

Fighting Cancer – Gorter Model

战胜癌症—戈特模式

University of California San Francisco
Medical School, USA (1983 - 2012)
University Witten/Herdecke, Germany
(1993 - present)

University of the Western Cape, Cape
Town, South-Africa (1994 - 2006)
University of St Petersburg, Post
Graduate Training, Russia (1993 -
present)

San Francisco State University, USA
(1983 – present)

Freie Universität Berlin , Germany (1993 -
2001)

Director Medical Center Cologne,
Germany (2000 - 2018)

加州大学旧金山分校，美国（1983–2012）
维滕/黑尔德克大学，德国（1993年–至今）
西开普大学，开普顿，南非（1994–2006）
圣彼得堡大学，研究生培训，俄罗斯（1993 – 至今）
旧金山州立大学，美国（1983–至今）
柏林自由大学，德国（1993–2001）
科隆医疗中心主任，德国（2000–2018）



Robert Gorter, MD, PhD.
罗伯特 戈特, 医学博士, 哲学博士

[美] 罗伯特·戈特 埃里克·佩珀 著 黄琳 李政 陈芳芳 张楚武 译

FIGHTING CANCER

战胜癌症

一种无毒副作用的癌症治疗法



安全
有效
无毒

- ★ 晚期实体瘤患者使用后，
5年存活率高达60%
- ★ 三步疗法恢复免疫力，截然不同全新体验
- ★ CNN、欧洲肿瘤和免疫协会一致信赖

广西科学技术出版社

"This book provides important information and options that empower individuals to make wise therapeutic decisions when faced with the dreaded diagnosis of cancer."

—LARRY DOSSEY, MD, author of *Healing Words* and *The Power of Premonitions*

Fighting CANCER

A Nontoxic Approach to Treatment

Discover a powerful system that involves no chemotherapy

Gain new insight into cancer and cancer therapies

Learn strategies to boost your immune system naturally



ROBERT GORTER, MD, PhD
and ERIK PEPER, PhD

Gorter Model 戈特模式

- Fever-range, total body hyperthermia 全身热疗
- Localized hyperthermia 局部热疗
- Vaccination with dendritic cells 接种树突细胞
- Immune restoration 免疫修复

“Research has made it clear that fever is not the enemy; in general, it is the friend of healing.”

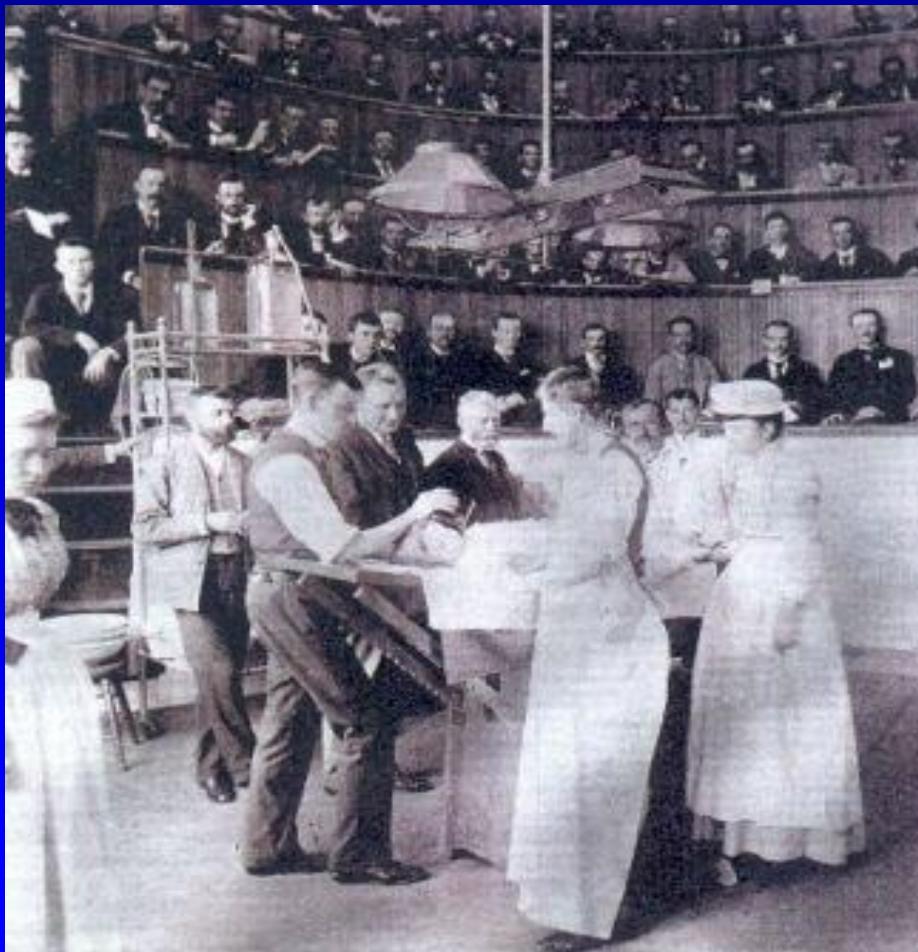
研究已经证明：发热不是敌人，而是朋友，发热能够帮助治疗疾病。





Prof. Coley instructing young medical doctors (around 1870)

Coley博士正在指导年轻医生（1870年左右）



Circadian Rhythm of Core Body Temperature-1

核心体温的生理节律——1

- Healthy subjects studied by us exhibit a circadian rhythm in body core temperature of about 0.6° Celsius amplitude (range 36.8 °C am – 37,4 °Cpm).
我们研究的健康课题显示出核心体温的生理节律，幅度大概在0.6摄氏度
(范围是早上36.8°C - 傍晚37.4°C)
- 92% of all examined cancer patients in our clinic have lost their circadian rhythm and have lower core body temperature (median 36,2°C; range:34,9 – 36,6°C)
在我们诊所接受检查的92%的癌症患者丧失生理节律并且核心体温相对较低
(中位数36.2°C; 范围34.9 - 36.6°C)

Circadian Rhythm of Core Body Temperature-2

核心体温的生理节律——2

- Study design: comparative, prospective, longitudinal study in cancer patients with solid tumors over 6 months (N=68); each patient was his own control, and is compared to non-smoking healthy individuals (N= 28).

研究设计：对患病6个月以上的实体肿瘤癌症患者（N=68）进行比较性的、前瞻性的纵向研究；每个患者是自身的对照，并且与不吸烟的健康个体（N=28）进行比较。

- Patients kept dairy of early morning, late afternoon and bed time rectal temperature. Baseline 4 weeks. Diaries were collected bi-weekly.

患者记录每天清晨、傍晚和就寝时的直肠温度。基线为四周。每两周收集记录。

- Initiation therapy with *Viscum album L.* and „fever-range, total-body“ hyperthermia. Observation during 24 weeks.

最初的治疗是白槲寄生和“发烧范围的全身”热疗。观察24周。

Circadian Rhythm of Core Body Temperature-3

核心体温的生理节律——3

- Patients were instructed to self-administer s.c. 1 ml *Viscum album L.* twice a week early morning.
指导患者每周两次在清晨时进行皮下1ml白槲寄生自我给药。
- Patients received once per four weeks a session of „fever-range, total-body“ hyper-thermia with temperatures at the zenith of $>39.0^{\circ}\text{ C}$ but $<40.3^{\circ}\text{ C}$.
患者每四周接受一次“发热范围的全身”热疗，温度最高高于39摄氏度，但小于40.3摄氏度。
- Women 64% men 36% age 38–68 years.
- Karnofsky score 60-100.

女性占64%，男性占36%，年龄38-68.

卡诺夫斯基评分60-100.

Circadian Rhythm of Core Body Temperature-4

核心体温的生理节律——4

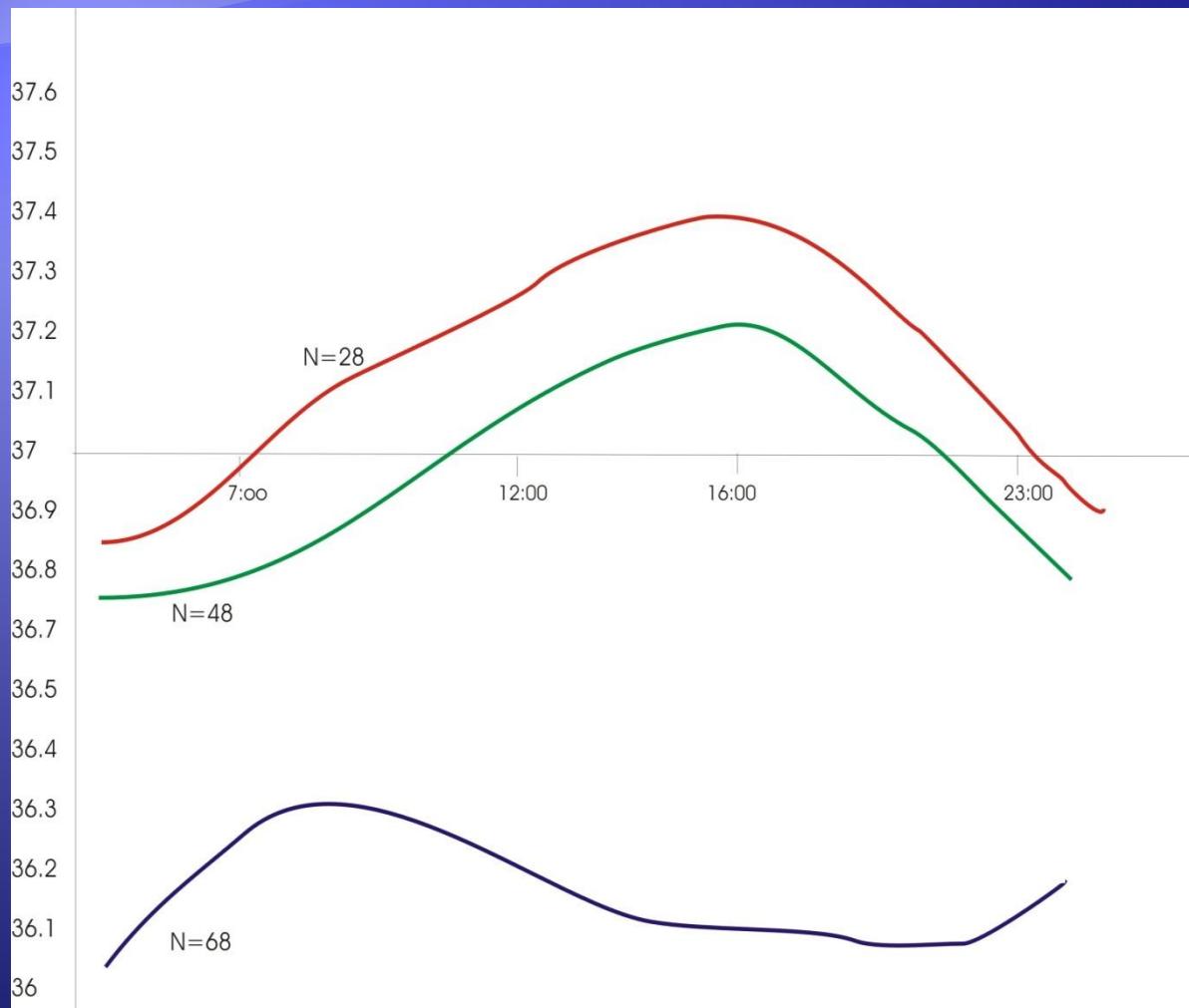
Findings:发现：

- 1) cancer patients have low early morning core body temperature (median 36,1° C) and no obvious circadian rhythm
癌症患者清晨的核心体温较低（中位数36.1°C）并且没有明显的生理节律。
- 2) 48 patients (70%) showed a more or less normal temperature curve with some return of circadian rhythm compared to base-line after 16 - 24 weeks.
16-24周后，与基线对比，48名患者（70%）显示出或多或少的体温曲线，生理节律稍有恢复。
- 3) return of circadian rhythm seems to be indicator of clinical outcome (improved life expectancy and quality of life).

生理节律的恢复看起来是临床结果的指标（寿命延长，生活质量改善）。

Circadian Rhythm of Core Body Temperature-5

核心体温的生理节律——5



Circadian Rhythm of Core Body Temperature-6

核心体温的生理节律——6

Remarks: 附注

- all cancer patients took some form of pain medication, including NSAIs which suppress fever. Interestingly, the circadian rhythm improved despite the NSAIs although, as most patients did better, overall less pain medication was taken.

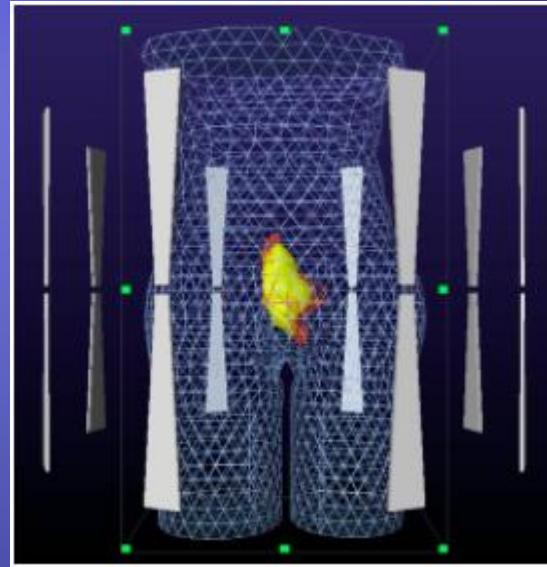
- ~~Seemingly NSAIs suppress fever but do not suppress significantly circadian rhythm of core body temperature in the adult oncological patient.~~

看起来，虽然NSAIs抑制发烧，但是没有明显抑制成年肿瘤患者的核心体温节律。

Local Hyperthermia (LHT)

局部热疗 (LHT)

Mode of Action 作用方式



体内局部热疗在温度达到 39°C 和 44°C 之间时会引发选择性的肿瘤破坏。

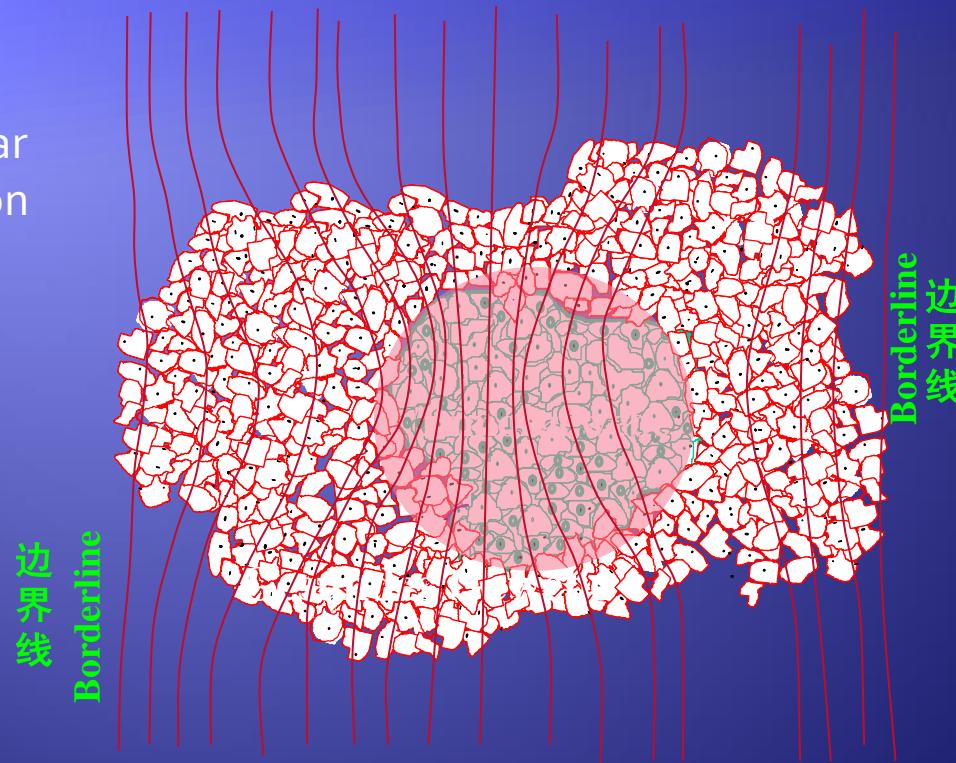
LHT *In vivo* causes selective tumor-destructive effect at temperatures between 39°C and 44°C .

Local Hyperthermia (LHT)

局部热疗 (LHT)

Leads to anaerobic metabolism with massive intra-cellular lactic acid production

引起无氧代谢，产生大量胞内乳酸



Self-Focusation in Tumor Cells...
肿瘤细胞内自行聚集

Dendritic cells

树突细胞

树突细胞是抗原递呈细胞：其处理抗原物质并将其呈递到其他细胞表层。

一旦出现恶性细胞，树突细胞一方面扮演“警察”的角色，另一方面扮演先天性免疫和获得性免疫之间的信使。

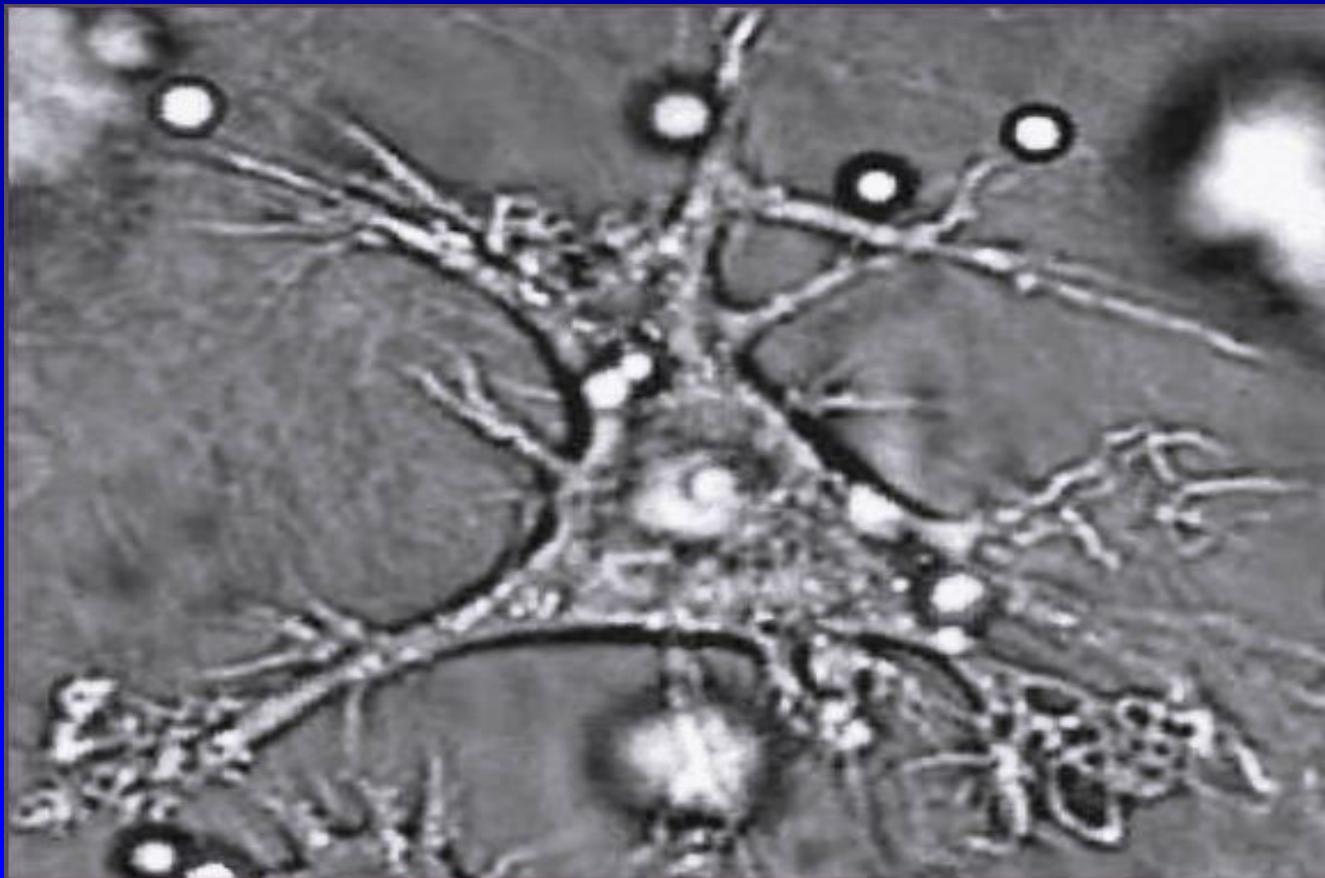
树突细胞尤其会存在于与外界接触的组织中，如皮肤和肠粘膜、肺。

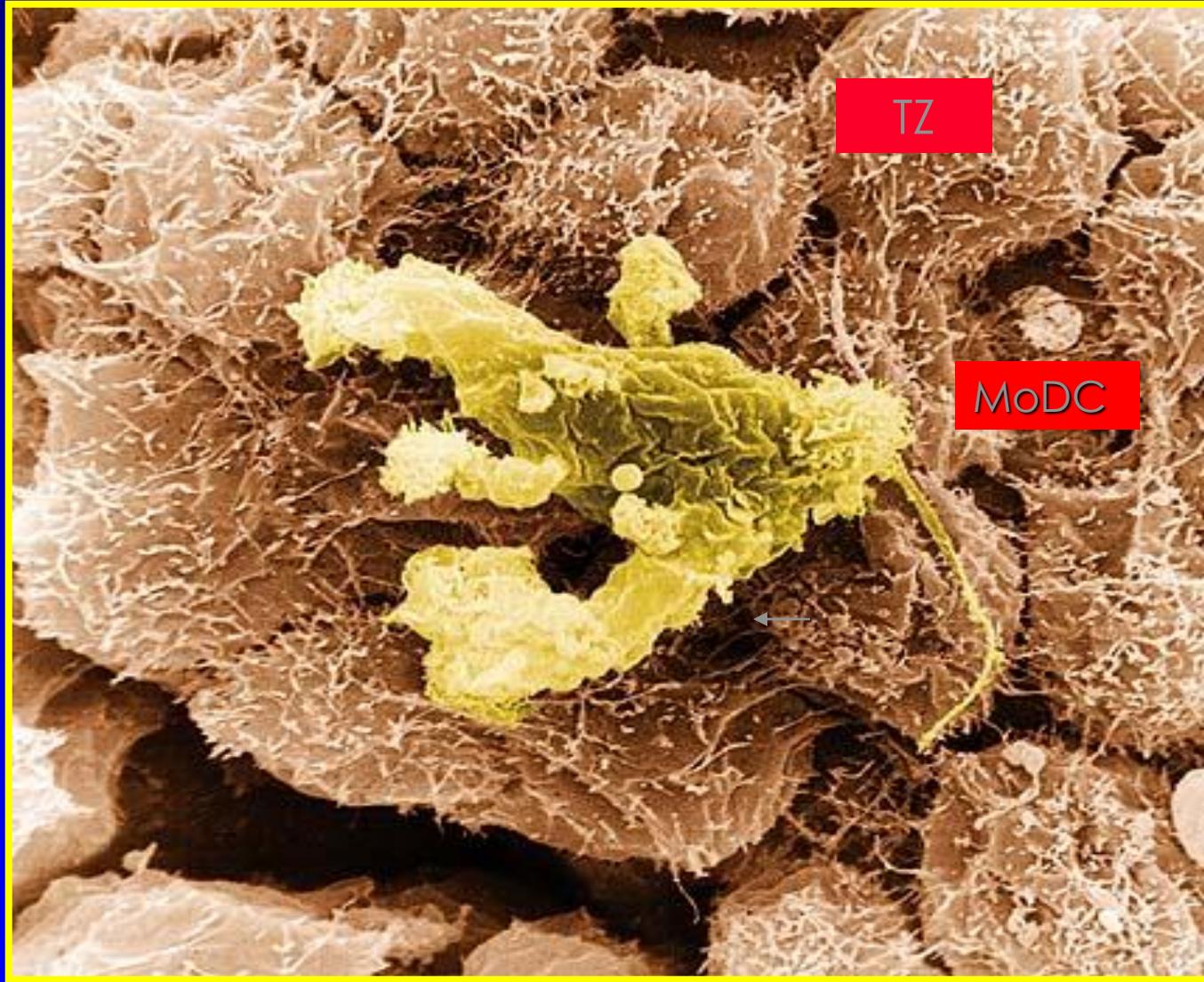
树突细胞通过所有内部器官移动。

- DCs are immune cells which process antigen material and present it on the surface to other cells: they are antigen presenting cells.
- DCs act as “policemen” on one hand and as messengers between the innate and adaptive immunity in case of malignant cells.
- DCs are especially present in tissues in contact with outer world, like skin and intestinal mucosa, lung.
- DCs migrate through all inner organs

Mature Dendritic Cell

成熟的树突细胞（人类）





一个树突细胞，癌细胞抗原取样
a dendritic cell, sampling antigens of a cancer cell

Dendritic Cells

- 1) Dendritic cells (DC) are manufactured from peripheral blood monocytes;
树突细胞是由外周血单核细胞制造的
- 2) 80 – 100 ml blood draw at a time: simple and no burden to the patient;
每次抽取80–100毫升血液，操作简单且对患者没有负担
- 3) Always autologous (no risks of contamination);
树突细胞是自体的（无污染风险）
- 4) Repeated harvesting of monocytes leads to improved DC function;
重复获取单核细胞可以增强树突细胞功效
- 5) At MCC vaccination is performed at six months 2 to 4 weeks intervals;
then every six months during three years; then once a year.....
在德国科隆医疗中心接种树突细胞
半年内，每隔2至4周接种一次；三年内每六个月接种一次；三年后一年一次

Nobel Price for Medicine 2011

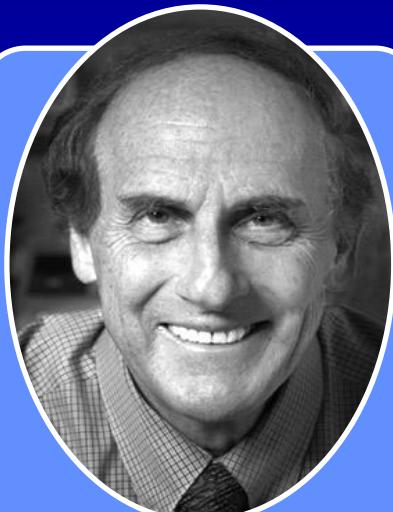
2011年诺贝尔医学奖



Bruce A.
Beutler



Jules A.
Hoffmann



Ralph M.
Steinman



Introduction

- ◆ Glioma cells are poor antigen-presenting cells for the immune system because of their down regulation of stimulatory molecules required to activate the immune system (“escape mechanism”).

胶质瘤细胞对免疫系统来说是不良的抗原呈递细胞，因为胶质瘤细胞会下调能够激活免疫系统的刺激分子，“逃避机制”。

- ◆ DCs are capable of inducing antitumor responses.

树突细胞具有抗肿瘤的作用。

- ◆ Pulsing of DCs *in vitro* with (synthetic) peptides, tumor RNA, tumor lysates and fusing DCs and tumor cells as a vaccine *may enhance the clinical efficacy of vaccinations.*

通过简单手术结合定期树突状细胞接种，对复发性GBM(多形性胶质母细胞瘤)患者的治疗：

Surgery and pulsed Dendritic Cells in Patients with relapsed GBM: Observational study

De Vleeschouwer, Br J Cancer 2004 November 1; 91(9): 1656-1662

1) 12 patients with relapsing GBM (6 female; median age 32 (range 11-78 yrs); all patients post craniotomy)

2) Harvesting of monocytes from one time PBMC leukaphoresis

3) Vaccinations with loaded DC: 3 to 6 times

4) Vaccination intradermal in upper arm

1) 12例复发性多形性胶质母细胞瘤（GBM）患者（女性6例，中位数年龄32岁（范围11~78岁）；均为颅脑术后患者）

2) 取外周血，然后去除白细胞，获得单核细胞（PBMC）

3) 接种树突细胞疫苗：3至6次

4) 上臂真皮内注射疫苗

Results:

1) 17% had overall survival of 36 months

2) No complete remission observed

1) 17%的患者达到了3年生存期

2) 没有完全缓解

**OBSERVATIONAL STUDY IN PATIENTS WITH RECURRENT GRADE IV
GLIOBLASTOMA MULTIFORME WHO WERE TREATED WITH DENDRITIC
CELLS
IN COMBINATION WITH LOCAL HYPERTERMIA (CELSIUS 42+) AT THE
MEDICAL CENTER COLOGNE (MCC) FROM 01/2003 TO 03/2010**

2003年1月至2010年3月在科隆医学中心（MCC）用接种树突细胞和局部热疗（42–44°C）相结合治疗复发性IV期多形性胶质母细胞瘤患者的观察性研究

Materials and Methods-1

材料和方法-1

- ◆ Observational Study. 观察研究
- ◆ 140 patients with primary brain tumor screened.
对140例原发性脑肿瘤患者筛查
- ◆ 57 % proven relapse GBM stage IV by histology.
57%的患者患有四期复发多形性胶质母细胞瘤(GBM)
- ◆ Duration January 2003 through March 2010.
2003年1月至2010年3月
- ◆ All patients were treated at the Medical Center
Cologne (MCC) in Germany
所有患者均在德国科隆医疗中心(MCC)接受治疗。
- ◆ Main marker for possible efficacy by serial
magnetic resonance imaging (MRI) and frequent
serum S100.
通过磁共振成像(MRI)和常见血清S100测定主要标志物，寻求可能的有效性。

Material and Methods-2

材料和方法-2

- ◆ Patients (N=24) received at least three vaccinations with naïve (*non-pulsed*) DCs at biweekly to monthly intervals. 患者 (N = 24) 每两周至每月至少接受三次天然DC细胞接种。
- ◆ Application was performed intravenously and intra-cutaneously. 静脉内和皮下注射。
- ◆ For each DC vaccine a simple blood draw of 100ml was performed and peripheral mononuclear cells (PBMCs) were then separated using Ficoll-Hypaque density gradient centrifugation.
- ◆ At least 24 sessions LHT .
至少24次LHT (42+摄氏度) 。

对于每种DC细胞，进行100ml的简单抽血，然后使用Ficoll-Hypaque (Sigma, 东京) 密度梯度离心分离外周单核细胞 (PBMC) 。

Results-3

结果-3

11/24(46 %) 患者完全缓解，(4到12个月内)达到，由第三方MRI 和神经性评估记录

最长完全缓解时间
196个月至今

6/24 (25%) 部分缓解 (>50%肿瘤负荷减少)

到目前为止，一旦完全缓解，24个月后（吸烟者）只有一次复发记录。

48个月中数生存率
58%

- ◆ Complete remission in 11/24 (46%) patients and achieved (within 4 to 12 months) documented by frequent third party MRI's and neurological evaluations
- ◆ Longest duration of complete remission 196 months (16 years) to date
- ◆ Partial remission (>50% reduction in tumor load) in 6/24 (25%)
- ◆ So far, once in complete remission, only one recurrence has been documented after 24 months (smoker).
- ◆ Median survival rate at 62 months: 58%

Results-4

结果-4

- ◆ Improvement MRI strongly correlated with decline of elevated serum S100

MRI改善与升高血清S100的下降密切相关

Results-5

结果-5

“毒性”是轻微的流感样症状，8/24 (33%) 有WHO 1级症状（温度 > 38°C）和3/24 (12%) 有一些恶心和呕吐 (<4 小时)。

“Toxicity” was mild flu-like symptoms and 8/24 (33%) had WHO Grade 1 symptoms (temp. >38° C) and 3/24 (12%) experienced some nausea and vomiting (< 4 hours).

LHT的耐受性非常好，0%的投诉或副作用。

◆ LHT was tolerated extremely well with 0% complaints or side effects.

DC & Hyperthermia in Patients with Advanced Metastatic Breast Cancer with no further standard therapeutic options (Stage IV)

晚期转移性乳腺癌

Total: n = 292

Follow-up over 74 months: n = 251

partial responders (>50% remission by
scan & tumor marker): 62%

complete responders (100% remission): 16%

39 lost for follow-up and 24 died from other reasons than breast cancer

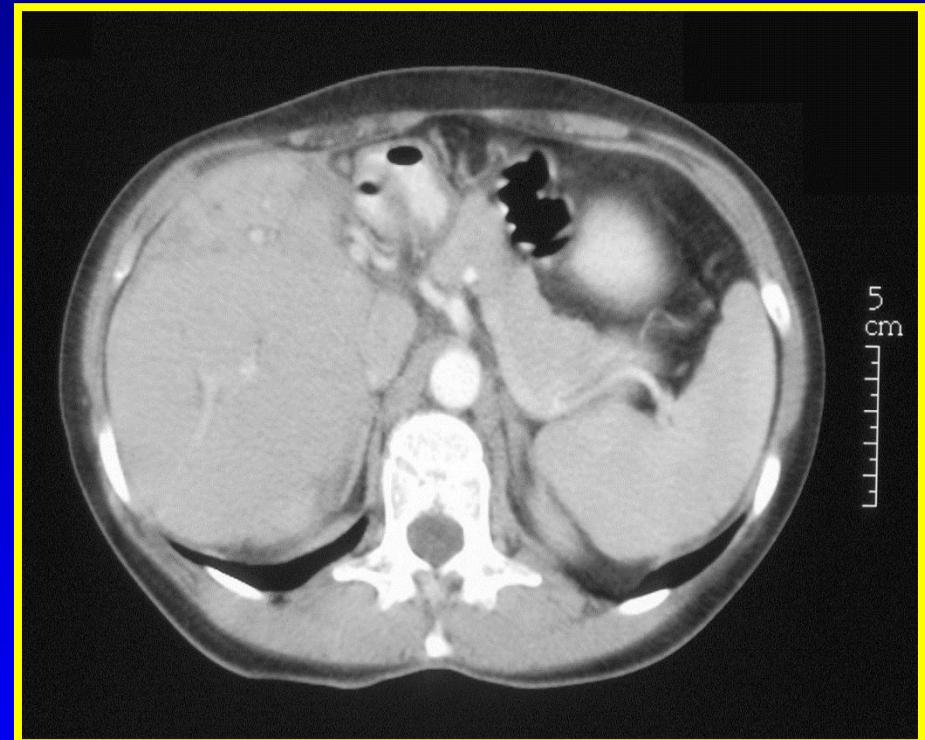
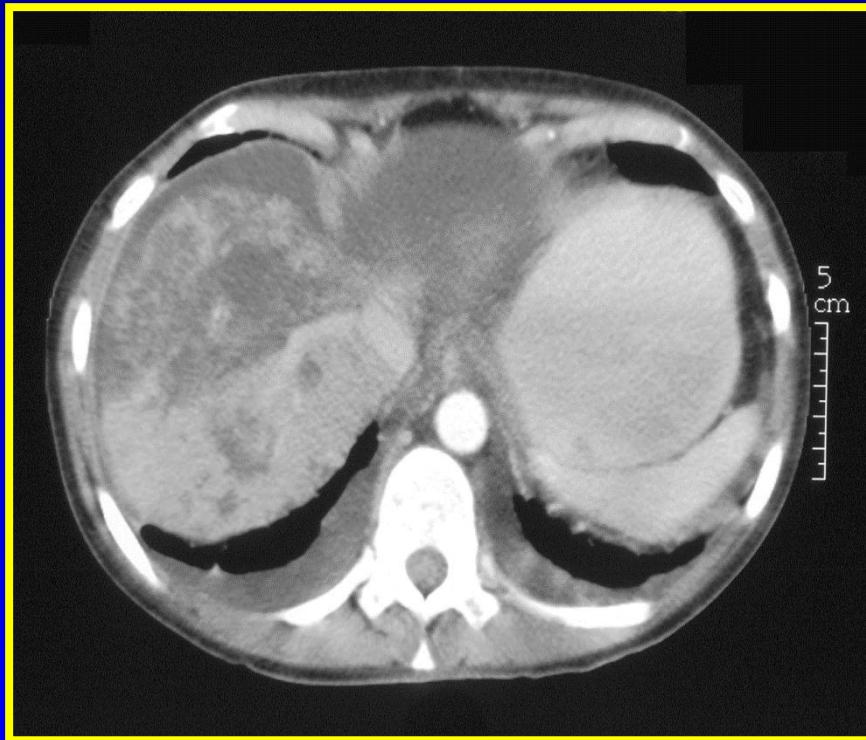
Case Report 1



Pat. S.E. 肝、肺、脑和骨转移乳腺癌

Pat. S.E. with metastatic breast cancer in liver, lungs, brain and bone

Case Report 2



Pat. D.H. with metastatic breast cancer in liver, lungs and bone
Pat. D.H. 肝、肺和骨转移乳腺癌

Acknowledgement

- ◆ Special acknowledgement to our medical staff Eloy Pulido MD, Daniela Hudi MD, Gina Atef MD, Lothar Kaiser PhD, Montassar Cherif MD, and complete MCC Team in Germany, Egypt and Turkey.

特别感谢我们的医务人员Eloy Pulido医学博士, Daniela Hudi医学博士, Gina Atef医学博士, Lothar Kaiser哲学博士, Montassar Cherif医学博士以及德国、埃及和土耳其全部MCC团队。

科隆医疗中心

Medical Center Cologne
at Eduardus Hospital
Custodisstrasse 3-17
50679 Cologne, Germany

Medical Center Cologne
Sachsenring 83
50677 Cologne, Germany

Medical Center Cologne
Cairo/Nasr City, Egypt
Istanbul, Turkey

www.medical-center-cologne.com