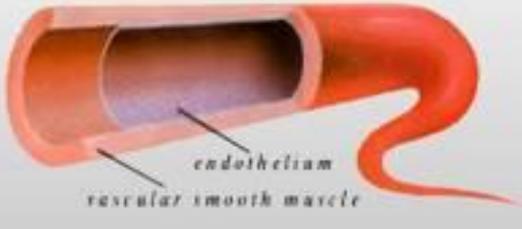
What Is NO

(NO, Nitric Oxide)

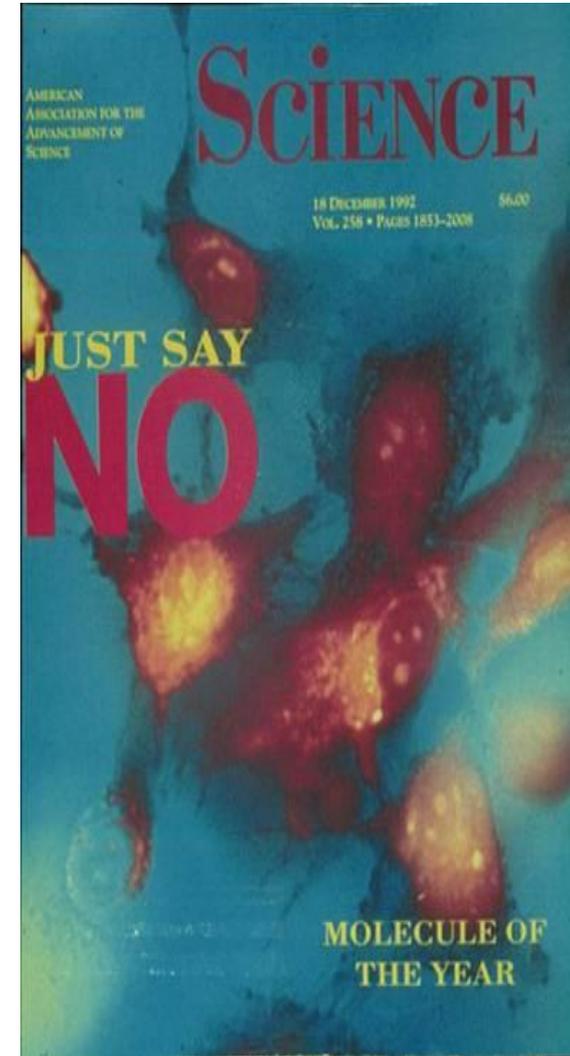
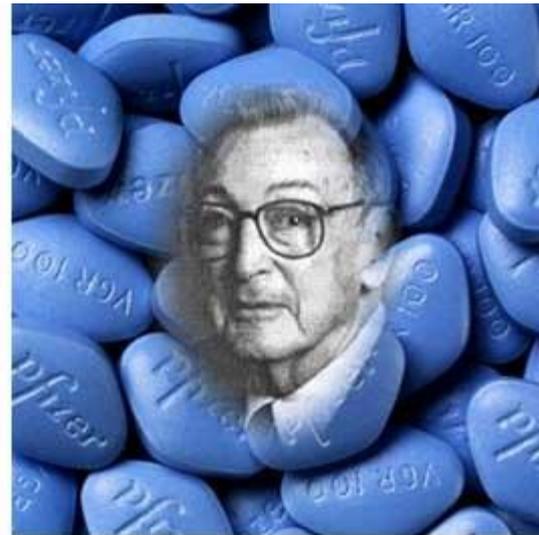
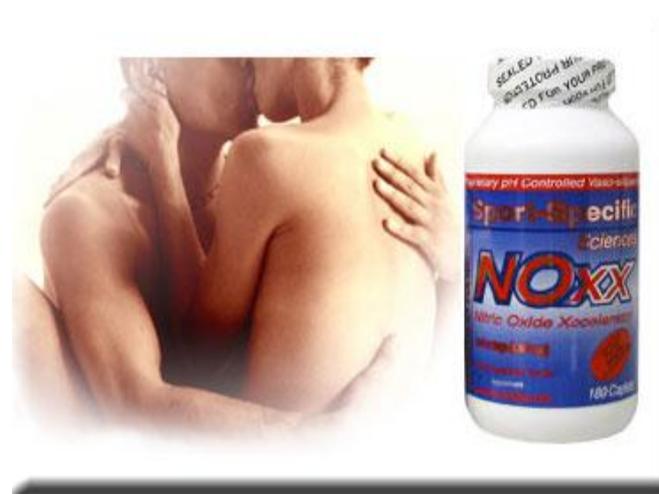


NO

A computer-simulated image of the NO molecule



endothelium
vascular smooth muscle



Robert Furchgott shared a **Nobel prize** in 1998 for showing nitric oxide played an important role in the cardiovascular system.

Nitric Oxide Supplements Review

By Mike Westerdal of CriticalBench.com



HGH: Human Growth Hormone

Get Lean, Build Muscle & Lose Fat. Free Shipping! Buy Two Get One Free



The Real Truth About HGH

Don't Be Fooled By Scam HGH Sites! Find Out What Works, Free HGH Info

Ads by Google



Vasodilation refers to an increase in the flow of blood through the body, which means faster and more efficient delivery of nutrients like amino acids, creatine, glucose, and oxygen to the muscle fibers. This helps your muscles to grow bigger and recover faster while facilitating the removal of waste products like lactic acid and CO₂ that can decrease performance. Greater blood flow also enhances the delivery of anabolic hormones like testosterone, growth hormone and insulin-like growth factor-I, all of which are important for muscle growth. Other benefits of increased blood flow include reduced inflammation and a bigger and longer-lasting "pump," too.

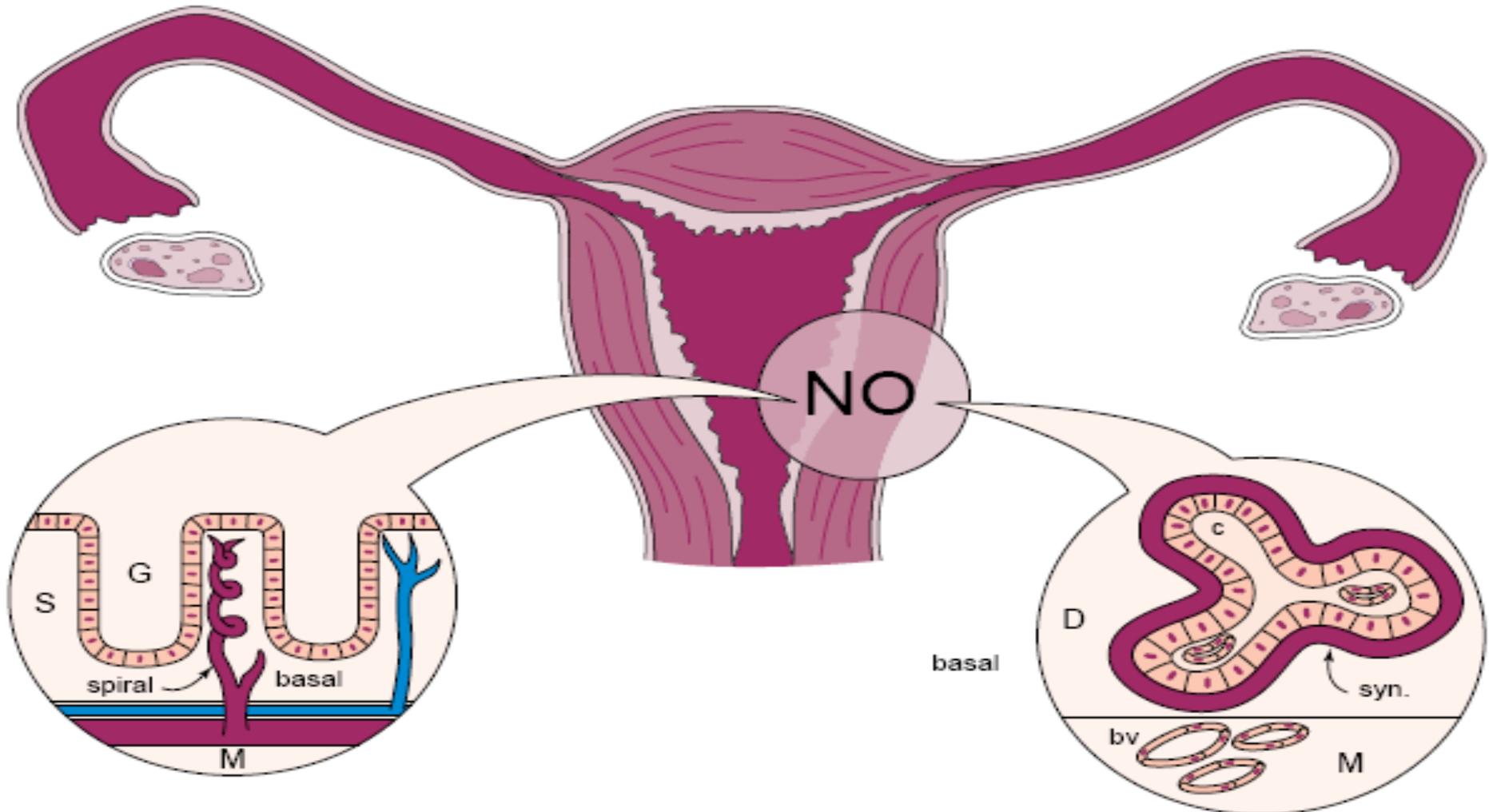
In our bodies NO is synthesized by L-arginine by an enzyme called nitric oxide synthase (eNOS). This catalyzes the conversion of L-arginine to nitric oxide and citrulline. Under normal conditions our bodies produce it only in very small amounts-enough to do what needs to be done and that's it. Production of NO is increased during exercise but not necessarily to the degree that we'd like to see. Some of the numerous benefits of boosting our bodies' output of nitric oxide include:

- Increased vasodilation, which increases blood flow to the skeletal muscles, which improves the transportation of oxygen and the delivery of nutrients to the cells;
- Increased strength and improved stamina;
- Gains in lean mass;
- Enhanced, more rapid muscle recovery;
- Improved endurance; and
- Extended muscle pump.

Nitric Oxide (NO) is a gas that that is important to a broad range of bodily functions including controlling blood circulation and helping to regulate activities of the brain, lungs, kidneys, stomach and plenty more. For the most part it facilitates communications among cells. For bodybuilders, the most interesting process in which NO is involved is the dilation of blood vessels. This is known as vasodilation and that is exactly why you should be interested in NO and what it can do to improve your performance.

The application of women's underwear

- "NO" plays a role for women' s physiology period and during pregnancy.
- "NO" is related to the microcirculation of uterine endometrial tissue



3.4 Activation of cellular function (**Calmodulin** has important biological functions)

Calmodulin = CaM (carrying calcium ; 攜鈣素)

攜鈣素 — 是由 148 個胺基酸所組成的弱酸性蛋白質，在其結構鍵可以螯合 4 個鈣離子，再依照各個細胞內的鈣濃度差，來進行鈣離子的提供。

Carrying calcium — is a 148 amino acid protein consisting of weak acid in its structure, key to chelate four calcium ions. When a function in accordance with various intracellular calcium concentration is poor, it can carry out the provision of calcium ions.

Calcium deficiency crisis (缺鈣的危機) :

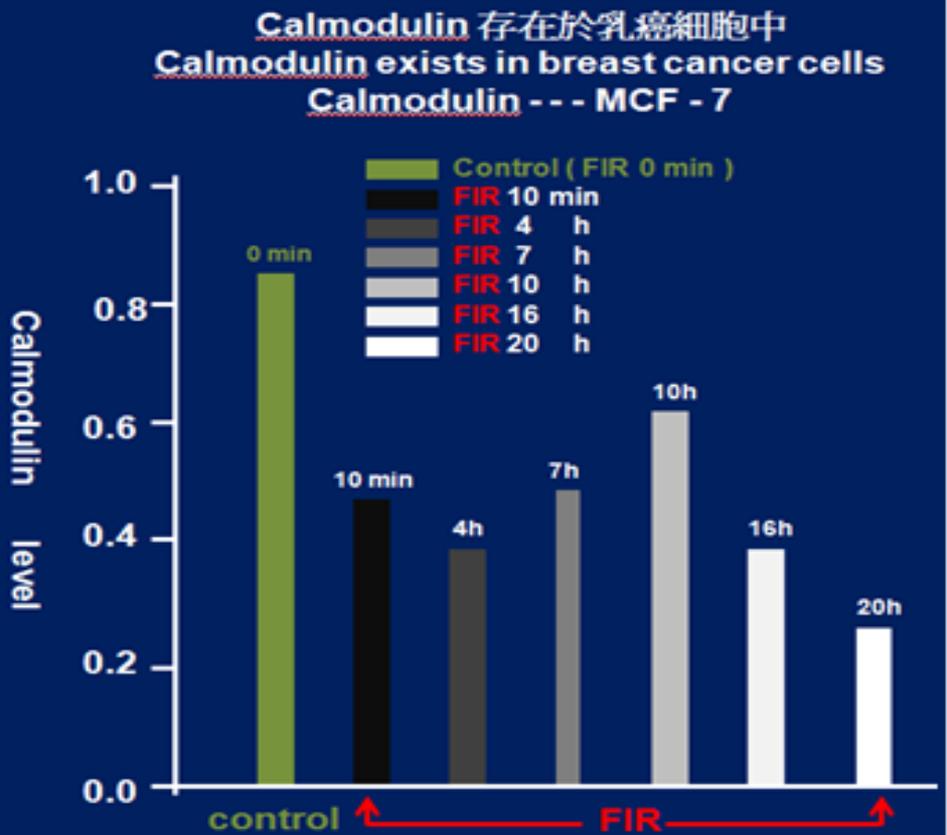
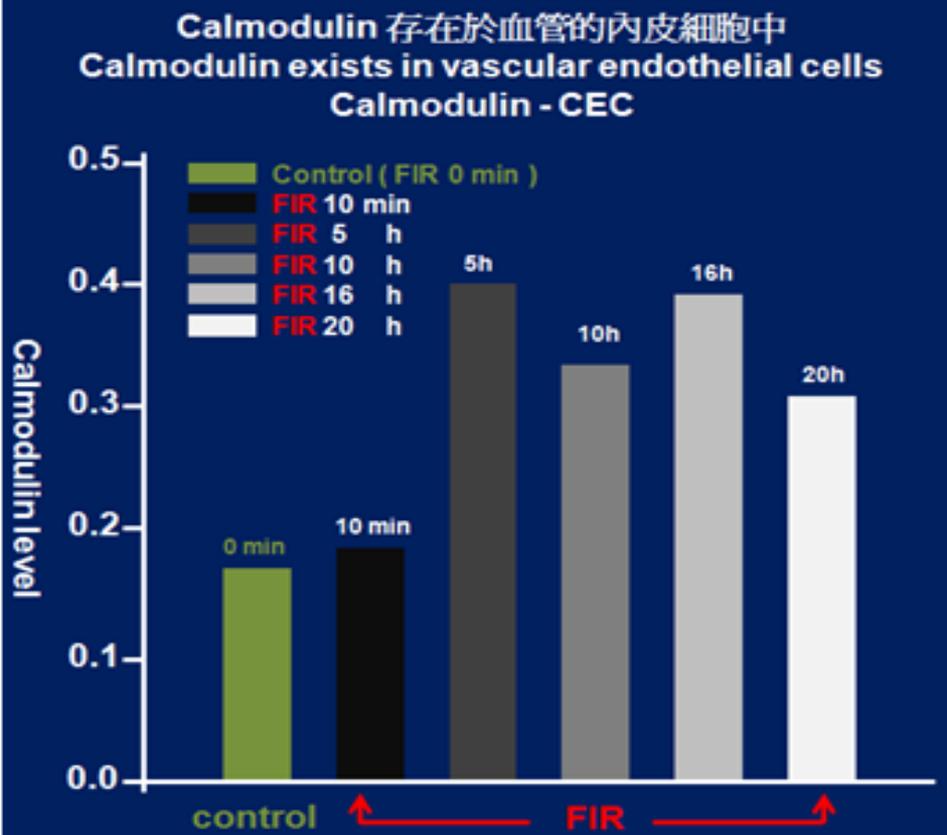
- 1 --Children dysplasia "bones and brain"**
- 2 --There is sufficient calcium in order to complete the pregnancy, and avoid the terrible complications of pregnancy.**
- 3 --Calcium deficiency makes the immune system disorder, hormonal imbalance, nerve conduction delay.**
- 4 --Calcium deficiency caused by limbs, convulsions, limb weakness, thereby causing the shoulder pain, headache.**
- 5 --Diabetes, insulin secretion in full accordance with the instructions of calcium.**
- 6 --Most patients with hypertension caused due to calcium deficiency.**
- 7 --Calcium deficiency can cause atherosclerosis, myocardial infarction.**
- 8 --Calcium can prevent liver disease.**
- 9 --Calcium deficiency caused by stones.**
- 10 --Easy enough calcium to cause cancer.**
- 11 --Easy enough calcium Citation Alzheimer's disease and cataracts.**
- 12 --Calcium deficiency leading to osteoporosis.**

3.4 Activation of cellular function (Calmodulin has important biological functions)

Calmodulin = CaM (carrying calcium ; 攜鈣素)
Avoiding Calcium deficiency crisis (避免缺鈣的危機) : *Effect of FIR on Action potential*

攜鈣素 一 是由 148 個 胺基酸 所 組成 的 弱 酸性 蛋白質 ， 在 其 結構 鍵 可以 螯 合 4 個 鈣 離子 ， 再 依照 各 個 細胞 內 的 鈣 濃度 差 ， 來 進行 鈣 離子 的 提供 。

Carrying calcium — is a 148 amino acid protein consisting of weak acid in its structure, key to chelate four calcium ions. When a function in accordance with various intracellular calcium concentration is poor, it can carry out the provision of calcium ions.

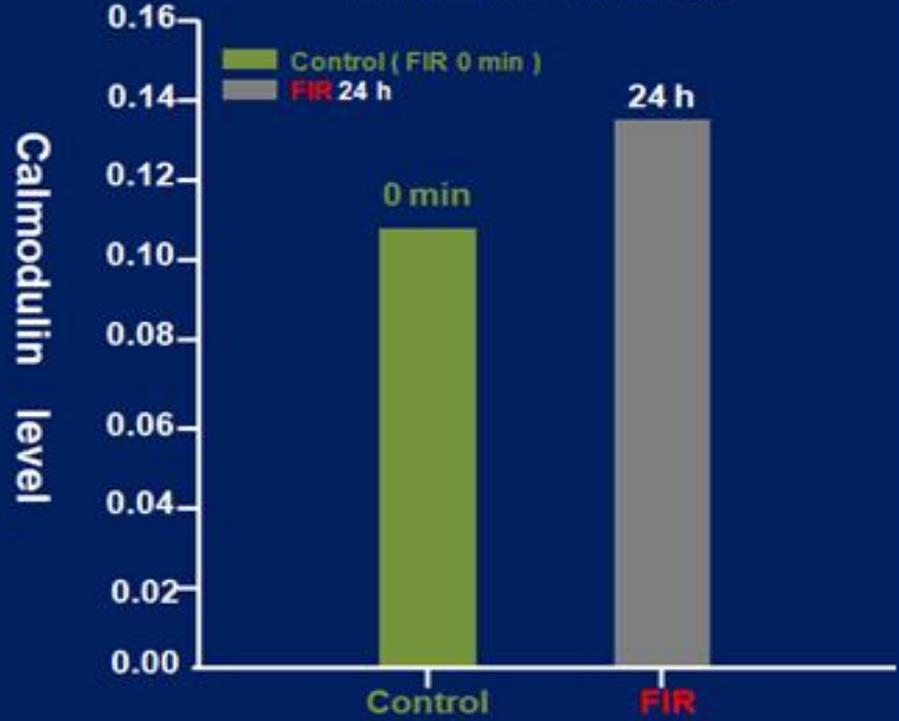


3.4 Activation of cellular function (Calmodulin has important biological functions)

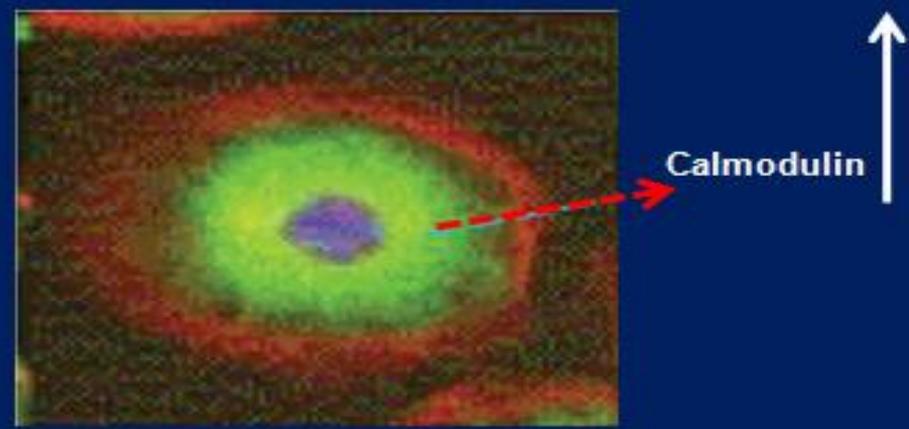
星形膠質細胞 (Astrocytes ; 也統稱為 星形膠質細胞) 的特點是星形膠質細胞在腦和脊髓。他們執行許多功能，包括：輔助內皮細胞 (內皮細胞構成血腦屏障)，提供養分給神經組織，維持細胞的離子平衡，並於大腦和脊髓外傷後，發揮主要的修護作用。

Astrocytes (also known collectively as **astroglia**) are characteristic star-shaped glial cells in the brain and spinal cord. They perform many functions, including biochemical support of endothelial cells which form the blood-brain barrier, provision of nutrients to the nervous tissue, maintenance of extracellular ion balance, and a principal role in the repair and scarring process of the brain and spinal cord following traumatic injuries.

Calmodulin 存在於星狀神經細胞中
Calmodulin exists in Astrocyte
Calmodulin - Astrocyte

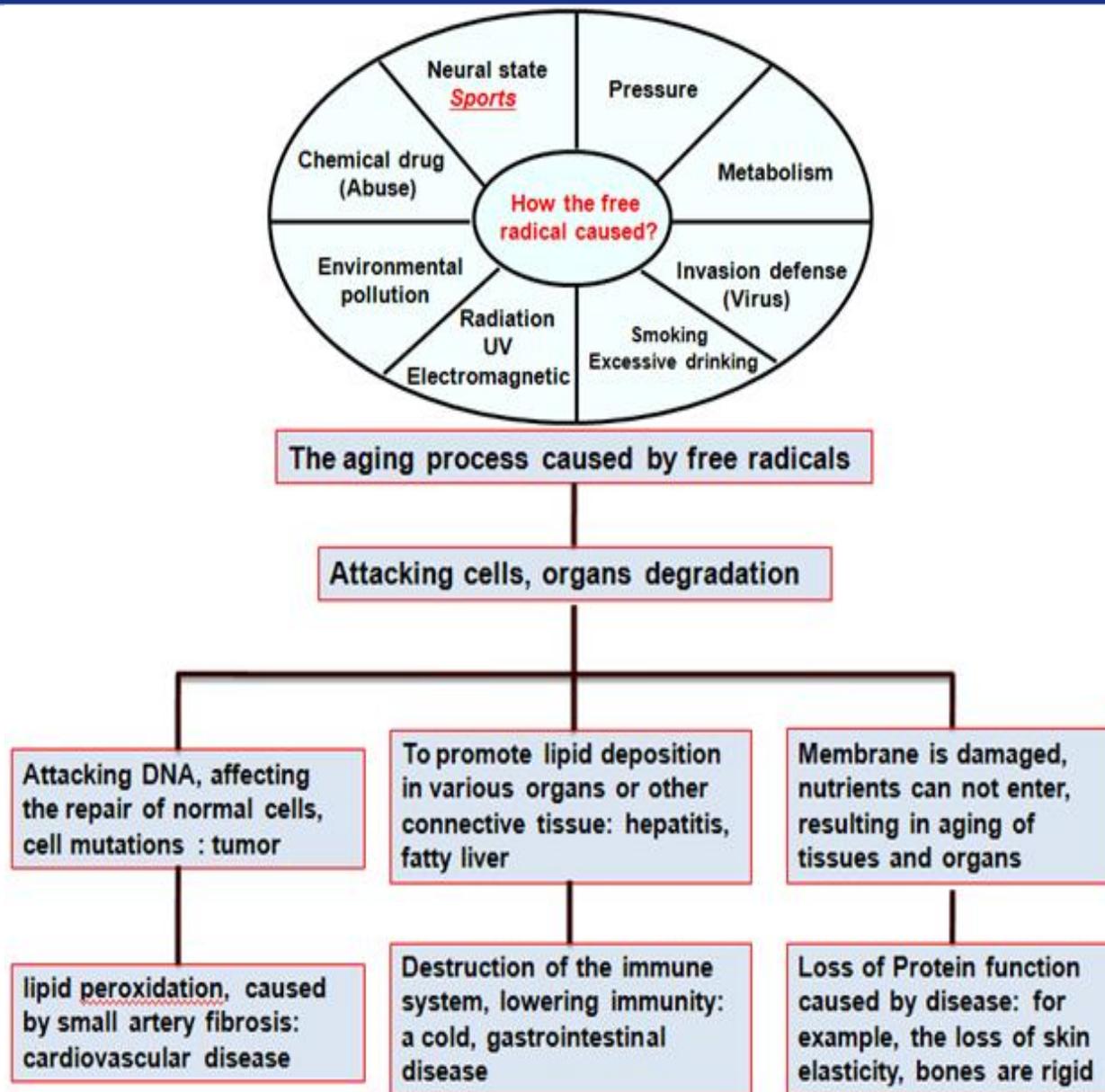


FIR 誘發細胞產生 Calmodulin
Cells are induced by FIR to produce Calmodulin



專利審核中
Patent being reviewed

3.5 Removal of free radicals (the main cause of human aging)



Hydrogen peroxide scavenging rescues frataxin deficiency in a *Drosophila* model of Friedreich's ataxia

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Edited by Solomon H. Snyder, Johns Hopkins University School of Medicine, Baltimore, MD, and approved November 28, 2007 (received for review October 11, 2007)

Friedreich's ataxia (FRDA) is a neurodegenerative disorder arising from a deficit of the mitochondrial iron chaperone, frataxin. Evidence primarily from yeast and mammalian cells is consistent with the hypothesis that a toxic hydroxyl radical generated from hydrogen peroxide (H₂O₂) via iron-catalyzed Fenton chemistry at least partially underlies the pathology associated with this disease. However, no whole-organism studies have been presented that directly test this hypothesis. We recently developed a *Drosophila* model that recapitulates the principal hallmarks of FRDA [Anderson PR, Kirby K, Hilliker A, Phillips JP (2005) *Hum Mol Genet* 14:3397–3405]. Using the *Drosophila* FRDA model, we now report that ectopic expression of enzymes that scavenge H₂O₂ suppresses the deleterious phenotypes associated with frataxin deficiency. In contrast, genetic augmentation with enzymes that scavenge superoxide is without effect. Augmentation of endogenous catalase restores the activity of the reactive oxygen species (ROS)-sensitive mitochondrial enzyme, aconitase and enhances resistance to H₂O₂ exposure, both of which are diminished by frataxin deficiency. Collectively, these data argue that H₂O₂ is an important pathogenic substrate underlying the phenotypes arising from frataxin deficiency in *Drosophila* and that interventions that reduce this specific ROS can effectively ameliorate these phenotypes. The therapeutic implications of these findings are clear and we believe warrant immediate clinical investigation.

have been presented that investigate the role of H₂O₂ in mediating frataxin deficiency phenotypes.

We recently reported the development of a *Drosophila* model of FRDA (17) that takes advantage of Gal4/UAS transgene-based RNAi-methodology to impose down-regulation of the *Drosophila* frataxin homolog (*Dftr*) (30). In this model, *Dftr* suppression recapitulates the principal biochemical hallmarks of FRDA, including diminished activity of Fe-S-containing enzymes, susceptibility to iron toxicity, loss of intracellular iron homeostasis, and early-onset adult mortality.

The hypothesis that H₂O₂ plays a critical role in FRDA pathogenesis predicts that interventions that diminish the availability of this potential reactant will reduce the severity of at least some aspects of the disease. We tested the validity of this hypothesis by using the *Drosophila* model to overexpress a set of H₂O₂-scavenging enzymes [peroxisomal and mitochondrial catalases (CATs) and a mitochondrial peroxiredoxin] in DFH-deficient flies. This report details the outcome of that investigation.

Results

The *Drosophila* FRDA model used in this work employs the C96-Gal4 driver to reduce endogenous DFH via RNAi and to coordinately augment native levels of antioxidant enzymes (17).

Other relevant literatures

Short Communication

Direct and indirect effects of far infrared rays emitting material on the hydrogen peroxide-scavenging capacity

Ting-Kai Leung^{a,*†}, Yung-Sheng Lin^{b,†}, Chris Chang^a, Chi-Ming Lee^a

Eur Respir J 1997; 10: 519–521
DOI: 10.1183/09031936.97.10030519
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European Respiratory Journal
ISSN 0903 - 1936

Hydrogen peroxide in exhaled air is increased in stable asthmatic children

Q. Jöbsis, H.C. Raatgeep, P.W.M. Hermans, J.C. de Jongste

Hydrogen peroxide in exhaled air is increased in stable asthmatic children. Q. Jöbsis, H.C. Raatgeep, P.W.M. Hermans, J.C. de Jongste. ©ERS Journals Ltd 1997.

ABSTRACT: Exhaled air condensate provides a noninvasive means of obtaining samples from the lower respiratory tract. Hydrogen peroxide (H₂O₂) in exhaled air has been proposed as a marker of airway inflammation. We hypothesized that in stable asthmatic children the H₂O₂ concentration in exhaled air condensate may be elevated as a result of airway inflammation.

In a cross-sectional study, 66 allergic asthmatic children (of whom, 41 were treated with inhaled steroids) and 21 healthy controls exhaled through a cold trap. The resulting condensate was examined fluorimetrically for the presence of H₂O₂. All subjects were clinically stable, nonsmokers, without infection.

The median H₂O₂ level in the exhaled air condensate of the asthmatic patients was significantly higher than in healthy controls (0.60 and 0.15 μmol, respectively; p<0.05), largely because of high values in the stable asthmatic children who did not use anti-inflammatory treatment (0.8 μmol; p<0.01 compared to controls).

We conclude that hydrogen peroxide is elevated in exhaled air condensate of children with stable asthma, and may reflect airway inflammation.

Eur Respir J 1997; 10: 519–521.

Dept of Paediatrics, Division of Paediatric Respiratory Medicine, Erasmus University and University Hospital/Sophia Children's Hospital, Rotterdam, The Netherlands.

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3015 GJ Rotterdam
The Netherlands

Keywords: Asthma, children, exhaled air, hydrogen peroxide, inhaled corticosteroids

Received: November 4 1996
Accepted after revision December 23 1996

Supported by grant 94.14 from the Netherlands Asthma Fund.

Hydrogen Peroxide-Scavenging Properties of Normal Human Airway Secretions

Souheil El-Chemaly, Matthias Salathe, Sylvia Baier, Gregory E. Conner, and Rosanna Forteza

Division of Pulmonary and Critical Care Medicine, Department of Anesthesiology, and Department of Cell Biology and Anatomy, University of Miami School of Medicine, Miami, Florida

To examine the antioxidant capacity of normal human airway secretions and to characterize its molecular components, tracheal lavages were obtained from eight patients intubated for elective surgery and free of lung disease. These samples (20 μl, approximately 6.8 μg of protein) scavenged 0.57 ± 0.09 nmol of added 0.96 nmol hydrogen peroxide (H₂O₂) within 10 minutes at room temperature (n = 8). The scavenging activity was inhibited 60 ± 4% by azide (an inhibitor of heme-containing peroxidases and catalase) and 42 ± 9% by dapsone (an inhibitor of lactoperoxidase). Mercaptosuccinic acid (an inhibitor of glutathione peroxidase) did not significantly inhibit H₂O₂ scavenging by these secretions. Fourfold diluted secretions showed only nonenzymatic scavenging activity, but the addition of thiocyanate to these samples (0.4 mM; substrate for lactoperoxidase) restored their ability to scavenge H₂O₂. The addition of reduced glutathione (8 μM) only enhanced nonenzymatic scavenging activity. These data provide evidence that multiple enzymatic and nonenzymatic systems coexist in human airway secretions that contribute to H₂O₂ scavenging. It appears, however, that H₂O₂ is mainly consumed by the lactoperoxidase system.

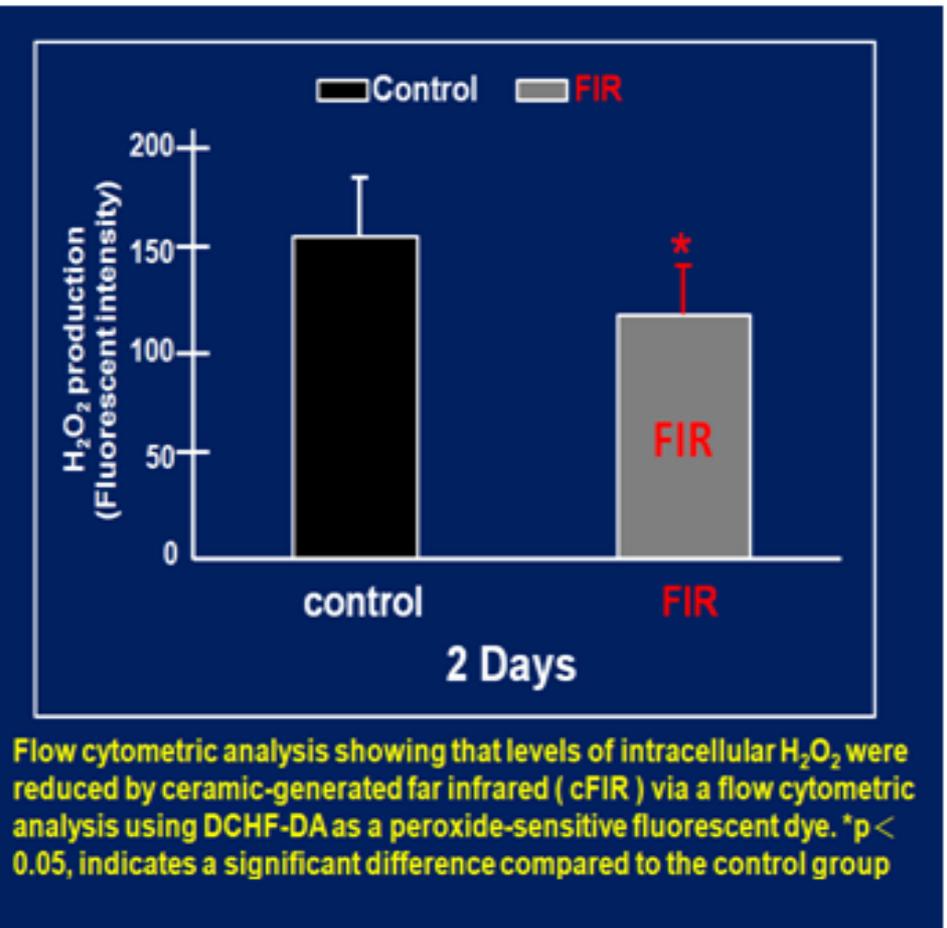
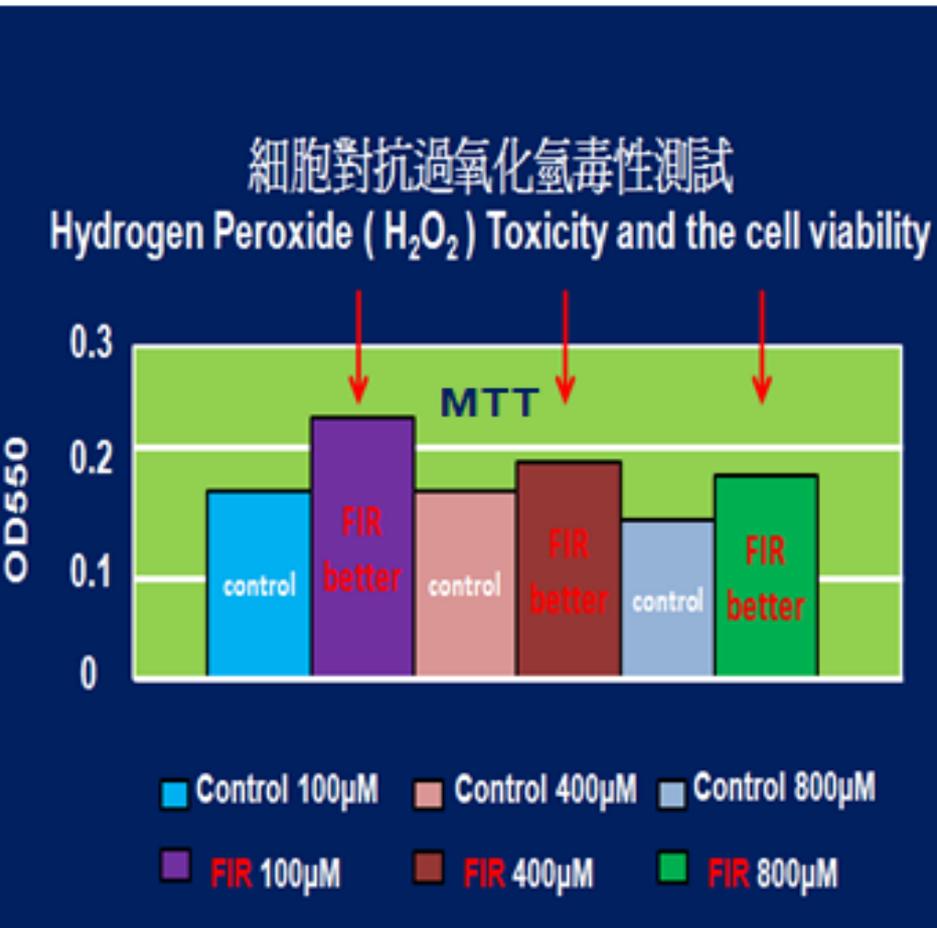
Keywords: oxidants; peroxidase; hydrogen peroxide; antioxidants

system to the total antioxidant capacity of airway secretions. Furthermore, most studies of human samples have used bronchoalveolar lavages. Although the interpretation of such studies is complicated by contamination with antioxidants derived from the alveolar space, they suggested that GPx is an important scavenger in the airway (3, 4). On the other hand, airway LPO has been found to be the most important H₂O₂ scavenger in sheep airway mucus when only tracheal secretions were collected and examined (2, 11).

Thus, there is uncertainty about the role of each of these enzymatic and nonenzymatic antioxidant defense molecules in the airways. The balance of these systems in protecting the airway epithelium from H₂O₂ (downstream from superoxide dismutase) will depend on both enzyme as well as specific substrate availability. Because catalase is not a secreted extracellular enzyme, H₂O₂ scavenging in normal conditions in which peroxidases from inflammatory cells are absent (such as myeloperoxidase [MPO] and eosinophil peroxidase) will mainly depend on the availability of GPx and its substrate, reduced glutathione (GSH), as well as on airway LPO and

3.5 Removal of free radicals (the main cause of human aging)

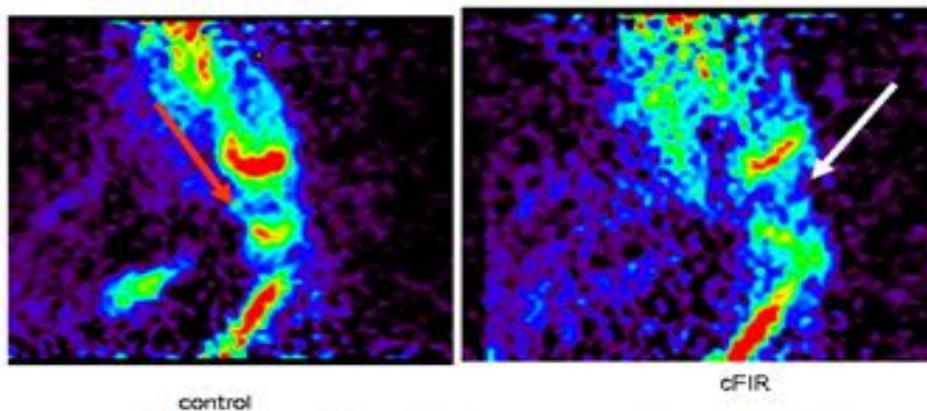
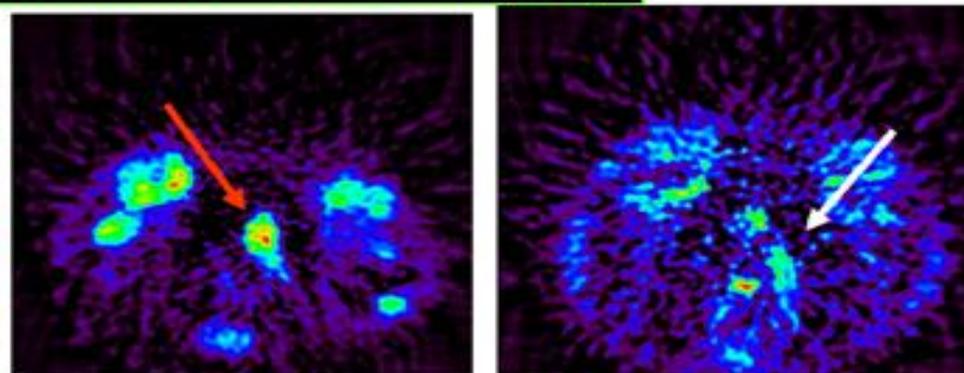
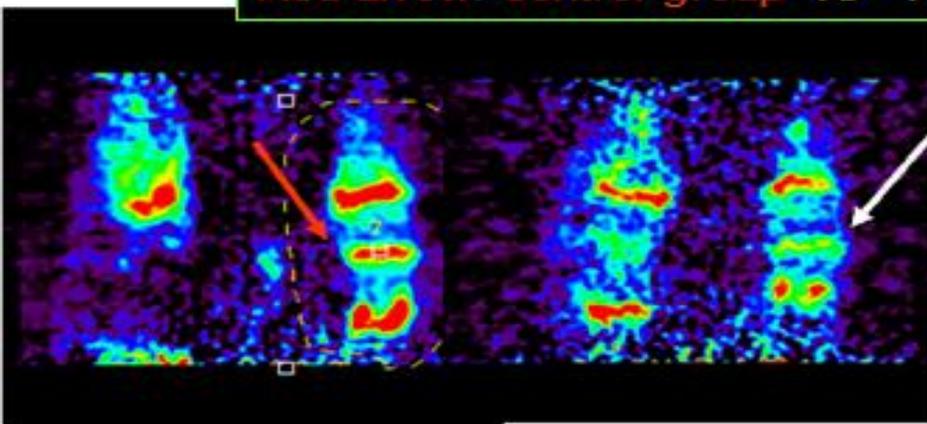
Hydrogen peroxide-based free radical (Oxidant)—the main trouble source in vivo (easy to steal an electron from a nearby molecule)



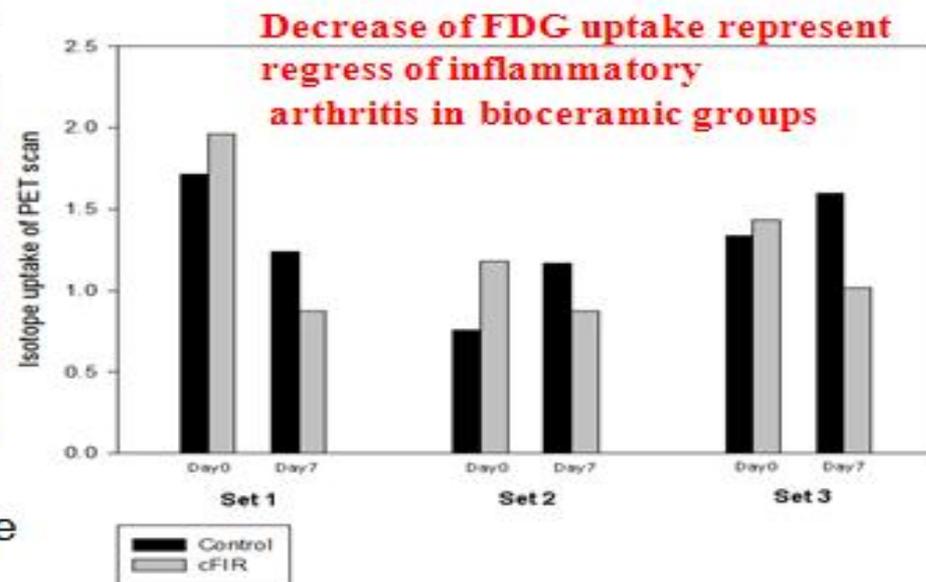
3.6 bio-energy has anti-inflammatory effects by the rabbit experiments

PET scan of rabbit knee joints after LPS intraarticular injection.

Red arrow: control group vs White arrow: bioceramic group



p value < 0.005, Very significant difference



3.7 The experimental for rats eating

Mouse :

1. ICR mice were 40 group only (♂)
2. Divided into 8 cage
3. Each cage has 5 mice

Environment : as the following chart

1. The iron plate was capped with cFIR powders
2. The cage will be placed on top of the iron plate
3. Then the cage was wrapped with the bag (the cFIR powders were inside), and finally wrapped with aluminum foil.

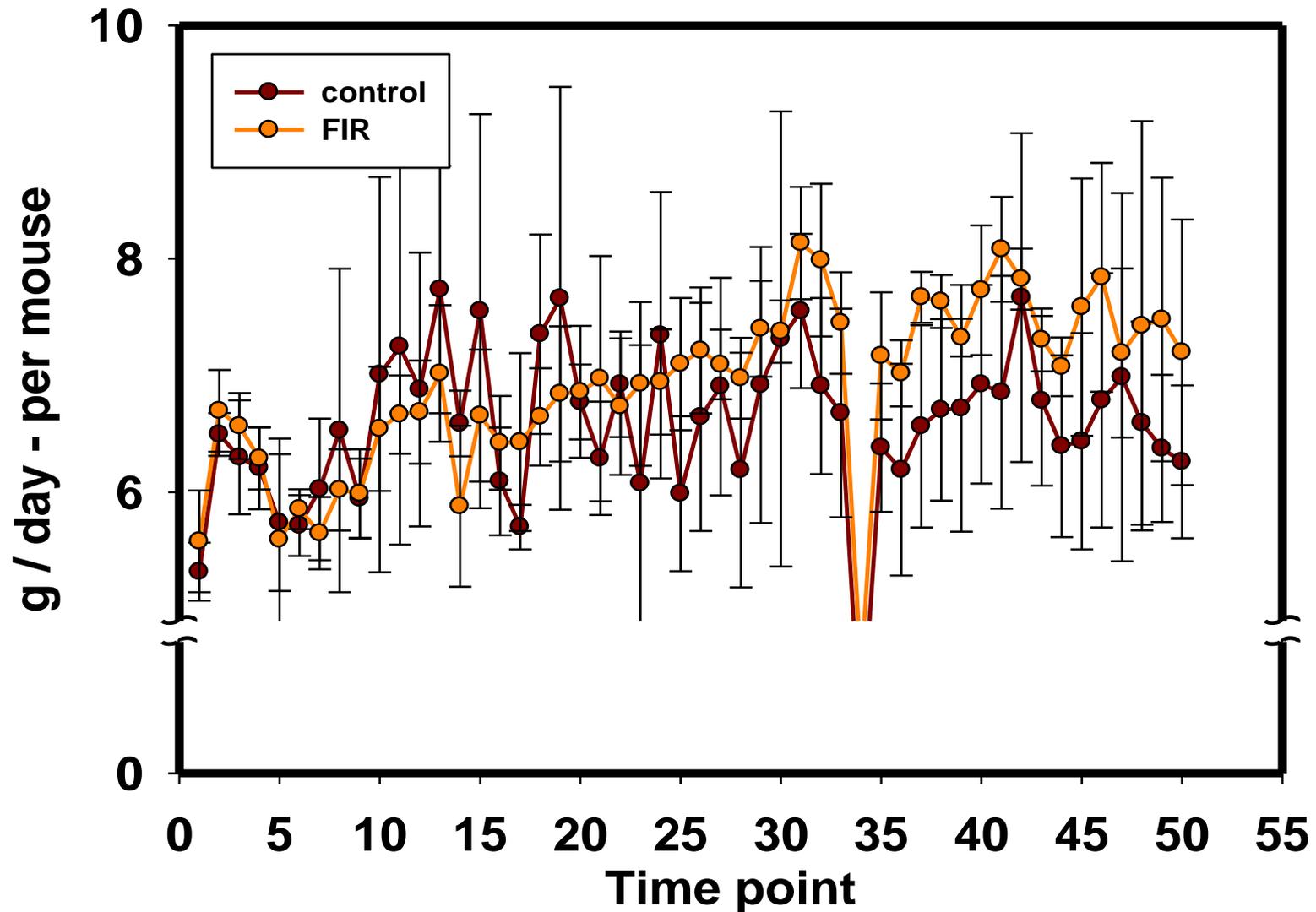


cFIR Group Layout

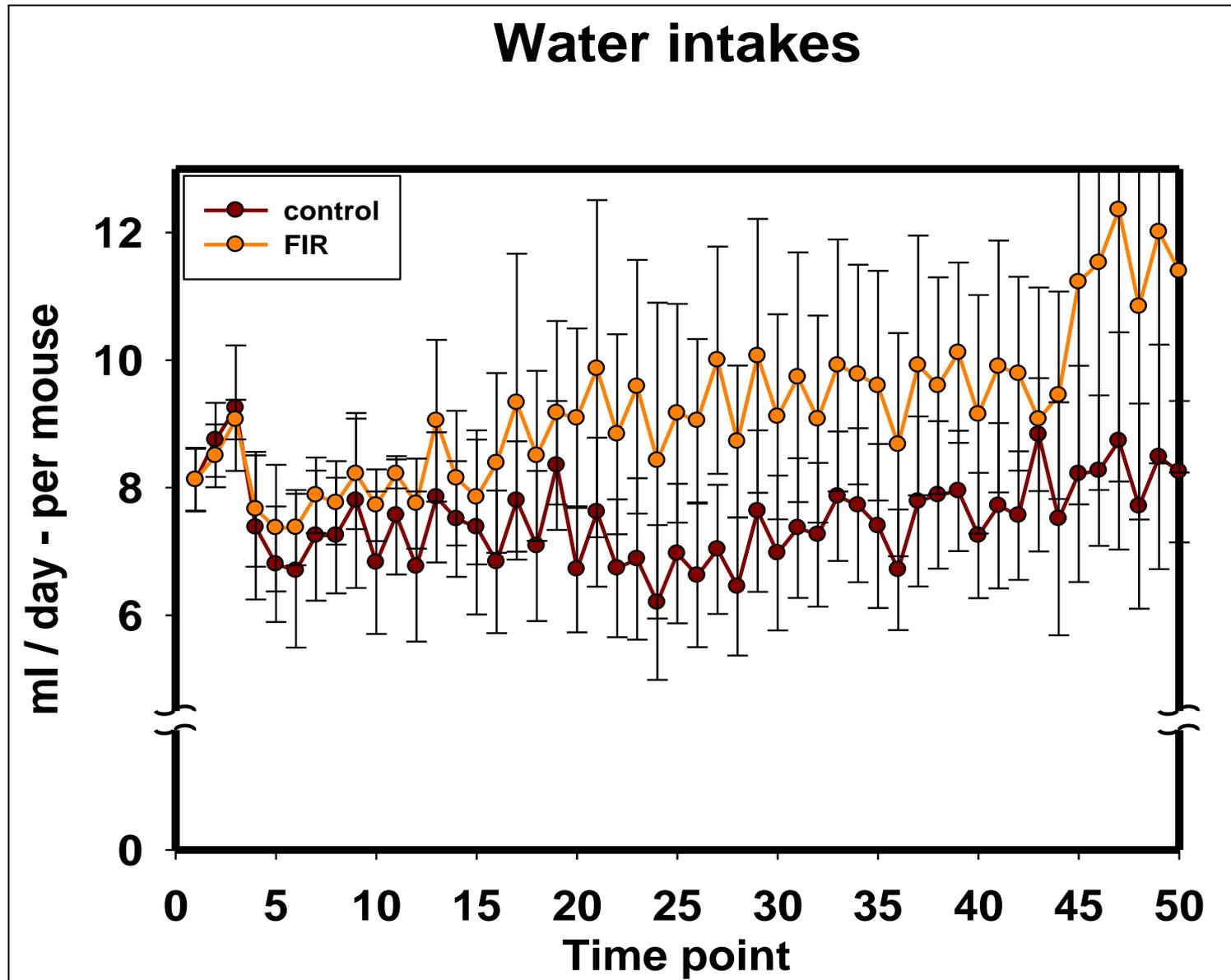


cFIR Group ate more (average)

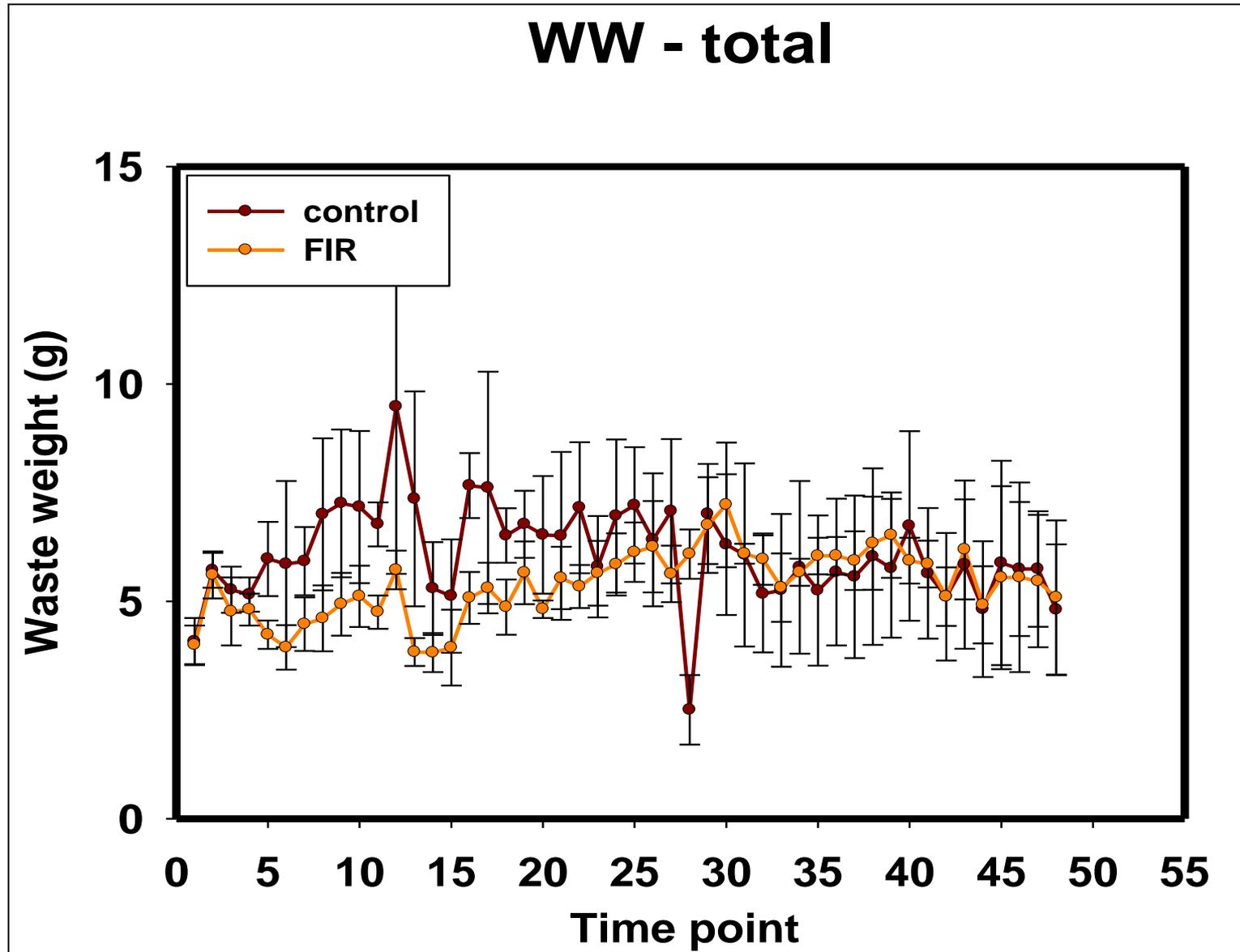
Food intakes



cFIR Group drank more (average)



The amount of waste for cFIR Group was less (average)



4. Bio-energy (Bio-ceramic) helps health

4.1 Micro-circulation mechanism

4.1.1 Promoting blood circulation and increasing body temperature
(Suitable for: long-term bedridden patients or those with diabetes)

4.1.2 Difficulties in wound healing for diabetic patients

4.1.3 A new target for treatment of diabetes : GAPDH
[cFIR can stimulate the production of GAPDH (Enzyme)]

4.2 Prevention of Myocardial Ischemia

4.3 License Book - The plan of implementation of human laboratory studies.

4.4 Rebuilding the immune system after chemotherapy

4.1 Micro-circulation mechanism

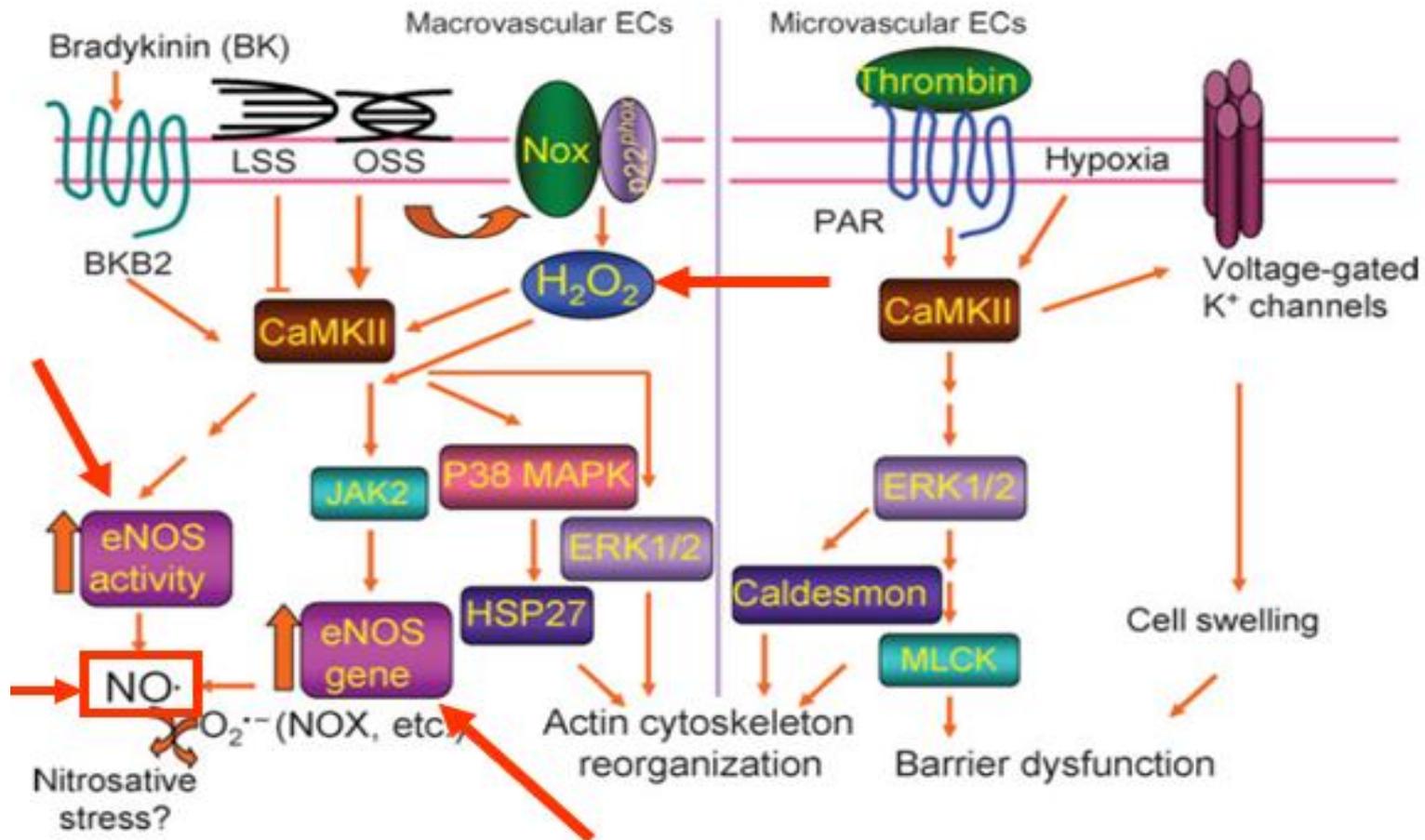
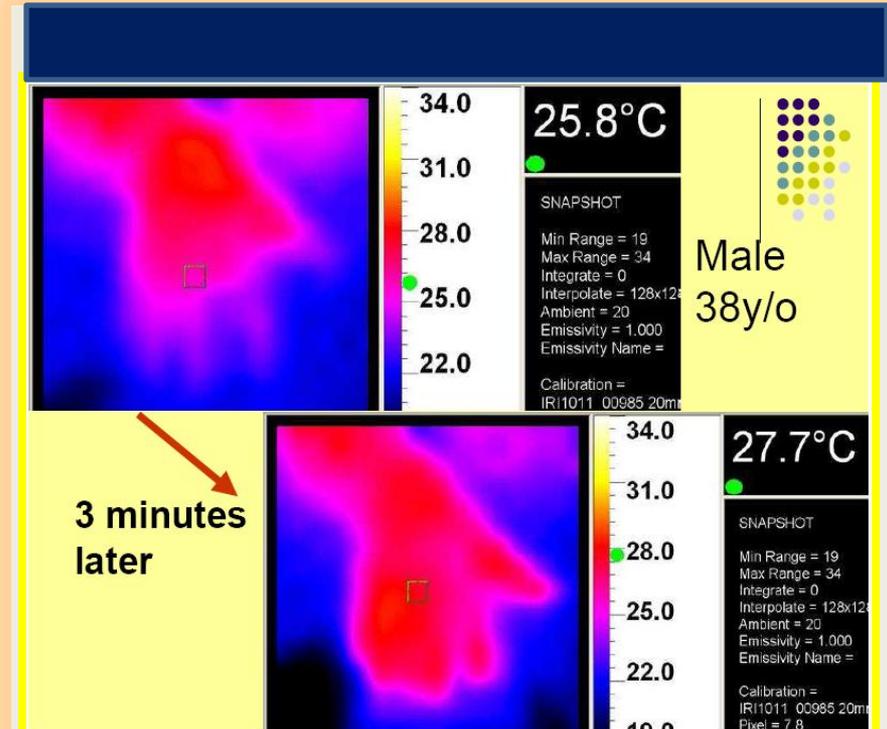
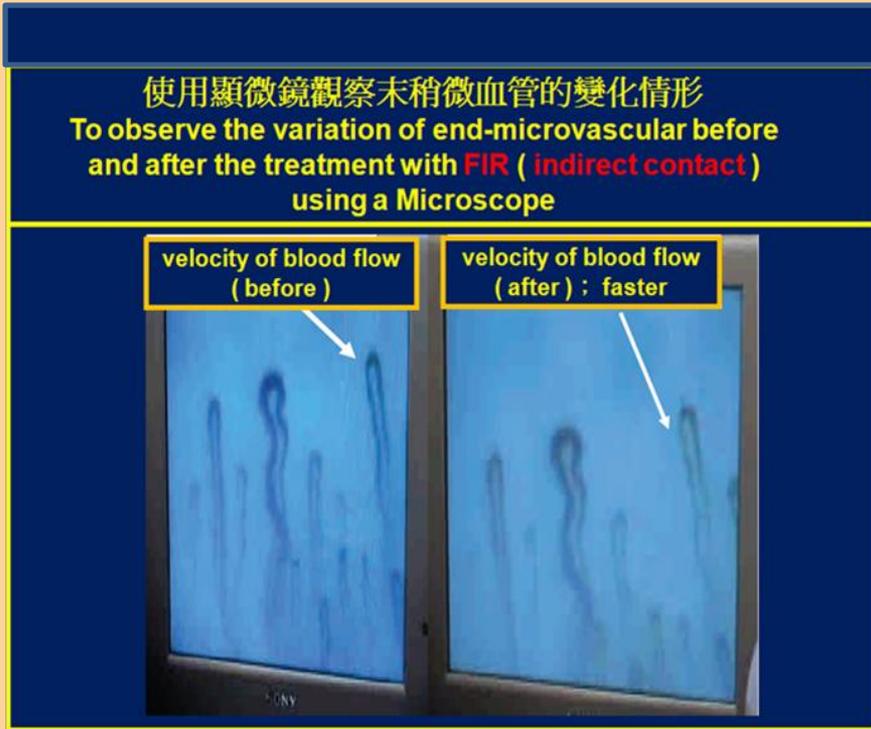


Figure 1 CaM Kinase II signalling in macro- and microvascular endothelial cells. In macrovascular endothelial cells, H_2O_2 induces CaM Kinase II/JAK2-dependent upregulation of eNOS mRNA expression. Bradykinin, via acti-

4.1.1 Promoting blood circulation and increasing body temperature (Suitable for: long-term bedridden patients or those with diabetes)



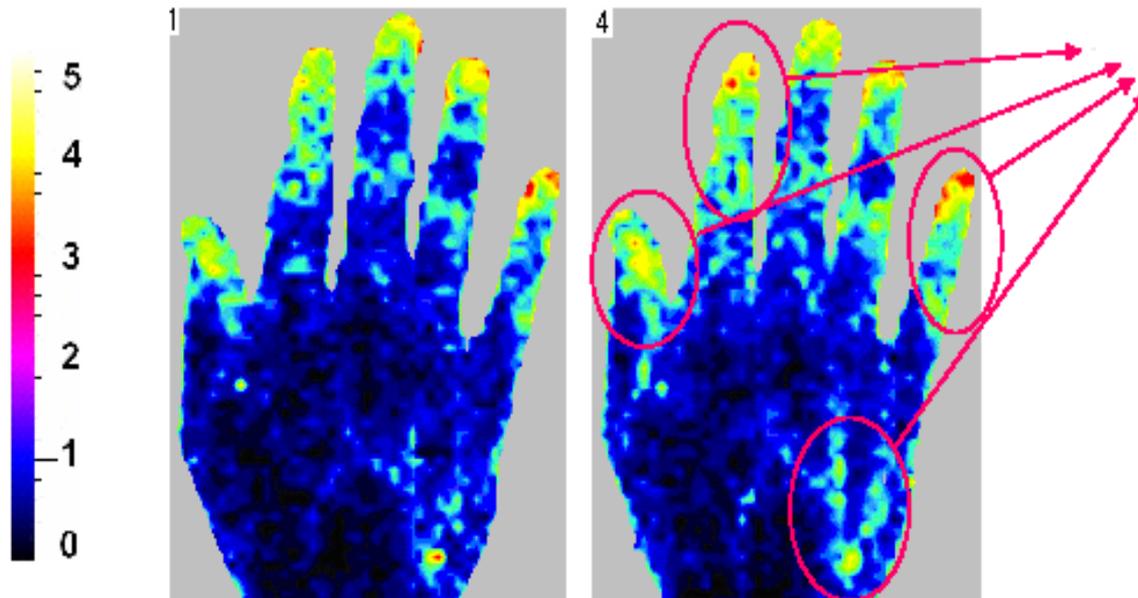
Accelerate the microcirculation :

Flow rate of blood microcirculation of skin epidermis from 340 μ → 450 μ m (3 minutes),
blood flow increased by 10.27% (Imaging equipment of Laser Doppler)

4.1.1 Promoting blood circulation and increasing body temperature (Suitable for: long-term bedridden patients or those with diabetes)

Improvement of blood circulation

➤ Improve body fluid perfusion



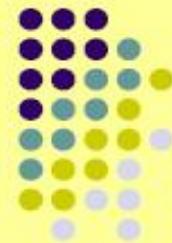
◆ Perfusion
increased 10%
After 5 mins

Laser Doppler

• Tested by PeriFluxSystem 5000

4.1.2 Difficulties in wound healing for diabetic patients

傷口癒合困難



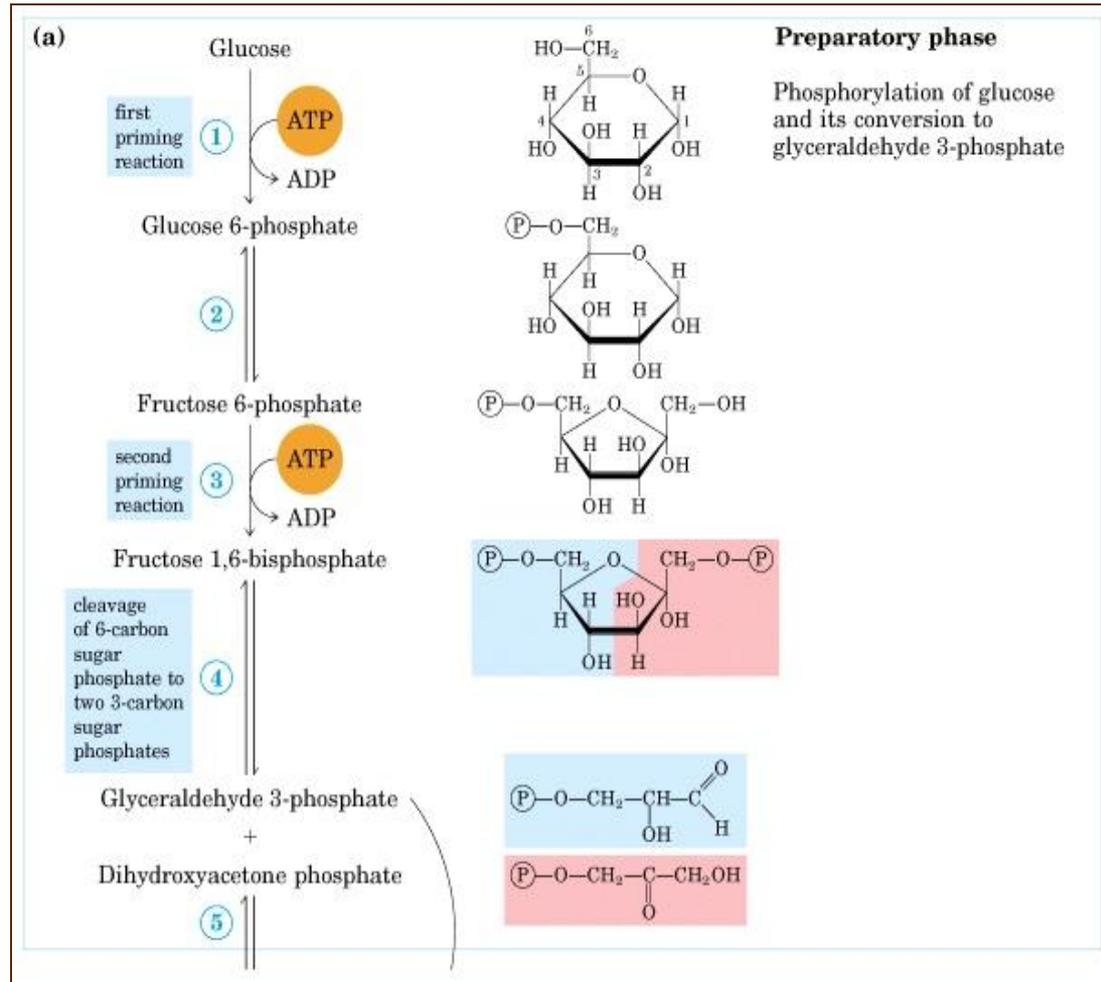
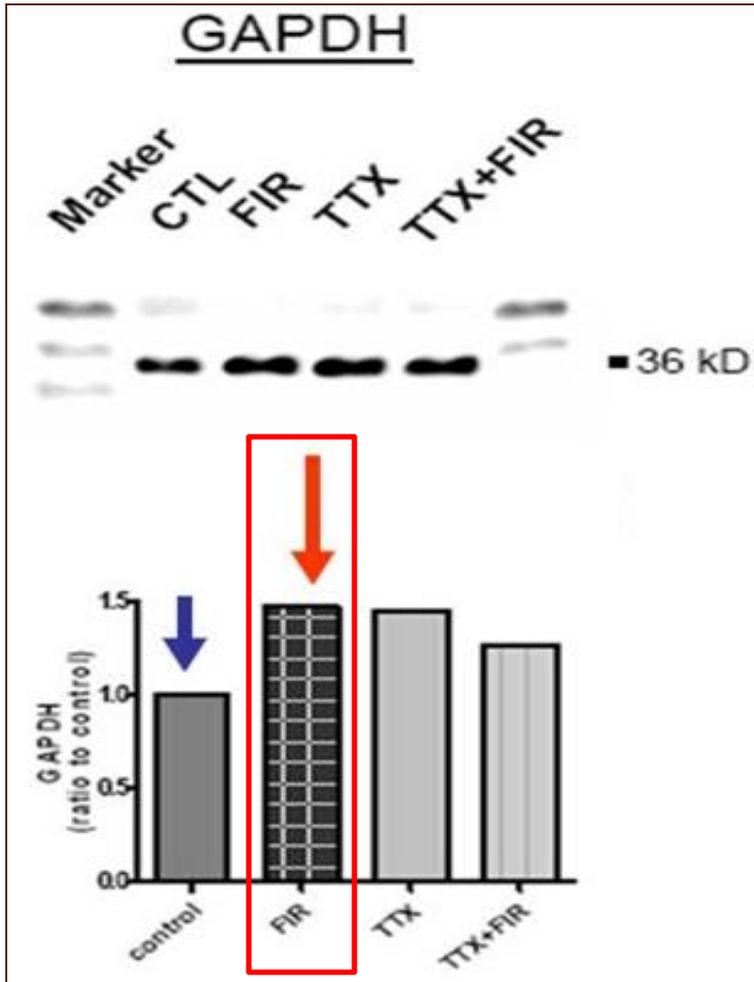
發展方向



4.1.3 A new target for treatment of diabetes : **GAPDH**

[**cFIR can stimulate the production of GAPDH (Enzyme)**]

(The study is published in the latest journal of "Nature Chemical Biology" in December 27, 2006)

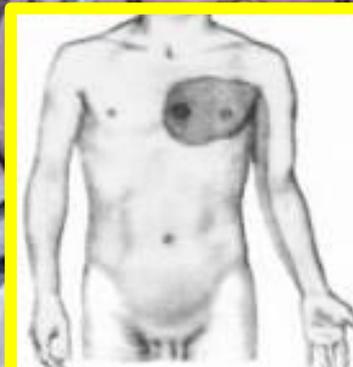


GAPDH (enzymes) : playing an important role for glucose metabolism

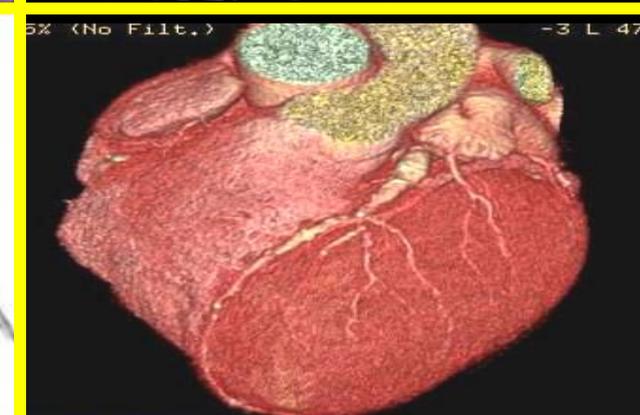
4.2 Prevention of Myocardial Ischemia



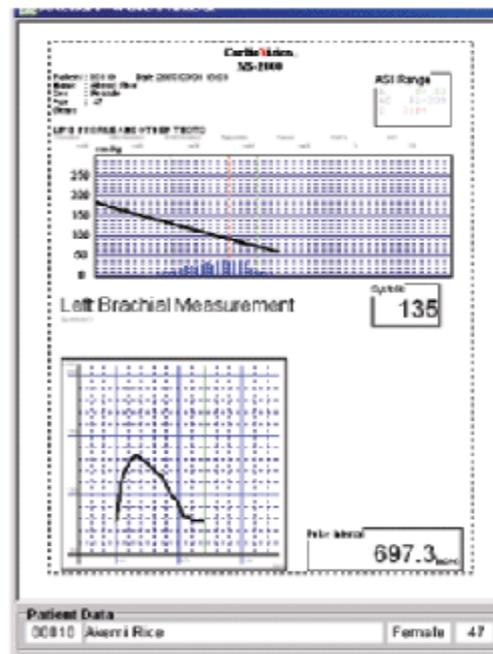
COMMON PRECIPITATING FACTORS IN ANGINA PECTORIS
HEAVY MEAL, EXERTION, COLD, SMOKING



CHARACTERISTIC DISTRIBUTION OF
PAIN IN ANGINA PECTORIS

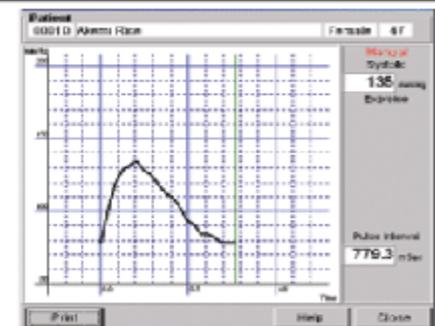


Ankle Brachial Index (ABI) Screen Features



Features of the CardioVision ABI

- Indicate whether ABI test is after "Exercise"
- Shortcut to changing Pressure setting from ABI main screen
- Displays blood pressure pulse wave graph
- Display and Print out Arterial Pulse Wave graph of each limb either by selecting a specific pulse wave spike or on the pulse wave average
- Display the Arterial Pulse Wave Interval in msec



4.3 License Book - The plan of implementation of human laboratory studies.

臺北醫學大學附設醫院臨床(人體)試驗委員會
The Institutional Review Board of Taipei Medical University Hospital
110 台北市信義區吳興街 252 號
252, Wu Hsing Street, Taipei, Taiwan, R.O.C.
TEL: 886-2-27372181-1291 FAX: 886-2-55689008
E-mail: irb@tmuh.org.tw

人體試驗研究計畫執行許可書

發證日期：西元 2008 年 10 月 16 日

計劃名稱：

(中文) 評估使用遠紅外線來治療本態性高血壓病患之短期療效

(英文) Evaluation the short-term efficacy by utilization of Far-Infrared therapy on treatment of patients with essential hypertension.

計畫主持人：黃群耀

計畫書編號：9701

受試者同意書版本：Version:4.0 (Oct-08-2008)

IRB 編號：CRC-02-08-08

上述研究計畫於西元 2008 年 10 月 1 日經本臨床(人體)試驗委員會第 IRB-2008-09-971001 會議審查通過。未經明有效期限至西元 2009 年 9 月 30 日止

後續定期追蹤之程序及要求：

1. 臨床試驗每屆滿一年，臨床(人體)試驗委員會必須重新審查是否繼續進行，請於有效期限到期前二個月繳交期中報告至本會，進行審查。
2. 試驗完成後，應將執行情形及結果於三個月內將結案報告送交本會核備。

臨床(人體)試驗委員會

主任委員



4.4 Rebuilding the immune system after chemotherapy



6. Websites related to bio-energy

Related Websites

<http://leaderculture888.pixnet.net/blog>

http://healthcontrol.com.tw/Message.asp?n_id=121

<http://www.hcg.com.tw/>

Teaching

<http://www.youtube.com/watch?v=PPAopNvSATO>

<http://www.youtube.com/watch?v=KevykvSpW3k>

<http://www.youtube.com/watch?v=69s89brUOpM>

Report Introduction

<http://www.youtube.com/watch?v=X1rA-bIqOzQ>

<http://www.youtube.com/watch?v=gyJEv09bmdQ>

<http://www.youtube.com/watch?v=e8wuZBQ6ZOk>

<http://www.youtube.com/watch?v=qDcgBrthldg>

7. The specifications of Bio-energy yarns

• Bioceramic Product Offerings

- ▶ **PET** S.D. DTY 50D/72F Z-twist
- ▶ **PET** S.D. DTY 75D/72F Z-twist
- ▶ **PET** S.D. DTY 150D/144F Z-twist

- ▶ **PET** S.D 1.5D x 38 mm Fiber
- ▶ **PET** 65% / C 35% Ne 30/1
- ▶ **PET** 35% / C 65% Ne 20/1 , 30/1 , 36/1 , 45/1 , 60/1

- ▶ **Rayon** 1.25D x 38 mm Fiber
- ▶ **Rayon** 35% / C 65% Ne 30/1 , 40/1

- ▶ **Nylon 6** S.D. DTY 70D/48F Z-twist & S-twist