Centralità della persona, sinergia dei saperi, omeopatia

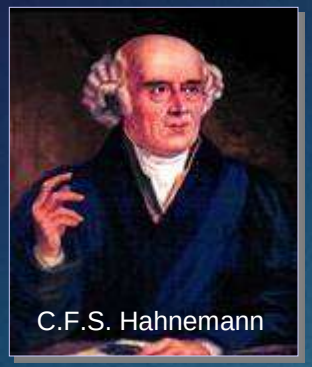
BELLADONNA ONLUS
Fondazione per la divulgazione della scienza omeopatica

Venerdì 06 giugno 2014
14.30-19.30
Sabato 07 giugno 2014
9.00-13.00; 14.30-19.30

Milano - Società Umanitaria

La Similitudine come regola di natura

Paolo Bellavite, Marta Marzotto, Debora Olioso, Elisabetta Moratti
Università di Verona


C.F.S. Hahnemann

LA «LEGGE TERAPEUTICA»

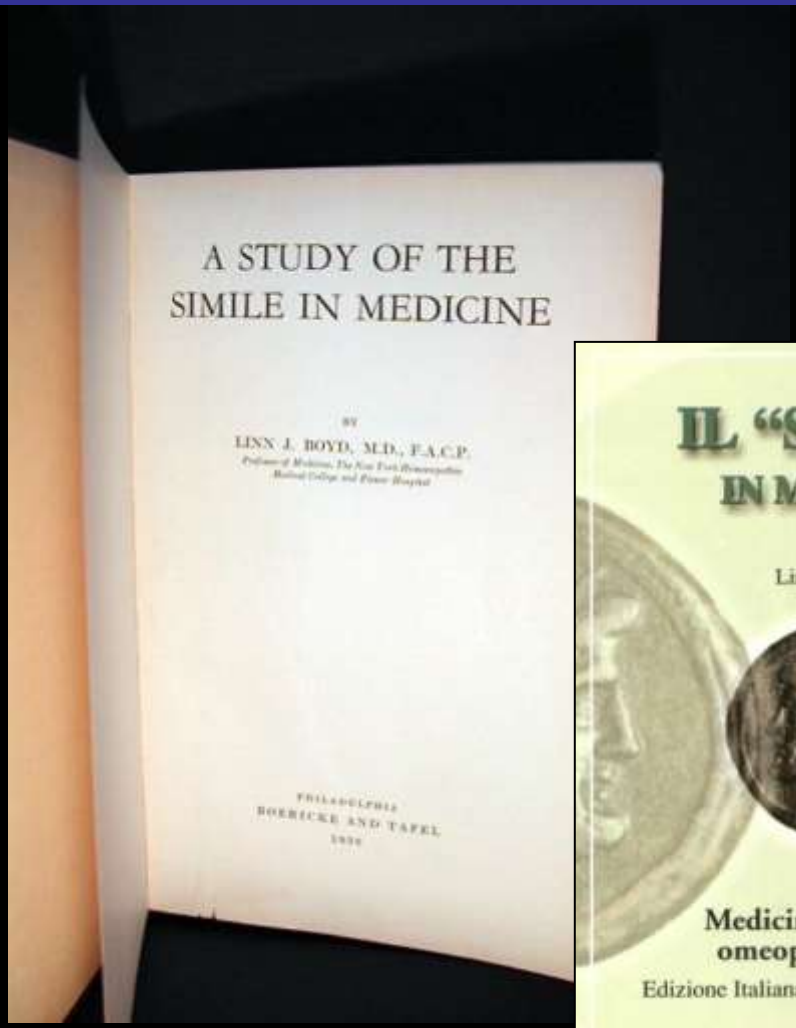
"La grande, la sola legge terapeutica della natura: cura per mezzo della similitudine dei sintomi!"

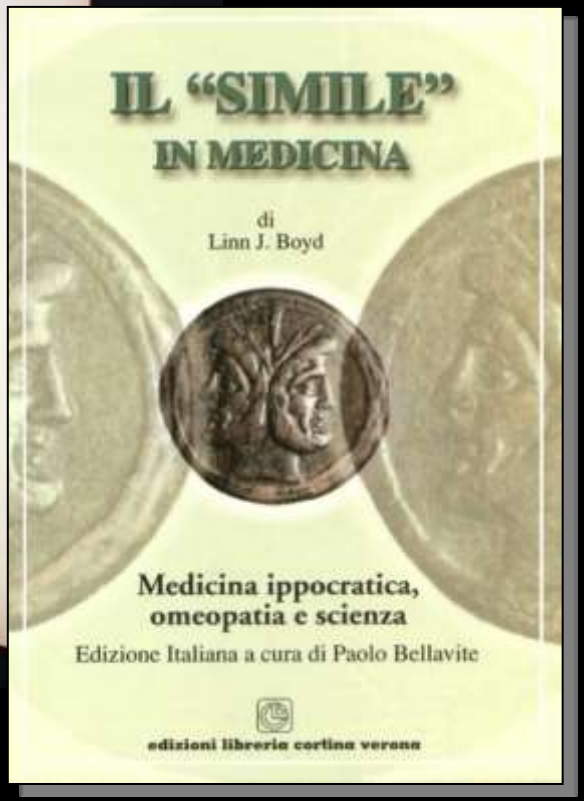
ORGANON, PAR. 7

A STUDY OF THE SIMILE IN MEDICINE

Boericke &Tafel, Philadelphia 1936

Linn John Boyd
(1895-1975)
Professor of Medicine





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Centralità
della persona,
sinergia
dei saperi,
omeopatia

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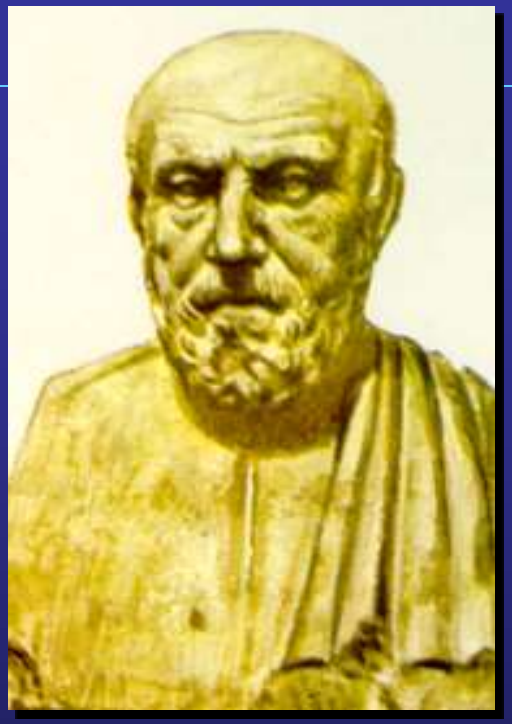
- L e regole della Natura e la complessità fondamentale della vita
- Modello a rete: omeodinamica, omeopatologia, omeoterapia
- Il Simile nello studio sperimentale

LA «PHYSIS» DI IPPOCRATE

“Η φυσις αυτοματη ταυτα επισταται πονεει αναστηναι, κινευμενος πονεει αναπαυσασθαι, και αλλα τοιαυτα εχει η φυσις ιητρικης”.

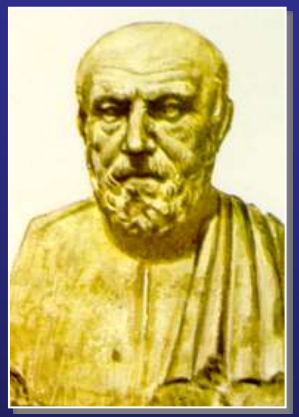
“La ‘physis’ fa tutto ciò di per sé. Se uno siede e sente un dolore, la ‘physis’ lo induce ad alzarsi. Se uno cammina e sente un dolore, essa lo induce a fermarsi. Altre cose come queste sono dovute alla physis’.

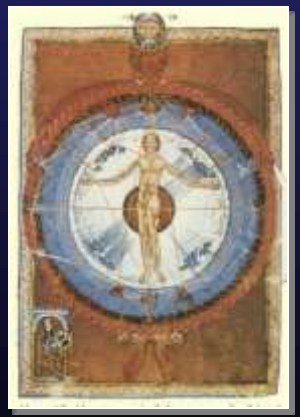


Ippocrate
(460-377 B.C.)

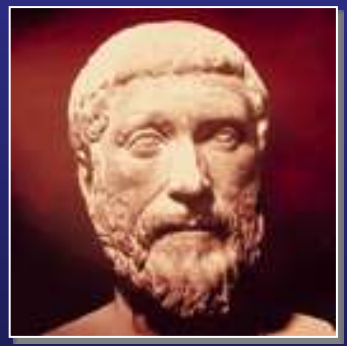
“Sulla dieta”, da Littre’s Oeuvres Completes d’Hippocrates, Paris, 1839, VI, 490, 15.

LA “PHYSIS”





- “*Ch’i*” degli antichi cinesi
- “*vis medicatrix naturae*” di Ippocrate
- “*archèus*” di Paracelso e di Helmont
- “*anima*” di Eraclito, Stahl e di altri
- “*viriditas*” di Ildegarda
- “*forza vitale*” di Hahnemann

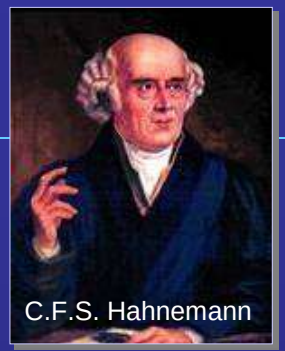


«PHYSIS», «FORZA VITALE», «OMEODINAMICA»

Mantenimento (e re-integrazione)
dello stato di salute

=

Controllo dinamico
delle variabili fisiologiche,
della integrità delle strutture ai vari livelli
e della identità biologica


C.F.S. Hahnemann

"DYNAMIS" E MALATTIA SEC: HAHNEMANN

"Ogni malattia (non di spettanza della chirurgia) consiste in una perturbazione patologica dinamica della nostra forza vitale"
(Organon,1810, par. 29)

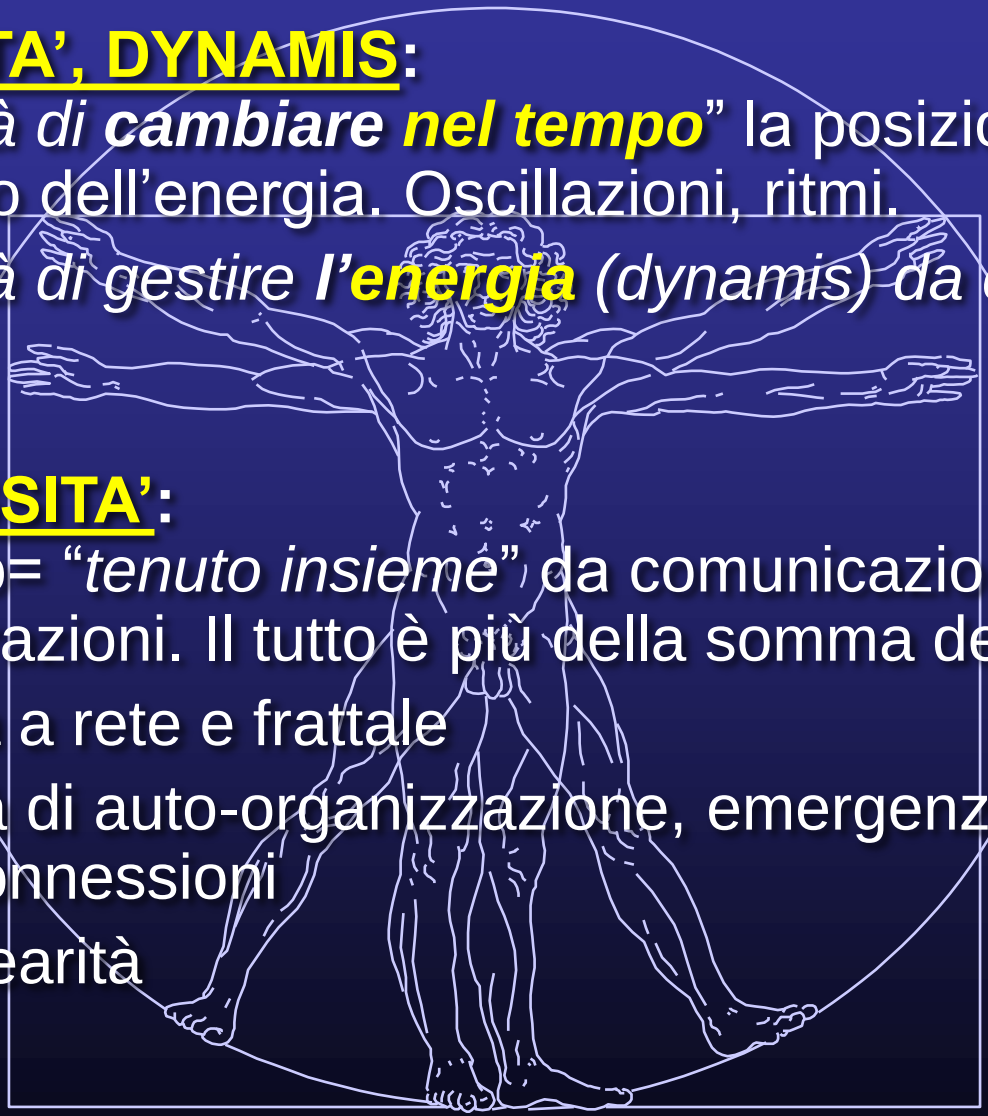
"La restitutio ad integrum del principio vitale presuppone necessariamente il ritorno alla salute di tutto l'organismo"
(Organon,1810, par. 12)

PAROLE-CHIAVE DELL'OMEODINAMICA

DINAMICITA', DYNAMIS:

a) "*capacità di* ***cambiare*** ***nel tempo***" la posizione e l'attività nello spazio dell'energia. Oscillazioni, ritmi.

b) "*capacità di gestire* ***l'energia*** *(dynamis) da cui il sistema dipende*"



COMPLESSITA':

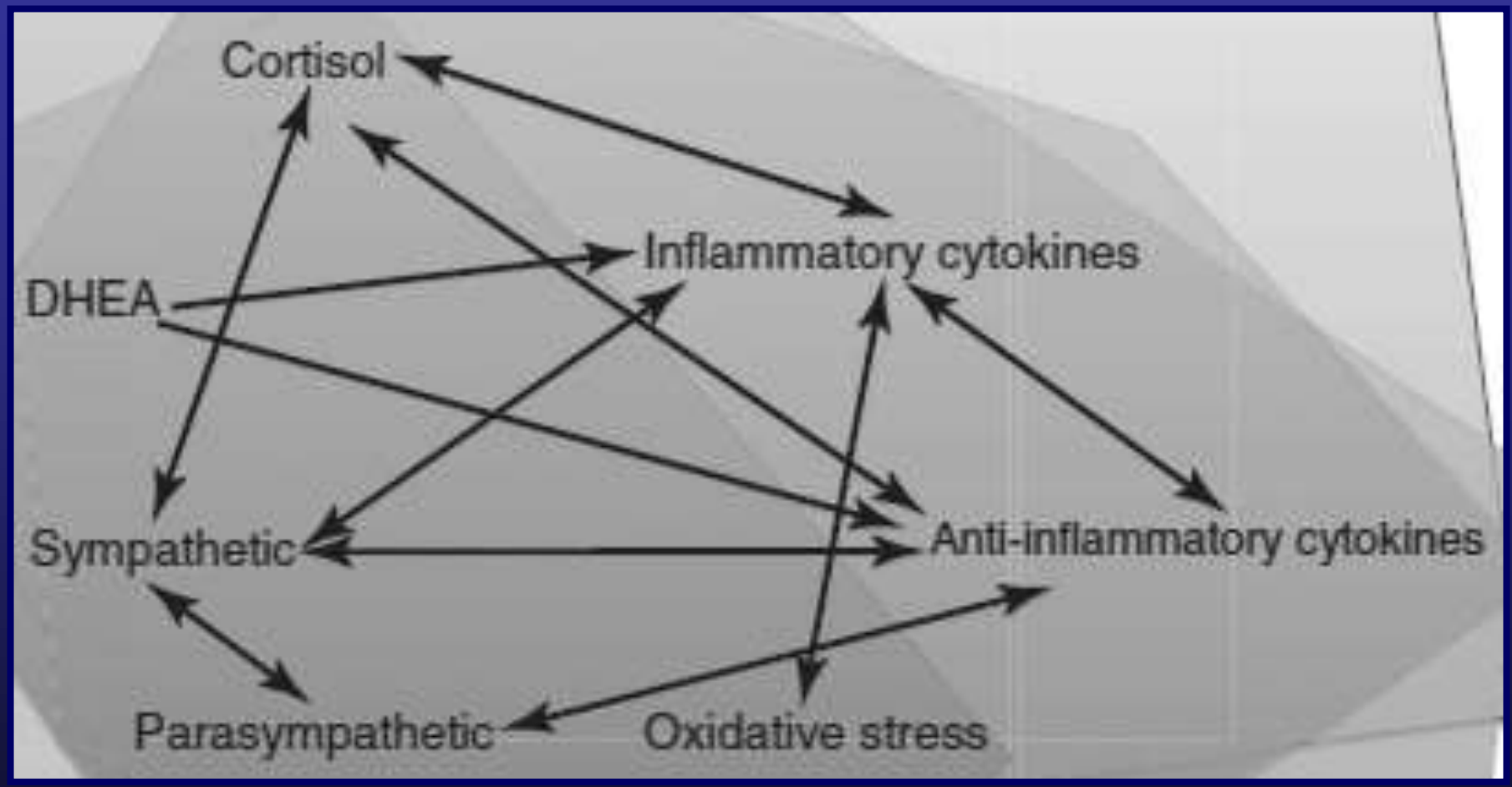
Con-plesso= "*tenuto insieme*" da comunicazioni e interazioni. Il tutto è più della somma delle parti.

→ Struttura a rete e frattale

→ Capacità di auto-organizzazione, emergenza di nuove forme-connessioni

→ NON-linearità

Nonlinear allostatic network in response to stress

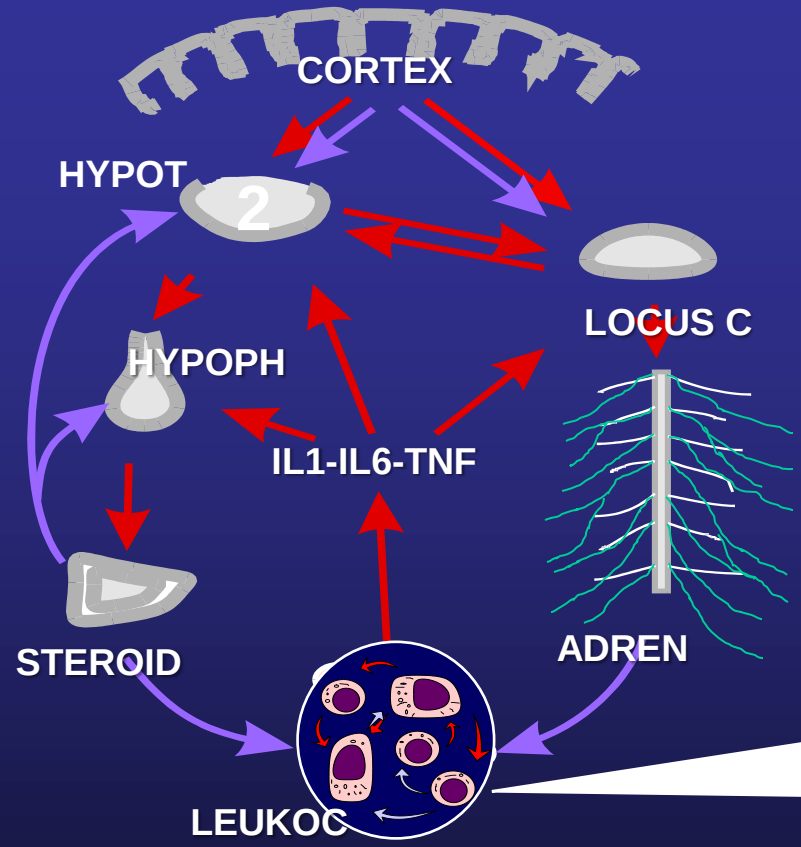


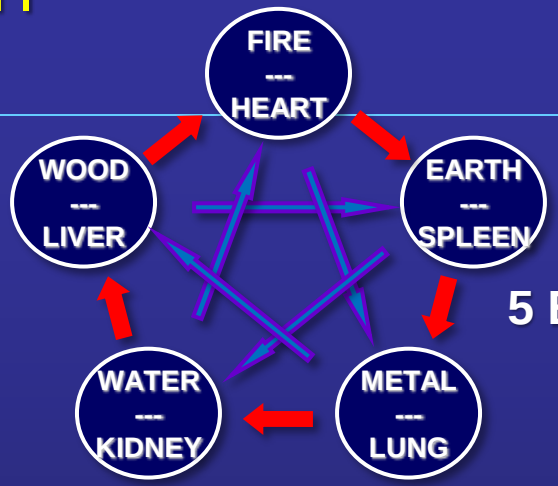
A Model for Homeopathic Remedy Effects: Low Dose Nanoparticles, Allostatic Cross-Adaptation, and Time-Dependent Sensitization in a Complex Adaptive System

Iris R. Bell and Mary Koithan – BMC Compl. Altern. Med 2012

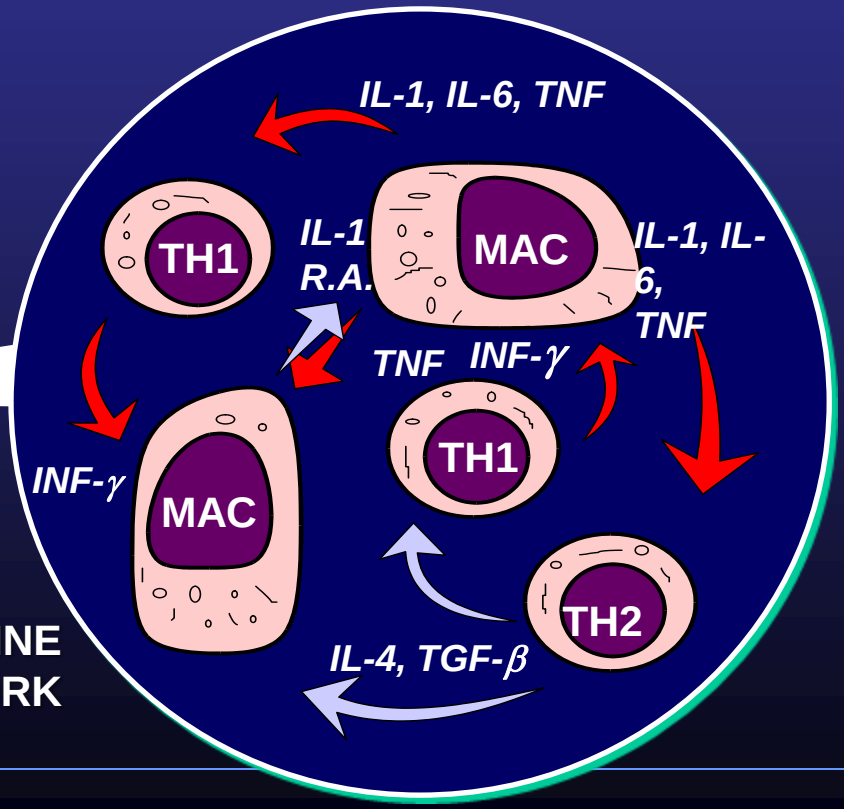
ESEMPI DI RETI

SISTEMA NEUROIMMUNOENDOCRINO



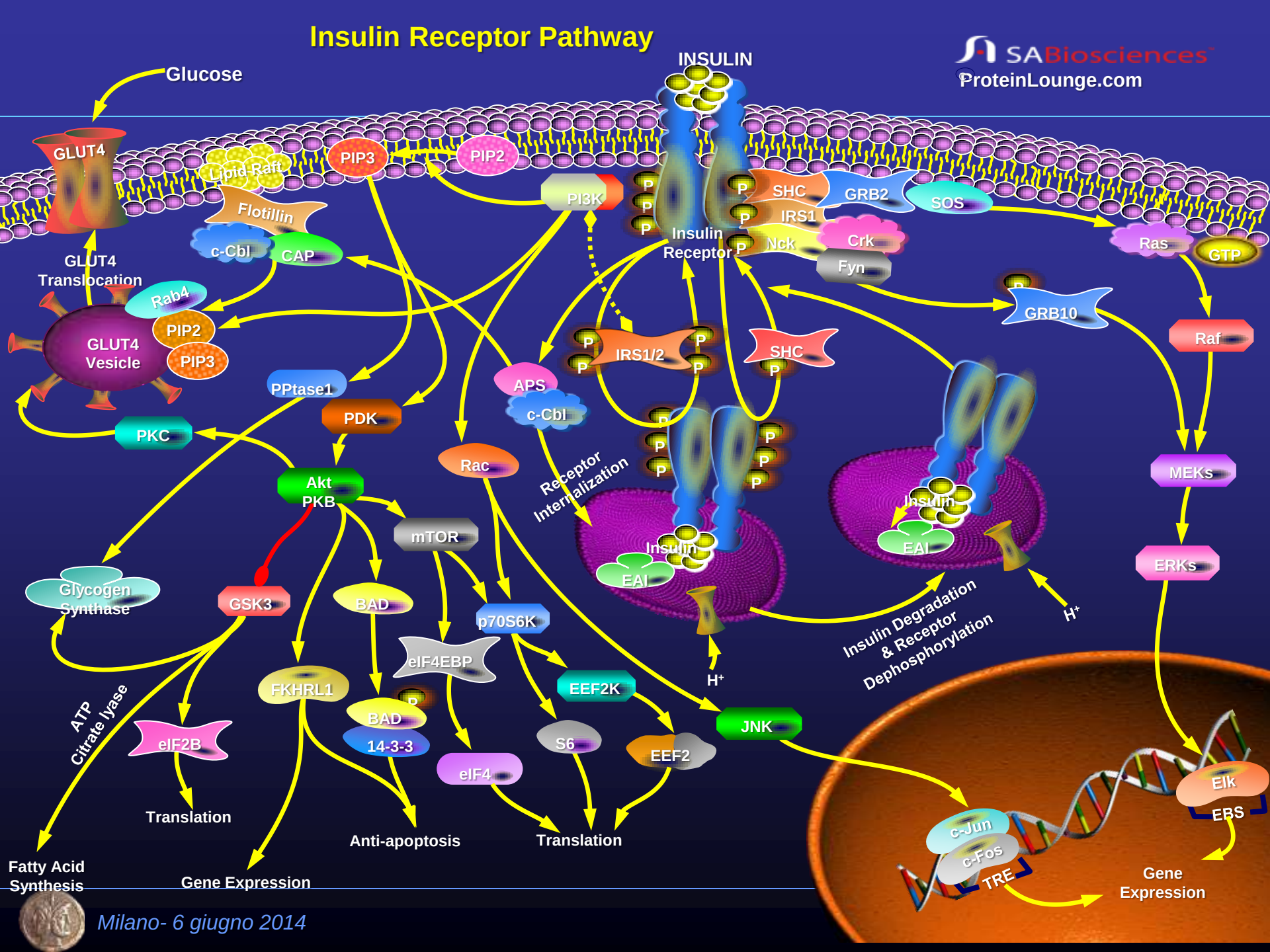


5 ELEMENTI

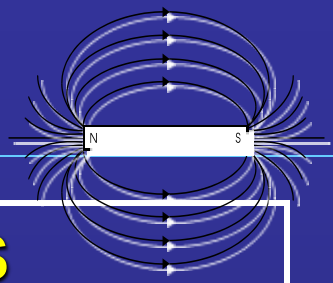


STIMULATION
INHIBITION

CYTOKINE NETWORK

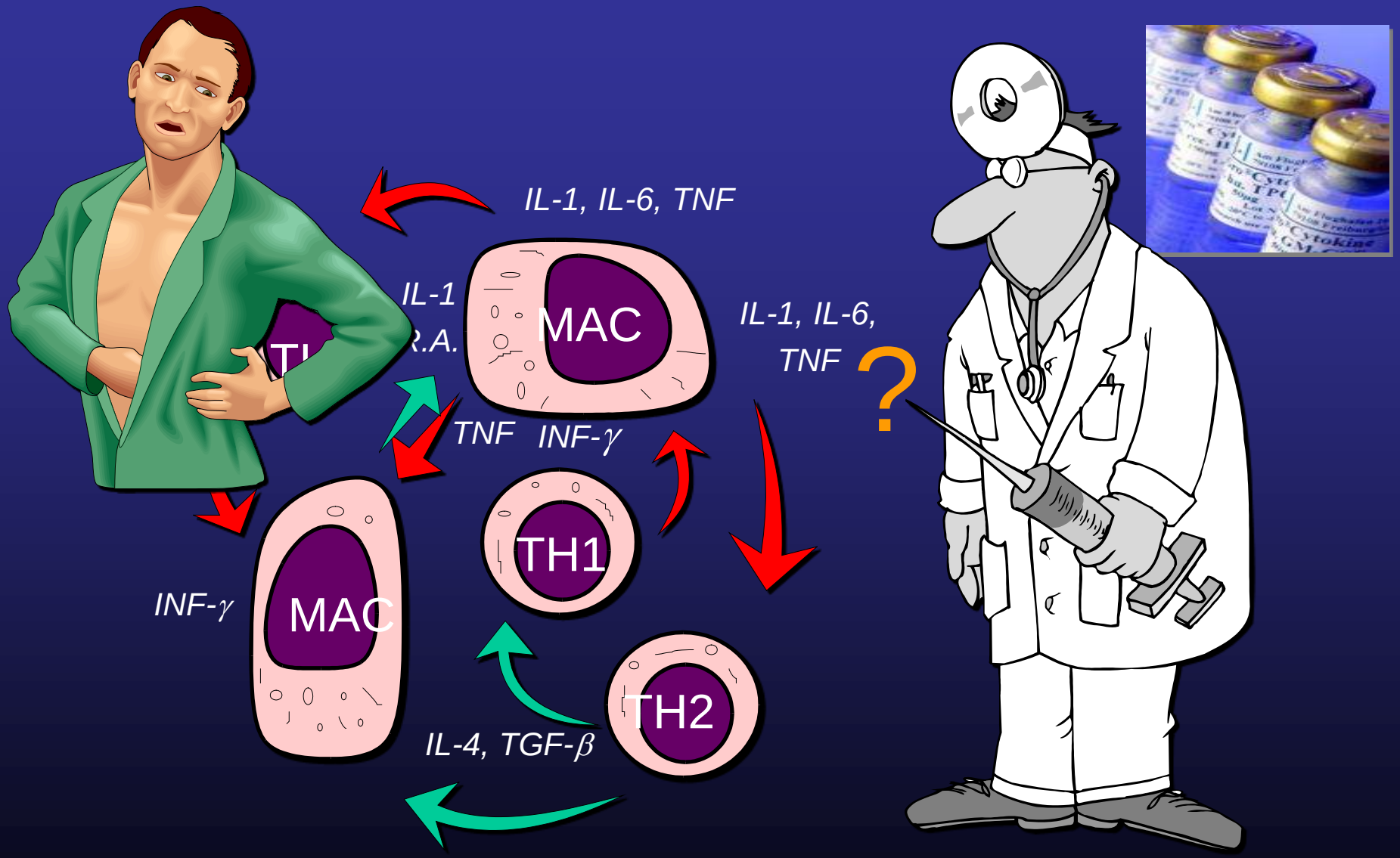

Insulin Receptor Pathway
SABiosciences
ProteinLounge.com
INSULIN
Glucose
GLUT4
Lipid Raft
Flotillin
c-Cbl
CAP
PIP3
PIP2
PI3K
Insulin Receptor
SHC
GRB2
SOS
IRS1
Nck
Crk
Fyn
Ras
GTP
GRB10
Raf
MEKs
ERKs
GLUT4 Translocation
Rab4
GLUT4 Vesicle
PIP2
PIP3
PPtase1
PDK
PKC
Akt PKB
mTOR
APS
c-Cbl
IRS1/2
SHC
Rac
Receptor Internalization
Insulin
EAI
Glycogen Synthase
GSK3
BAD
p70S6K
eIF4EBP
FKHRL1
BAD
14-3-3
EEF2K
S6
eIF4
EEF2
JNK
ATP Citrate lyase
eIF2B
Translation
Anti-apoptosis
Translation
Fatty Acid Synthesis
Gene Expression
H+
Insulin Degradation & Receptor Dephosphorylation
c-Jun
c-Fos
TRE
Elk
ERS
Gene Expression
Milano- 6 giugno 2014

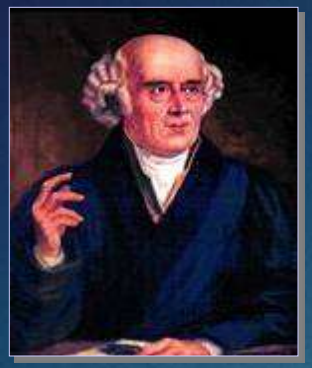
"NON-MOLECULAR" BIOLOGIC SIGNALS



SIGNALS	EXAMPLES
BETWEEN CELLS	
Low-frequency e.m. fields	Cell growth
Piezoelectricity	Bone trabeculae
Light	Leukocytes, DNA (biophotons) (?)
INSIDE THE CELLS	
Electric potentials	Ionic channels, nerve fibers
Mechanical waves	Actin fibers, muscle
Low-frequency e.m. fields	G-proteins, membrane pumps

L'AUTO-ORGANIZZAZIONE DELLE RETI DINAMICHE COSTITUISCE UN LIMITE ALLA PRETESA DI REGOLAZIONE FARMACOLOGICA





LO SCOPO PRINCIPALE

"Scopo principale ed unico del medico è di rendere sani i malati, ossia, come si dice, di guarirli" (ORGANON, PAR. 1)

Nota al Par. 1: "E non il congetturare ed erigere a sistemi (…) vuote idee ed ipotesi sull'intima essenza dei processi vitali e sull'origine delle malattie nell'invisibile interno del nostro corpo…"

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Complementary Therapies in Medicine (2013) 21, 750–761

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A dynamic network model of the similia principle

Paolo Bellavite[a,*], Debora Olioso[a], Marta Marzotto[a], Elisabetta Moratti[a], Anita Conforti[b]

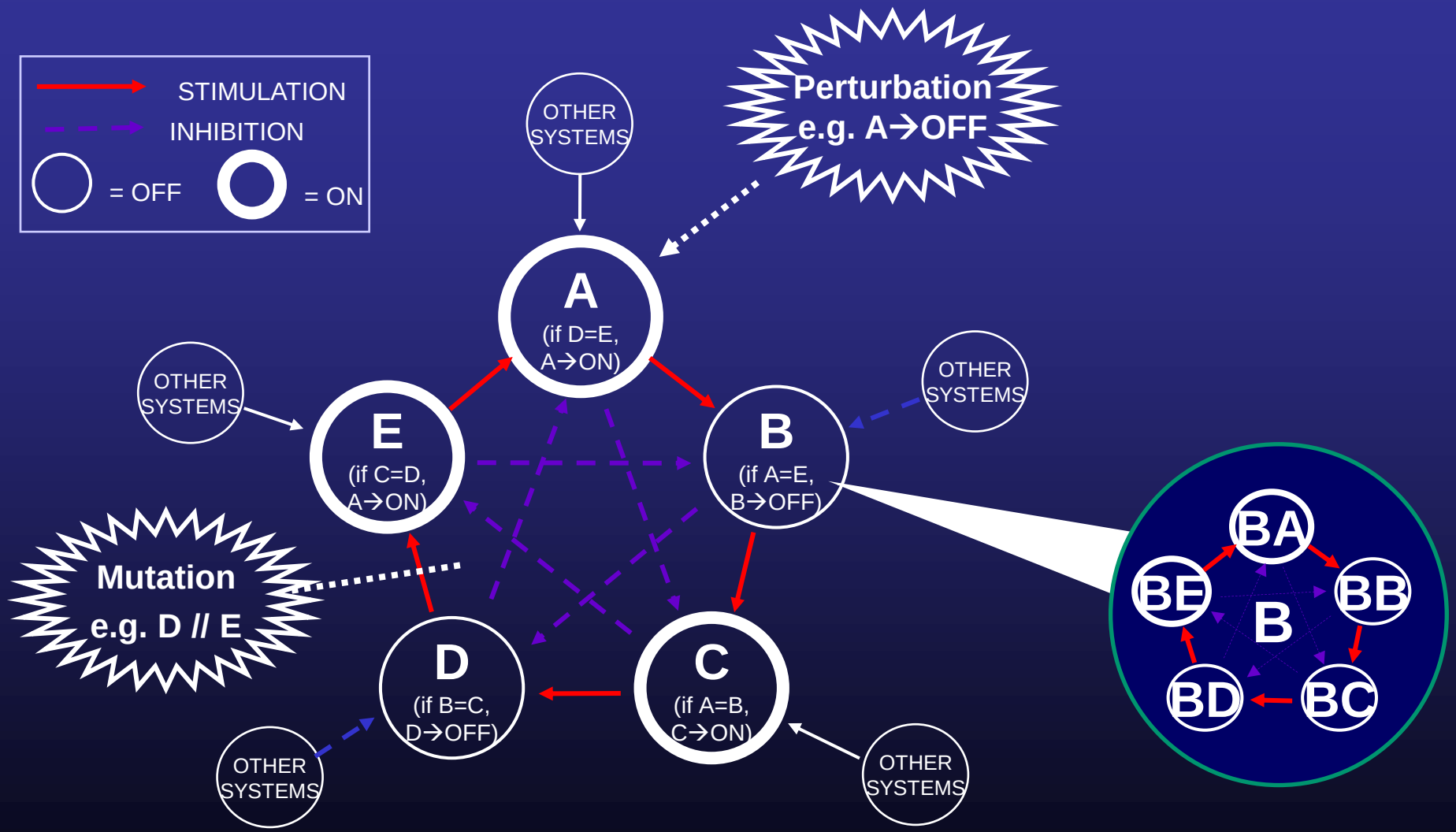
[a] Department of Pathology and Diagnostics, University of Verona, 37134 Verona, Italy
[b] Department of Public Health and Community Medicine, University of Verona, 37134 Verona, Italy

Available online 8 September 2013

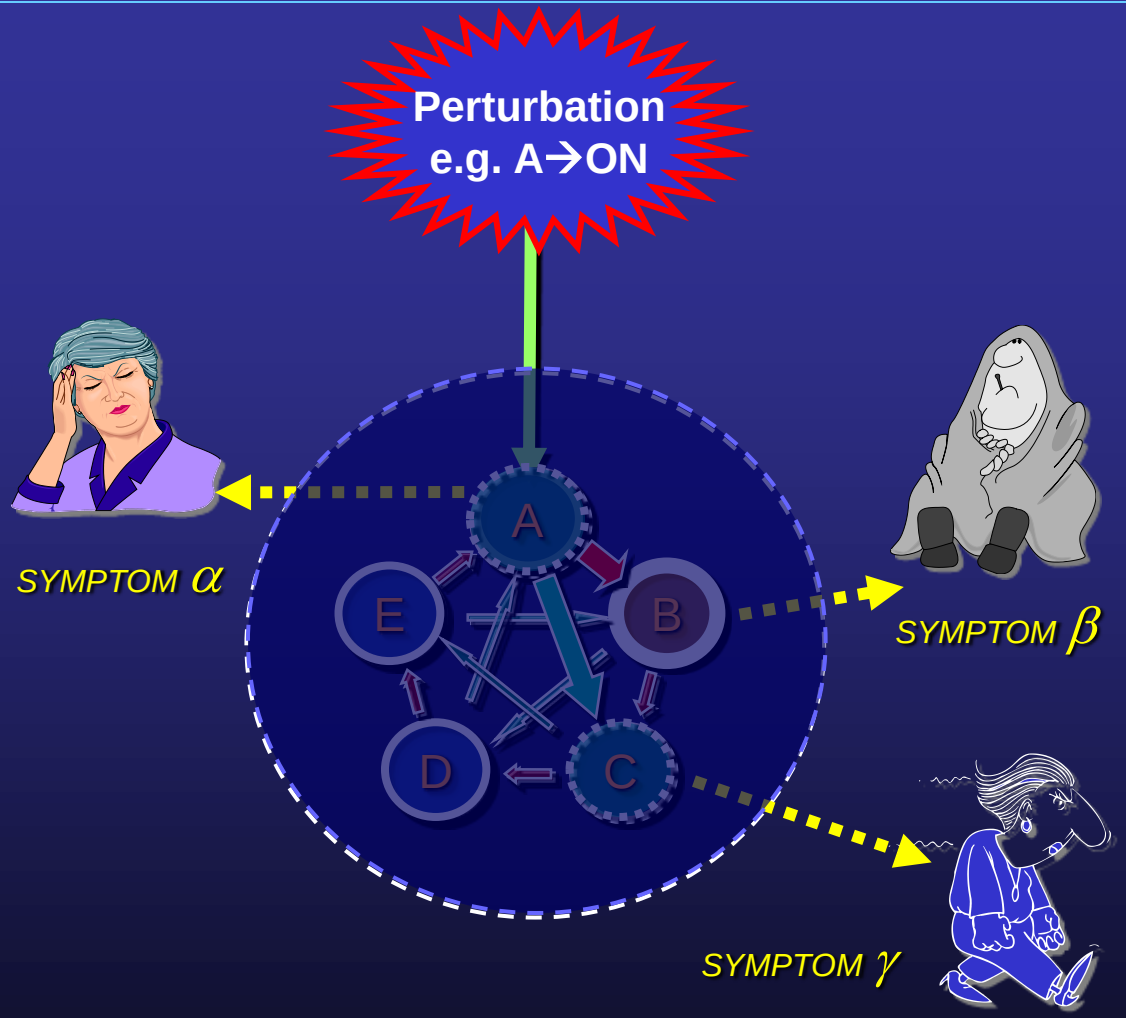
KEYWORDS
Homeopathic theory;
Similia principle;
Network model;
Complexity science;
Homeopathic methodology;
Symptoms analysis

Summary The use of drugs in high dilutions and the principle of similarity (or ''similia'') are two basic tenets of homeopathy. However, the plausibility of both is a subject of debate. Although several models have been proposed to explain the similia principle, it can be best understood and appreciated in the framework of complexity science and dynamic systems theory. This work applies a five-node Boolean network to show how self-organization and adaptation are relevant to rationalizing this traditional medical principle. Simulating the trajectories and attractors of the network system in the energy state-space provides a rudimentary and qualitative illustration of how targeted external perturbations can have pathological effects, leading to permanent, self-sustaining alterations. Similarly, changes that conversely enable the system to find its way back to the original state can induce therapeutic effects, by causing specific shifts in attractors when suitable conditions are satisfied. Extrapolating these mechanisms to homeopathy, we can envisage how major changes in the evolution of homeodynamic systems (and, eventually, healing of the entire body) can be achieved through carefully selected remedies that reproduce the whole symptom pattern of the ill state.

ANATOMIA, FISIOLOGIA E PATOLOGIA DI UN «SISTEMA»
(Bellavite et al 1998-2013)

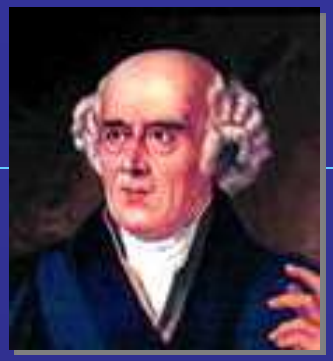


«SYMPTOMS» ARE ALWAYS MANIFESTATIONS OF DIRECT OR INDIRECT CHANGES OF SOME NODES OF THE NETWORK



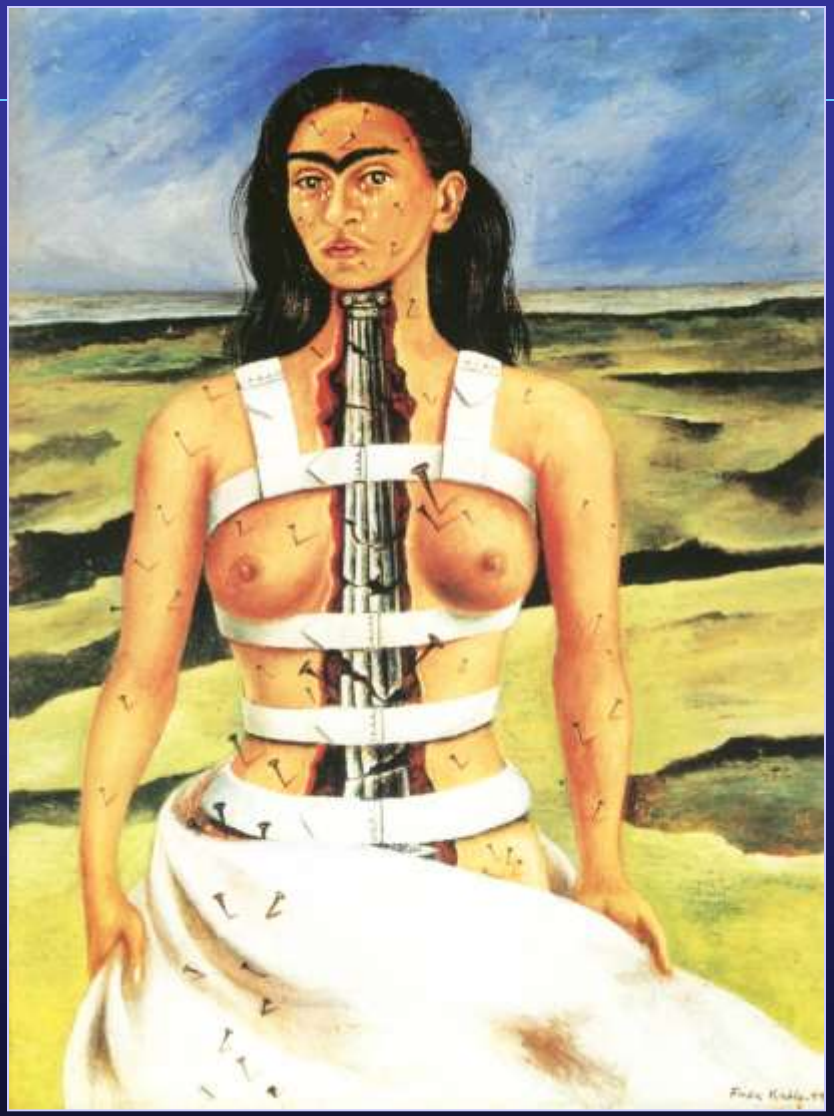
«ILLNESS» or «DISEASE»

Organon, Par. 14,15

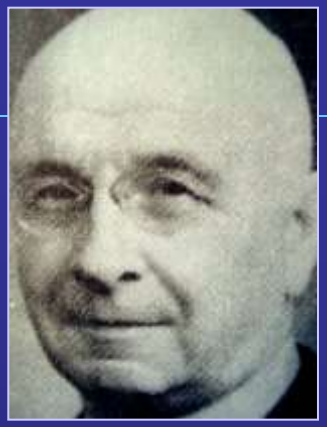


"Non vi è alcuna malattia né alcuna alterazione morbosa nell'interno dell'organismo, che non si dia a riconoscere per mezzo di segni (sintomi) al medico, che attentamente osserva" ….

"Il male della forza vitale, vivificatrice del nostro corpo, perturbata morbosamente e immaterialmente nell'interno invisibile, e l'insieme dei sintomi, da essa determinati nell'organismo e percepibili all'esterno e costituenti la malattia, formano un tutt'uno, sono la stessa cosa"



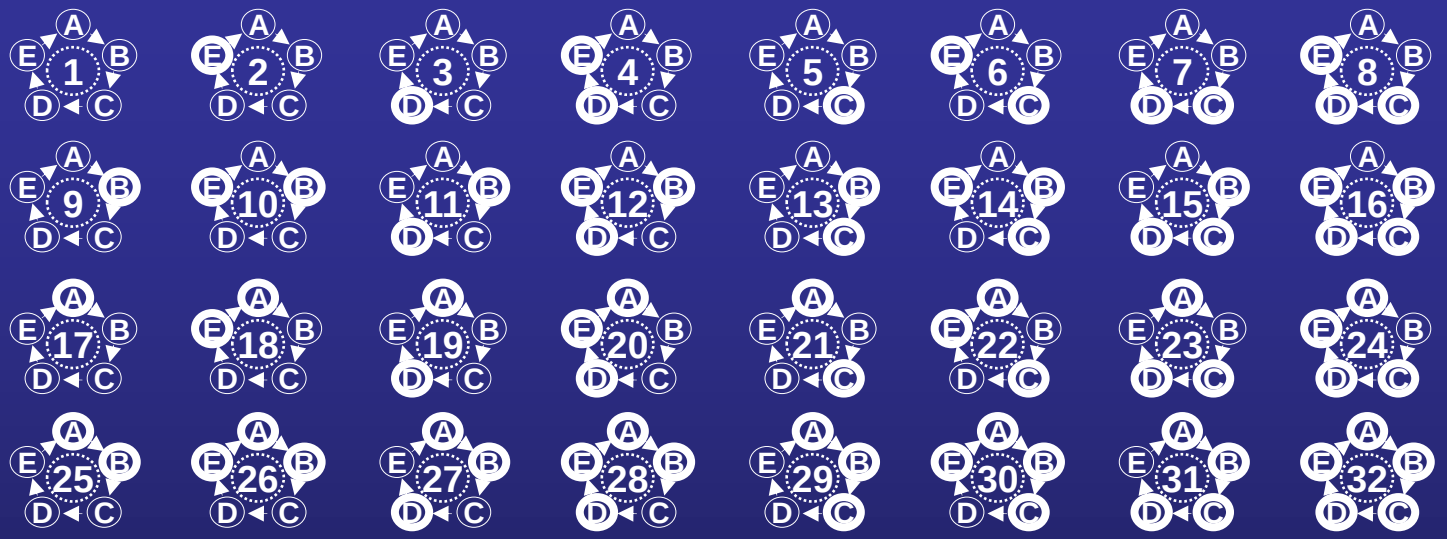
Frida Khalo (1907-1954),
La colonna spezzata, 1944, olio su tela



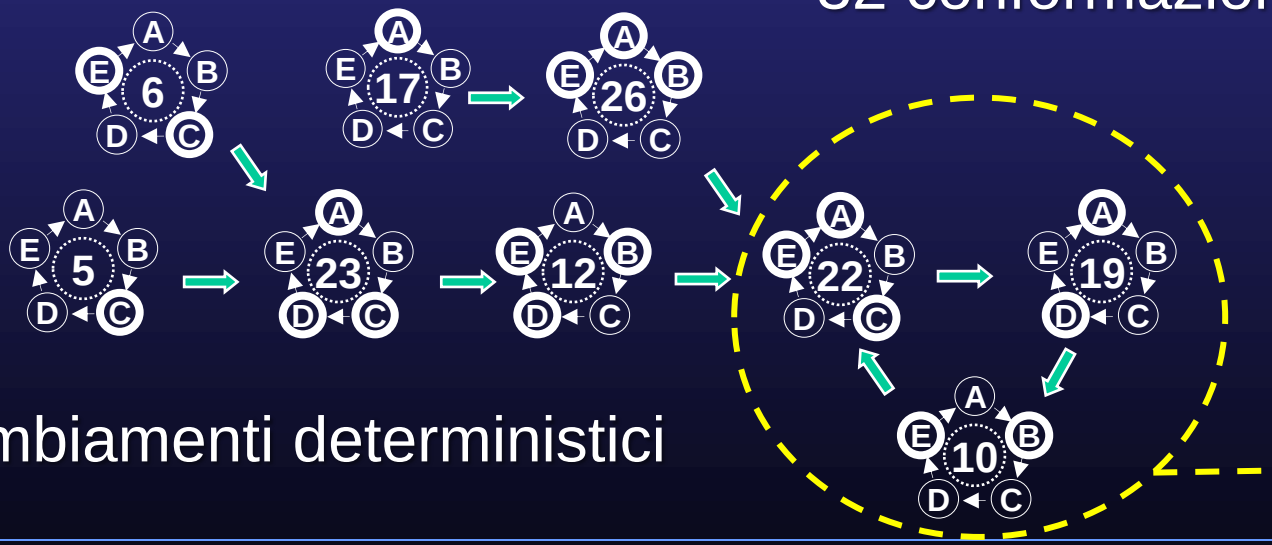
Alexis Carrel
L'homme, cet inconnu.
Plon, Paris, 1935

"L'uomo è un tutto indivisibile, che si manifesta con delle attività fisico-chimiche, fisiologiche e psicologiche"

GRADI DI LIBERTA' E FORMAZIONE DI ATTRATTORE



32 conformazioni possibili

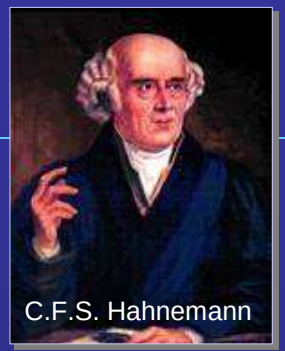


Cambiamenti deterministici

Attrattore dinamico

SPAZIO DELLE FASI (DEGLI STATI O DELL'ENERGIA)

Rappresentazione grafica dello stato di un sistema in cui ad ogni asse è associata una variabile dinamica.


C.F.S. Hahnemann

MALATTIE E "DINAMICA" SEC. HAHNEMANN

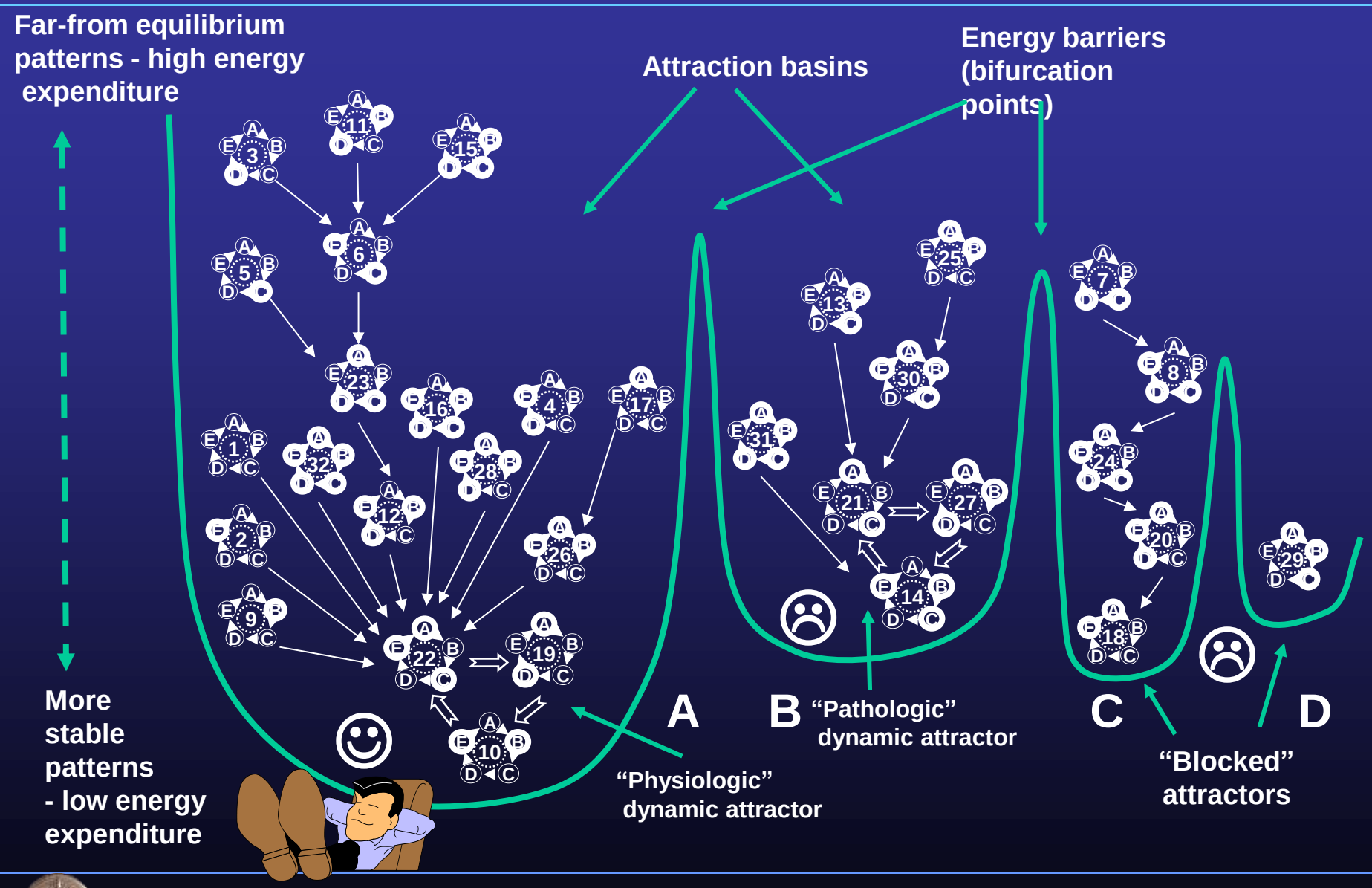
"La malattia e la guarigione si sviluppano solo attraverso influenze dinamiche"

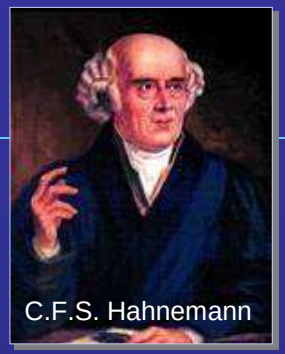
C.F.S. Hahnemann, Organon, 5th ed, par. 86.

"Le medicine agiscono non anatomicamente ma dinamicamente"

C.F.S. Hahnemann, Uber die Kraft kleiner Gaben der Arzneien überhaupt un der Belladonna inbesondere. *Hufeland's Journal* 13, 153, 1801.

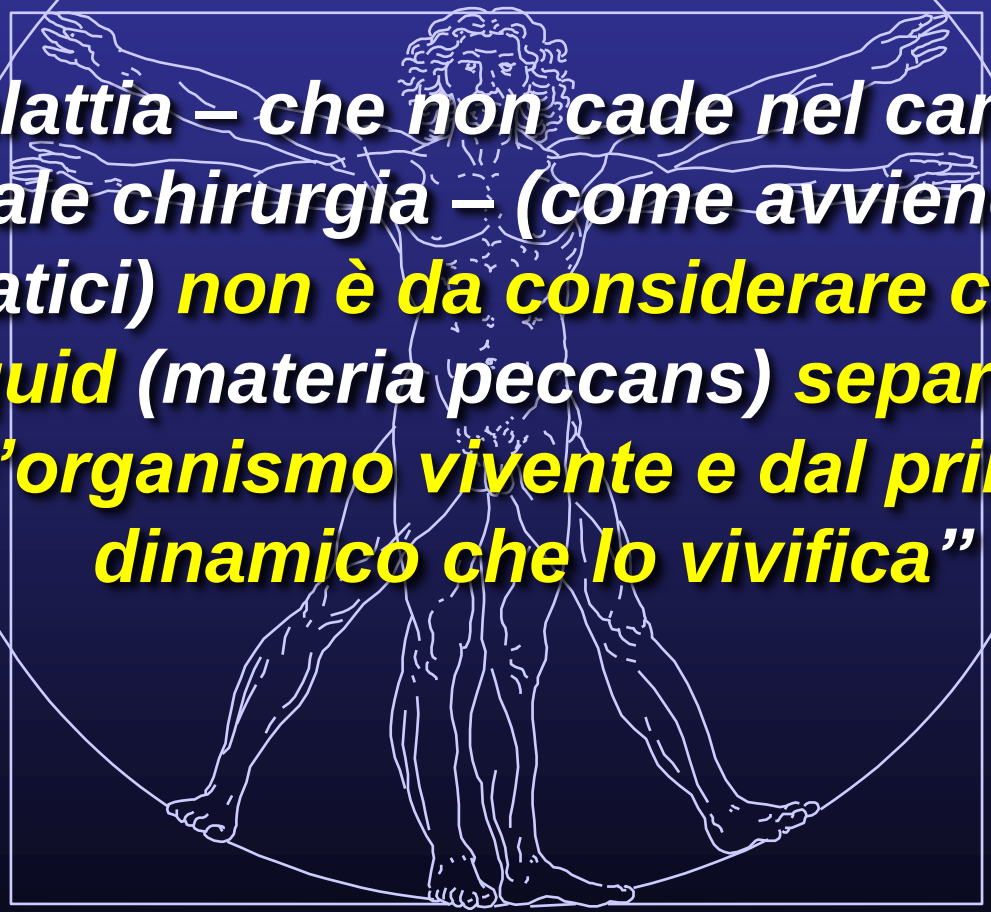
THE SPACE OF STATES, OR SPACE OF ENERGY




C.F.S. Hahnemann

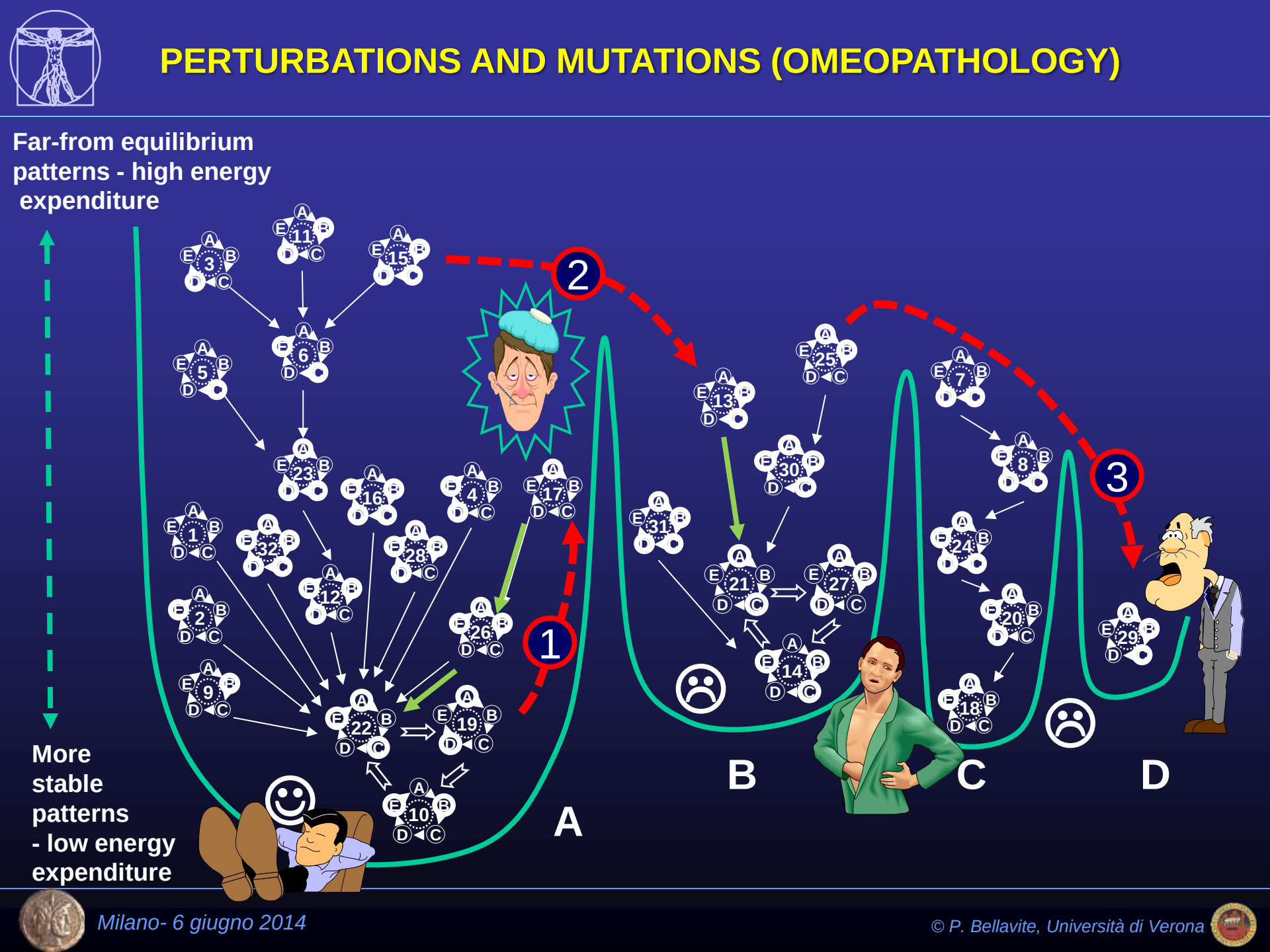
C.F.S. Hahnemann

Organon (VI ed) Par. 13

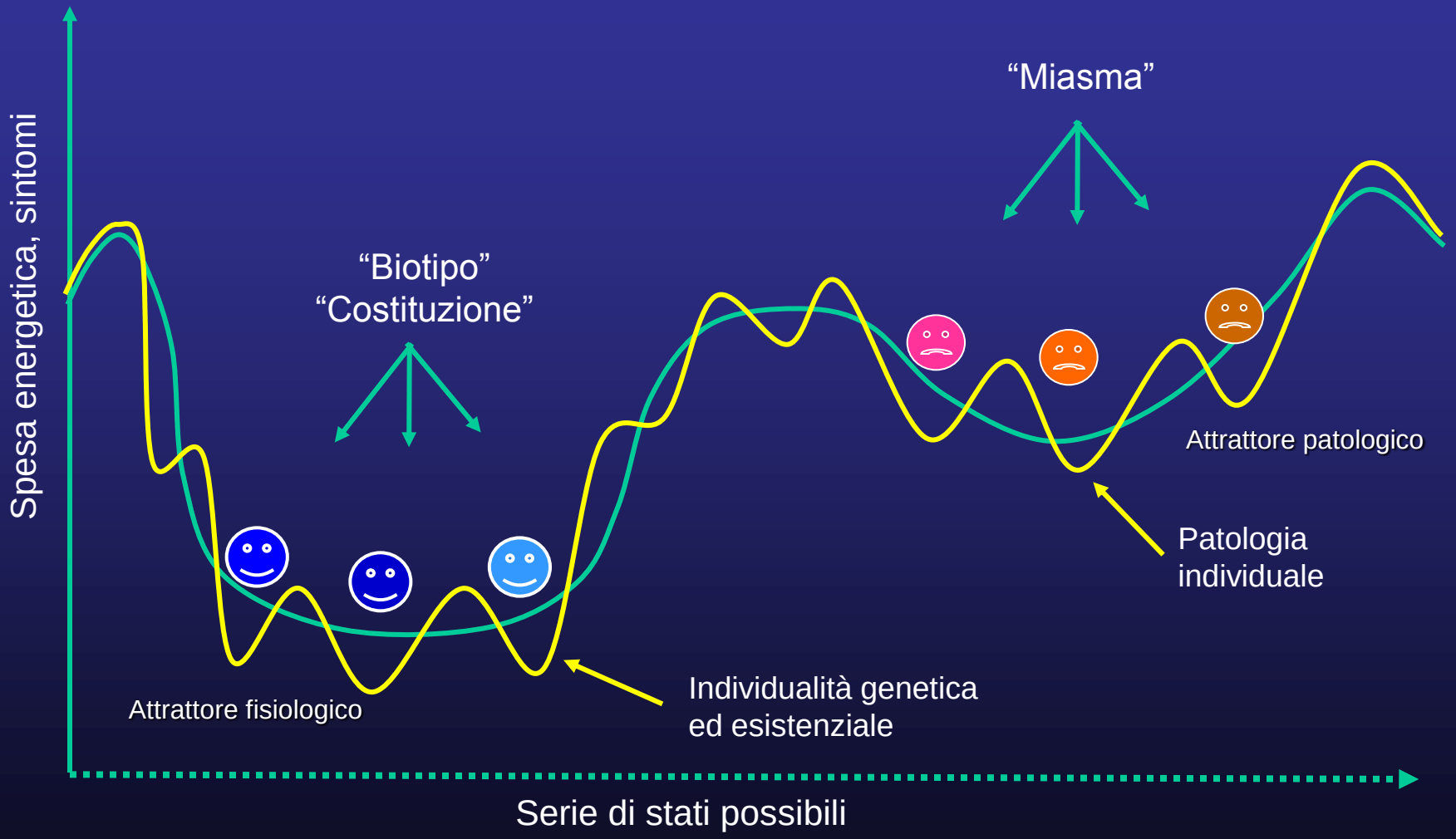


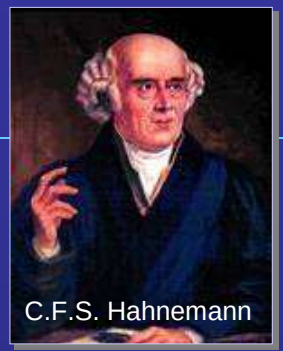
"La malattia – che non cade nel campo della manuale chirurgia – (come avviene per gli allopatici) non è da considerare come un quid (materia peccans) separato dall'organismo vivente e dal principio dinamico che lo vivifica"

PERTURBATIONS AND MUTATIONS (OMEOPATHOLOGY)



MALATTIA COME FENOMENO DINAMICO NELLO SPAZIO DELL'ENERGIA

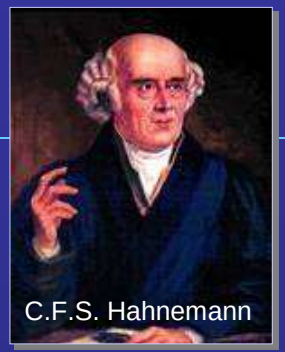



C.F.S. Hahnemann

INVALIDITÀ DELLA FORZA VITALE NELLE MALATTIE CRONICHE E OMEOPATIA

(CFS. Hahnemann: Die Chronischen Krankheiten, 2nd Ed., iv, 1838)

"Nelle malattie croniche la vera salute non può essere riportata dalla sola forza vitale. Tuttavia, è altrettanto certo che se tale forza è resa più valida dalla vera arte della guarigione (quella omeopatica), guidata dall'umana ragione, essa può sopraffare e superare (quindi curare) non solo le malattie rapide e transitorie, ma anche quelle croniche (…).

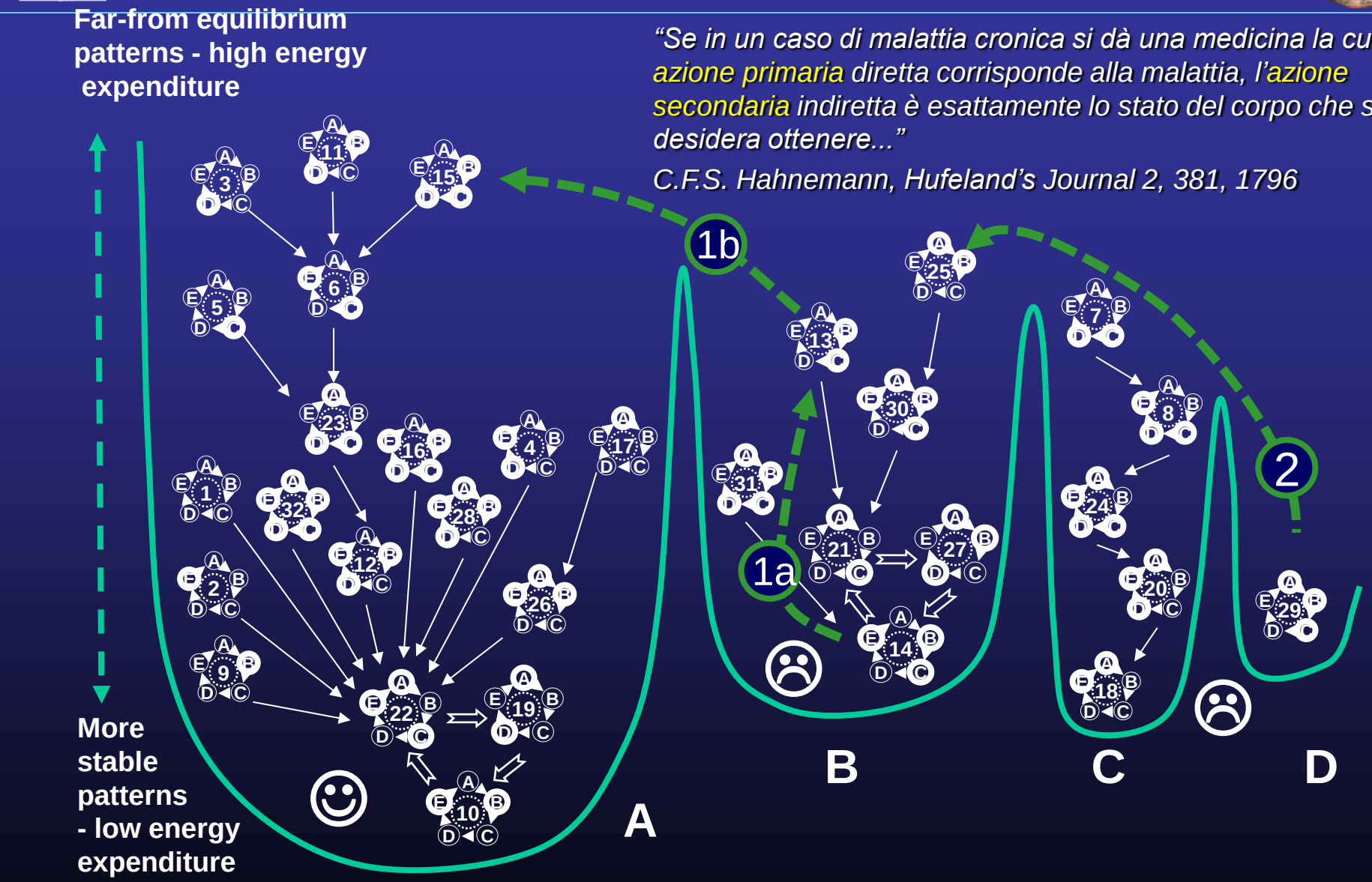

C.F.S. Hahnemann

IL “SIMILE” di Hahnemann

Versuch über ein neues Princip zur Auffindung der Heilkrafte der Arzneisubstanzen –
Hufeland’s Journal 2, 381, 1796.
.

“Uno imita la natura, che talvolta guarisce le malattie croniche aggiungendo un’altra malattia, e quindi impiega nella malattia (preferibilmente cronica) quel farmaco che si trova nella posizione di poter eccitare un’altra malattia artificiale più simile possibile a quella naturale, che sarà guarita: similia similibus”

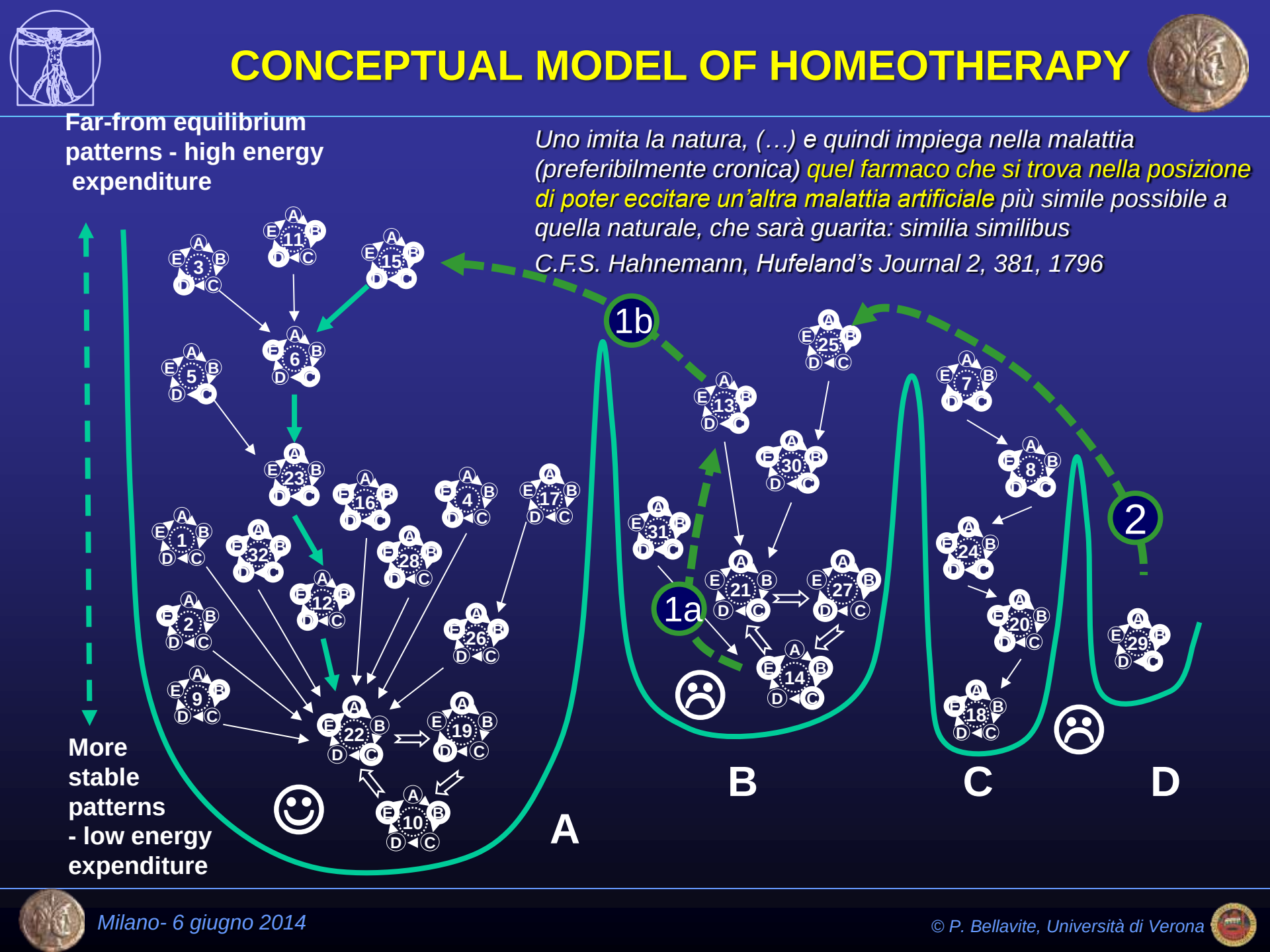
CONCEPTUAL MODEL OF HOMEOTHERAPY



"Se in un caso di malattia cronica si dà una medicina la cui azione primaria diretta corrisponde alla malattia, l'azione secondaria indiretta è esattamente lo stato del corpo che si desidera ottenere..."

C.F.S. Hahnemann, Hufeland's Journal 2, 381, 1796

CONCEPTUAL MODEL OF HOMEOTHERAPY



Uno imita la natura, (…) e quindi impiega nella malattia (preferibilmente cronica) quel farmaco che si trova nella posizione di poter eccitare un'altra malattia artificiale più simile possibile a quella naturale, che sarà guarita: similia similibus

C.F.S. Hahnemann, Hufeland's Journal 2, 381, 1796

Omnia venenum sunt

«***Omnia venenum sunt: nec sine veneno quicquam existit. Dosis sola facit, ut venenum non fit***.»

«Tutto è veleno, nulla esiste che non sia veleno. Solo la dose fa che il veleno abbia effetto»

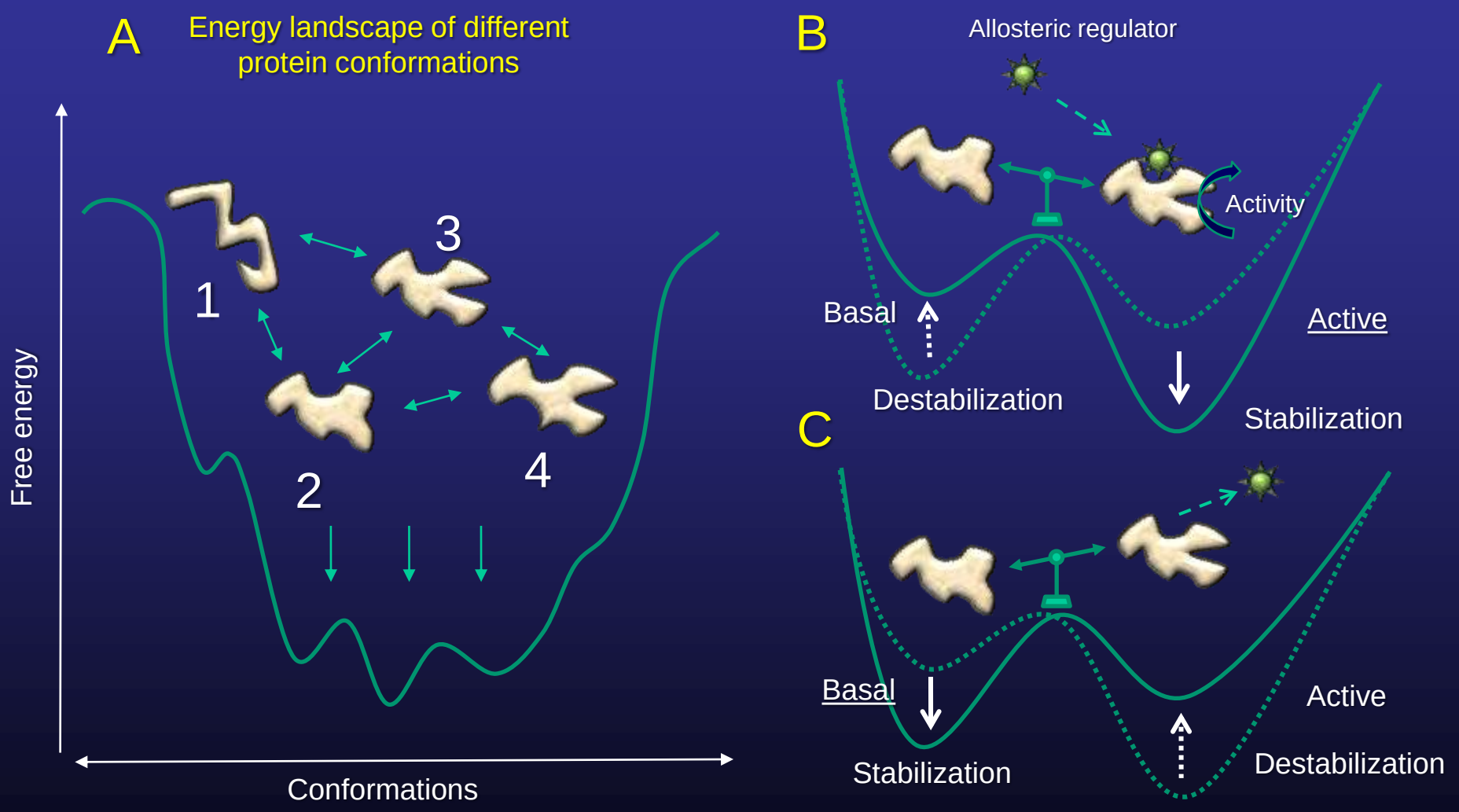
(Paracelso,
Responsio ad quasdam accusationes & calumnias suorum aemulorum et obtrectatorum. Defensio III. Descriptionis & designationis nouorum Receptorum.)

Mitridate, re del Ponto
(132-63 a.c.)

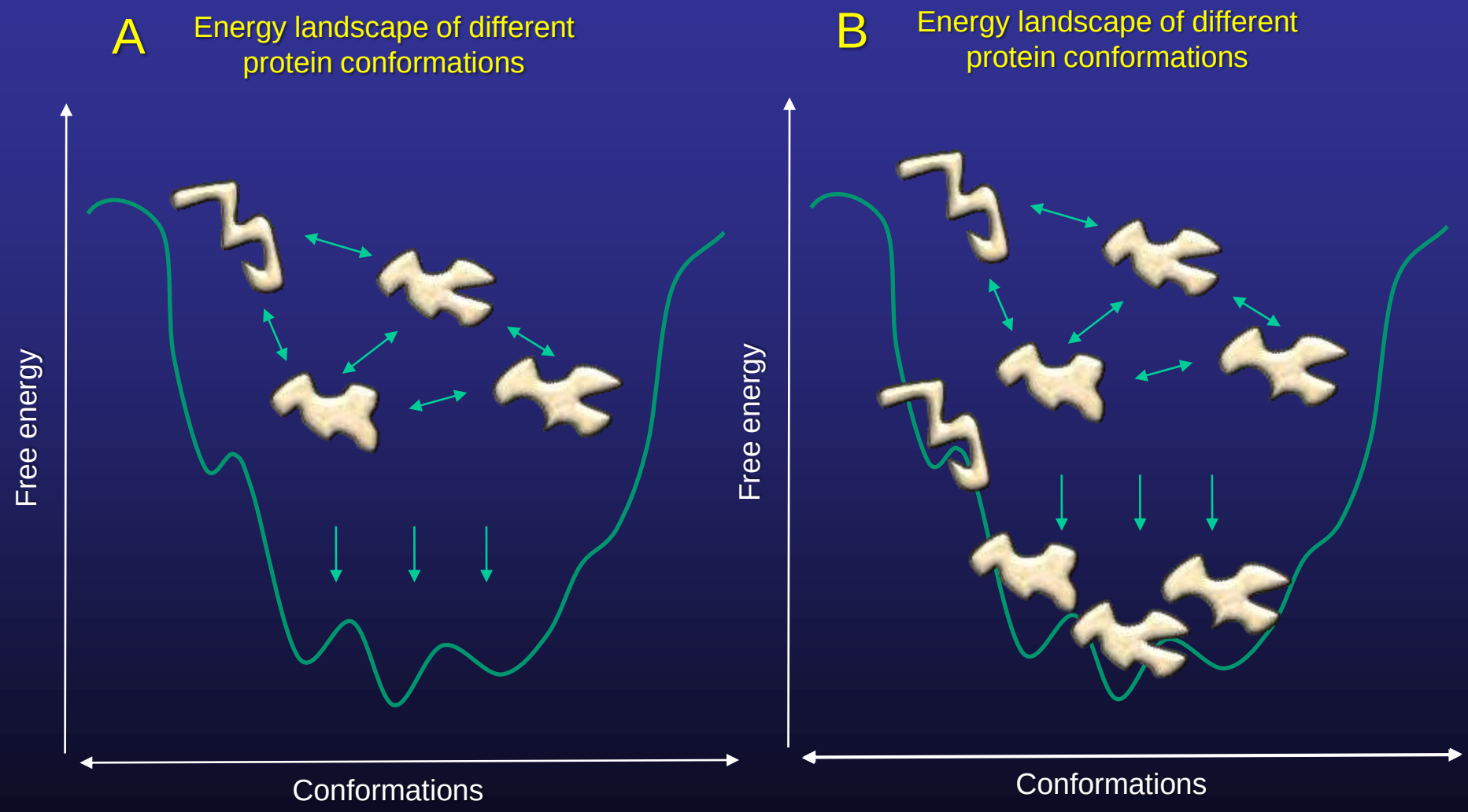
LA REGOLA DEL "VALORE INIZIALE" (DI WILDER)

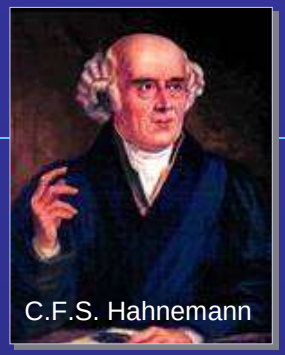
Bellavite et al. ECAM Journal 2007

PROTEIN FOLDING IN THE ENERGY LANDSCAPE



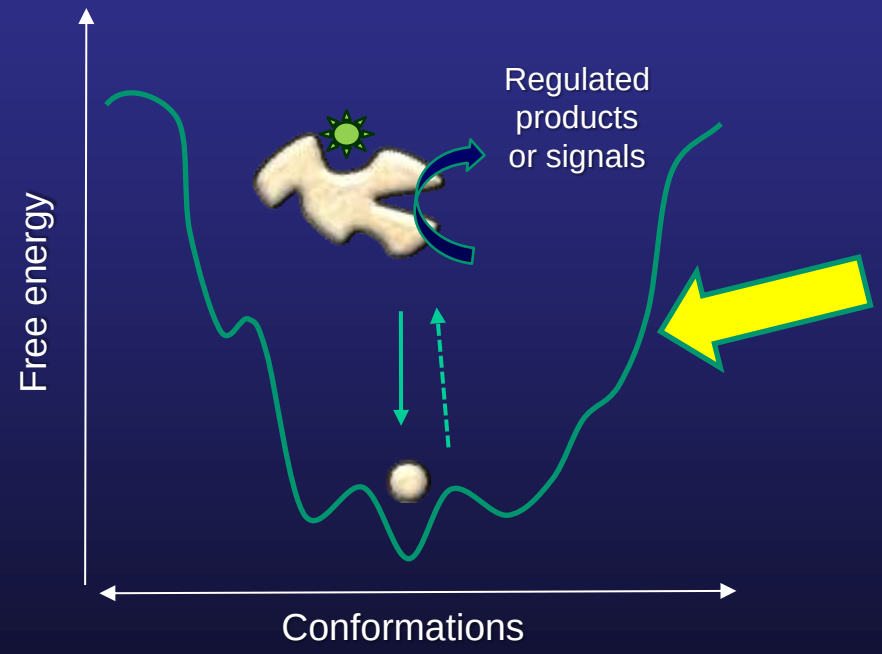
PROTEIN FOLDING IN THE ENERGY LANDSCAPE
(Bellavite et al., *Homeopathy* 2015)




C.F.S. Hahnemann

LA FORZA VITALE DALLA TRADIZIONE ALLA SCIENZA

(CFS. Hahnemann: Die Chronischen Krankheiten, 2nd Ed., iv, 1838)

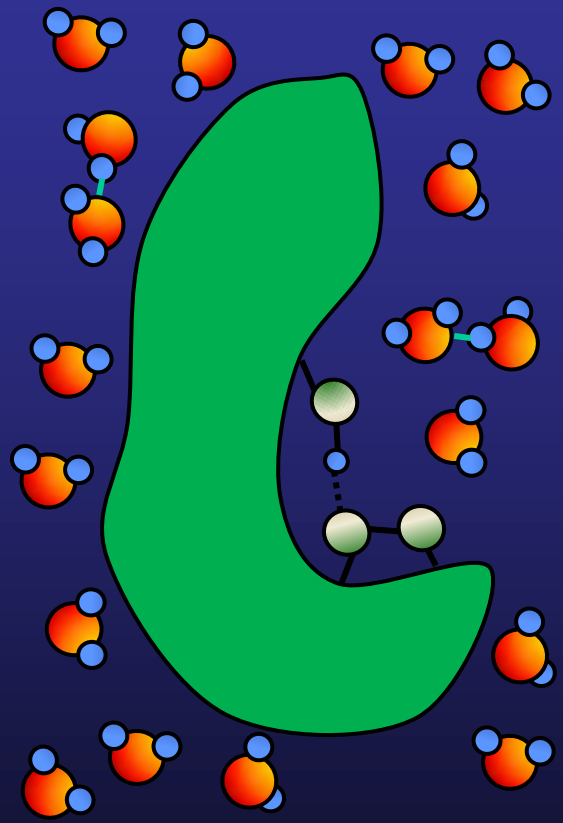


«È sempre questo potere, la forza vitale, che scaccia il nemico, nel caso che sia supportata dai medicinali (...).»

Legami idrogeno tra cluster d'acqua e macromolecole

Bellavite et al., Homeopathy January 2014

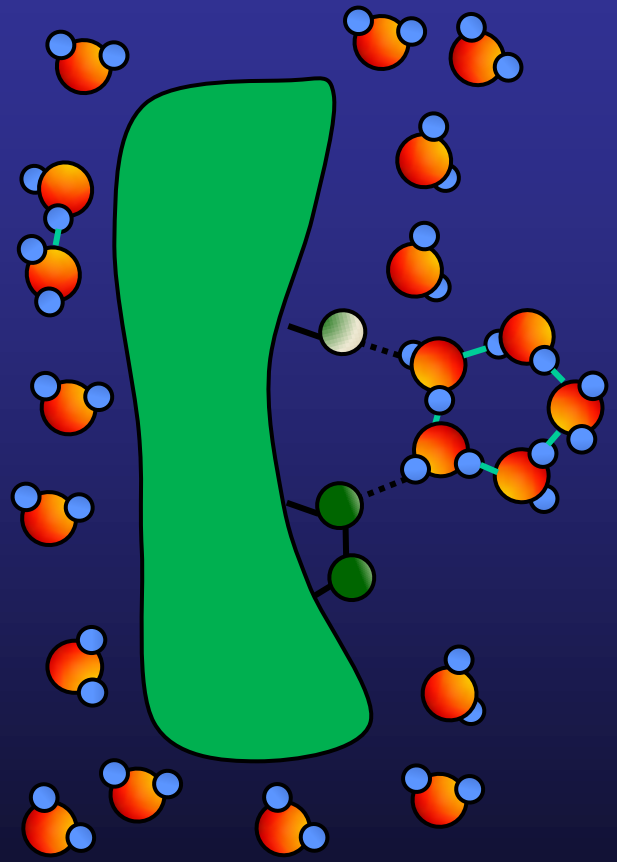
A. Internal H-bond



Closed structure

(e.g. Inactive enzyme)

B. H-bond to water

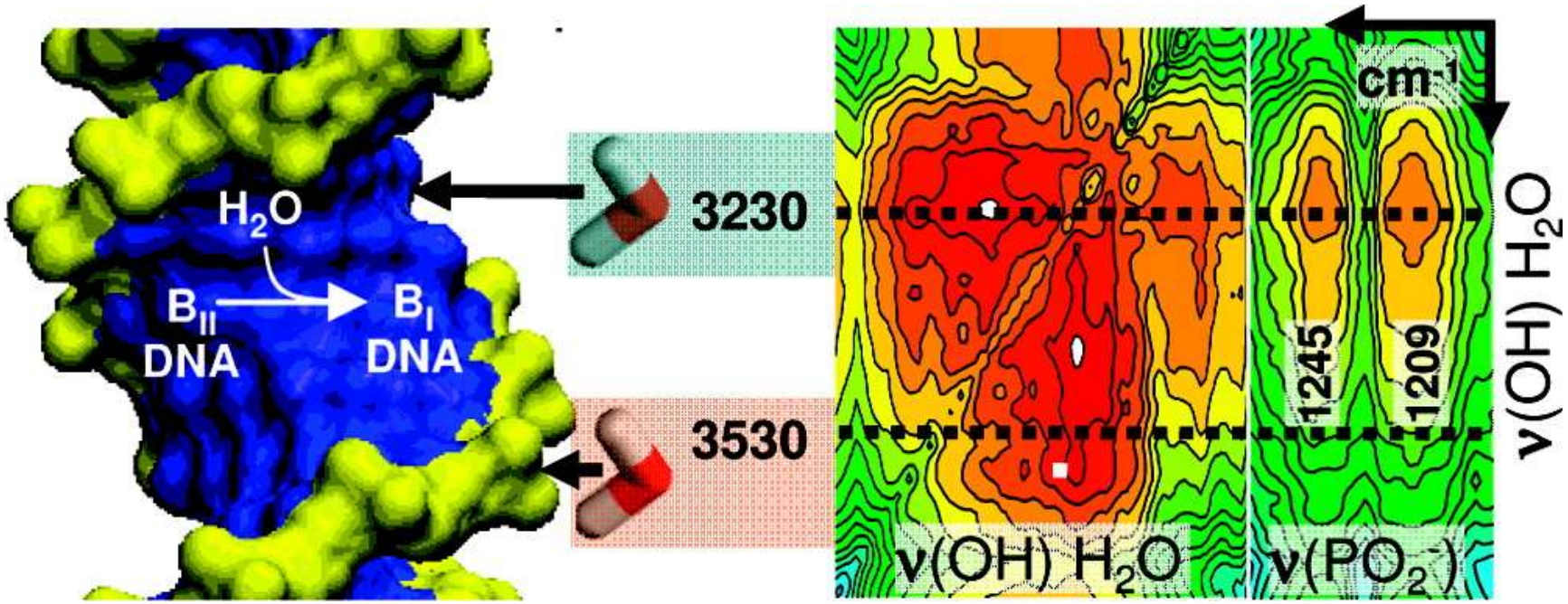


Open structure

(e.g. Active enzyme)

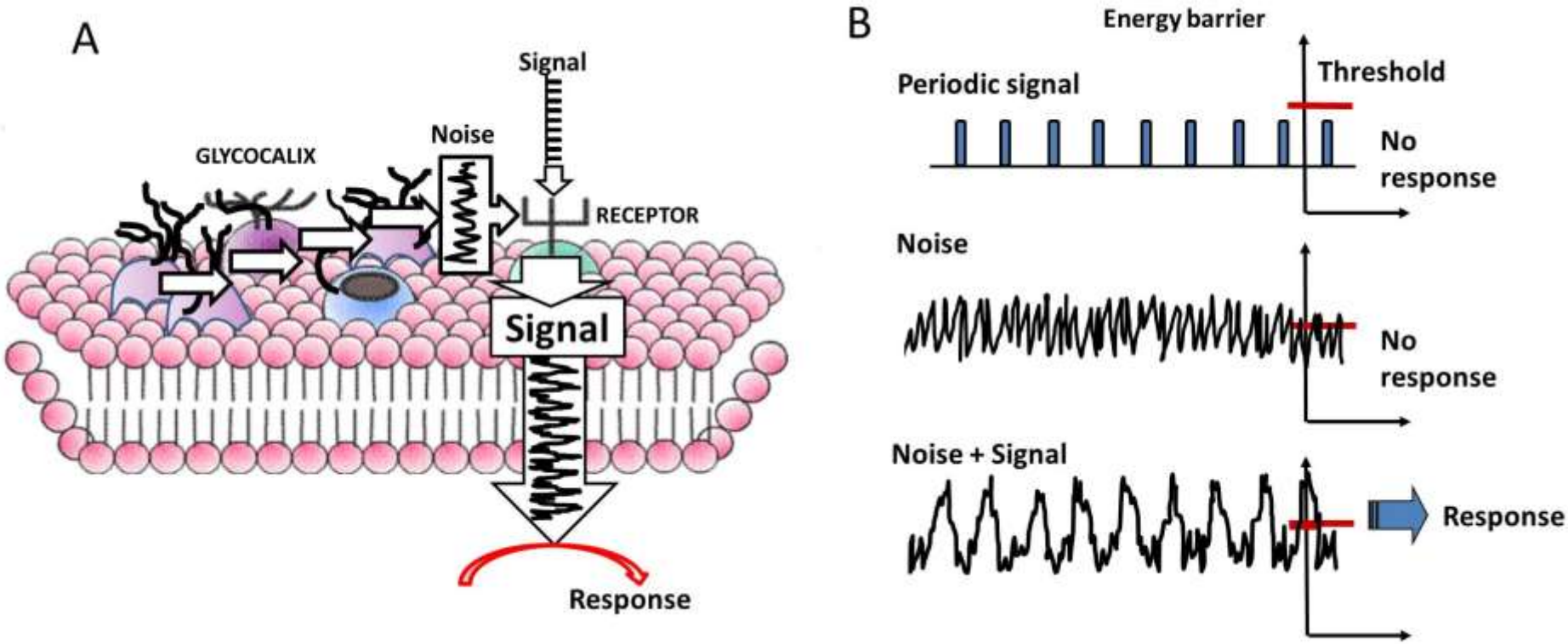
The Role of Water H-Bond Imbalances in B-DNA Substate Transitions and Peptide Recognition

Khesbak , Olesya Savchuk , Satoru Tsushima , and Karim Fahmy
Division of Biophysics, Instititute of Radiochemistry, Helmholtz-Zentrum Dresden, Germany
J. Am. Chem. Soc., 2011, 133 (15), pp 5834–5842



Risonanza stocastica

Bellavite et al., Homeopathy 2014



Centralità
della persona,
sinergia
dei saperi,
omeopatia

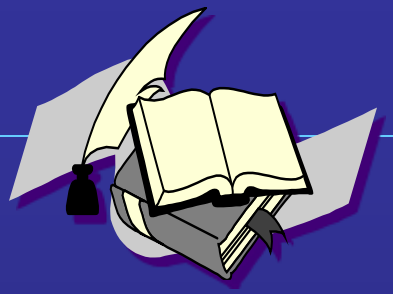
BELLADONNA ONLUS
Fondazione per la divulgazione della scienza omeopatica

Venerdì 06 giugno 2014
14.30-19.30
Sabato 07 giugno 2014
9.00-13.00; 14.30-19.30

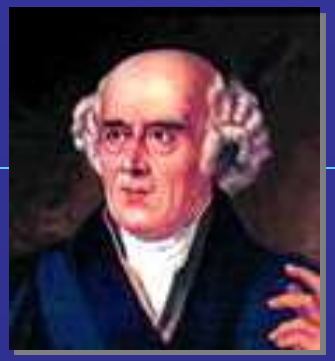
Milano - Società Umanitaria

La Similitudine come regola di natura

- L e regole della Natura e la complessità fondamentale della vita
- Modello a rete: omeodinamica, omeopatologia, omeoterapia
- **Il Simile nello studio sperimentale**



Saggio su un nuovo principio

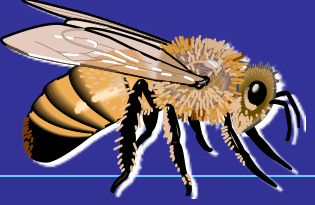


C.F.S. Hahnemann
Versuch über ein neues Princip zur Auffindung der Heilkrafte der Arzneisubstanzen -*Hufeland's Journal* 2, 381, 1796

"Noi dobbiamo conoscere da una parte le malattie del corpo umano accuratamente, dall'altra gli effetti puri dei farmaci, cioè le caratteristiche essenziali ed i sintomi di quelle specifiche malattie artificiali che essi inducono.

In questo modo, scegliendo per una certa malattia naturale quel rimedio che è capace di produrre una malattia artificiale molto simile noi saremo capaci di curare le malattie più ostinate"


STEMCELL



Developments of experimental studies on APIS M.

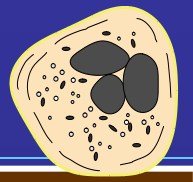
1975--1990
- High dilutions (7C-9C) of bee venom (*Apis mellifica* and *Apium virus*, which are currently used in homeopathy to treat skin manifestations with edema, erythema and pruritus) have a protective and curative effect on about 50% of X-ray induced erythema in albino guinea pig (BASTIDE1975, BILDET1989, 1990, POITEVIN1988)

1993
- Our group studied the effects of homeopathic preparations of *Apis mellifica* (and *Histamin)* on rat paw edema induced by the injection of inflammatory doses of histamine. It was observed that high dilutions of up to 30D had a small but significant inhibitory effect on the development of edema (Conforti et al.,1993).

2004
- We confirmed a small regulating effect of *Apis mellifica* (4 D, oral drops) in the carrageenan-induced edema in rats but could not reproduce it in blind trial (Conforti et al., 2004) probably for technical reasons (animals with different treatment in the same cage)

2014
- Bigagli and coworkers (2014) showed with microarray techniques that *Apis mellifica* TM modifies expression of hundreds of genes in human prostate epithelial cells; dynamized dilutions (3C, 5C and 7C) still exert significant effects on genes involved in inflammation and oxidative stress

EXAMPLES OF INVERSE EFFECTS WITH HOMEOPATHIC DILUTIONS IN LABORATORY SYSTEMS



System	Agent	"High dose" effect	"Homeopathic" effect	Ref.
Basophils	Histamine Apis mellifica	Pro-inflammatory agents	Histamine (up to 60x) and Apis mellifica (10c)	Poitevin 1988, S.Laudy 1991, Belon 1996-2004
Rat, Guinea pig	Histamine Lung Histamine Apis mellifica	Pro-inflammatory agent	Histamine (30x), Lung histamine (18c) and Apis mellifica (7c/10c) reduce inflammation symptoms	Bastide 1975,Poitevin 1988, Bildet 1990 Conforti 1993
Rat, Mouse	Arsenic trioxide Arsenicum album	Whole body and liver toxicity	Arsenic trioxide (7c and 17c) and Arsenicum album (30c) protect from intoxication	Lapp 1955; Wurmser 1955; Cazin1987; Cazin 1991; Khuda-Bukhsh 1998-2000
Wheat, hepatoma cells	Arsenic trioxide (As_2O_3)	Cell toxicity	As_2O_3 40x, 42x and 45x, stimulate germination and cell vitality	Betti 1997-2000, Wiegant-van Wijk 1998-2011
Rat liver	Phosphorus	Hepatotoxicity	Phosphorus (30x) protects from toxic hepatitis	Bildet 1984, Guillemain 1987 Palmerini 1993 Gomez 1999
Tadpoles	Thyroxine	Increases the rate of metamorposis	High dilutions (up to 30x) inhibit the metamorphosis	Endler 1990-2010, Graunke 2007, Welles 2007, Lingg 2008, Weber 2008, Guedes 2011, Harrer 2013
Mouse, rat	Gelsemium sempervirens	Toxic and convulsivant	Anxiolytic effect (2C-9C)	Marrari 2010, Gahlot 2012, Meyer 2013.
Human and rat neurons	Gelsemium sempervirens	Toxic and convulsivant	No toxicity, gene down-regulation	Venard 2011, Olioso 2014, Marzotto 2014

Marzotto et al. BMC Complementary and Alternative Medicine 2014, 14:104
http://www.biomedcentral.com/1472-6882/14/104

BMC Complementary & Alternative Medicine

RESEARCH ARTICLE Open Access

Extreme sensitivity of gene expression in human SH-SY5Y neurocytes to ultra-low doses of *Gelsemium sempervirens*

Marta Marzotto[1], Debora Olioso[1], Maurizio Brizzi[2], Paola Tononi[3], Mirco Cristofoletti[1] and Paolo Bellavite[1*]

Abstract

Background: *Gelsemium sempervirens* L. (*Gelsemium s.*) is a traditional medicinal plant, employed as an anxiolytic at ultra-low doses and animal models recently confirmed this activity. However the mechanisms by which it might operate on the nervous system are largely unknown. This work investigates the gene expression of a human neurocyte cell line treated with increasing dilutions of *Gelsemium s.* extract.

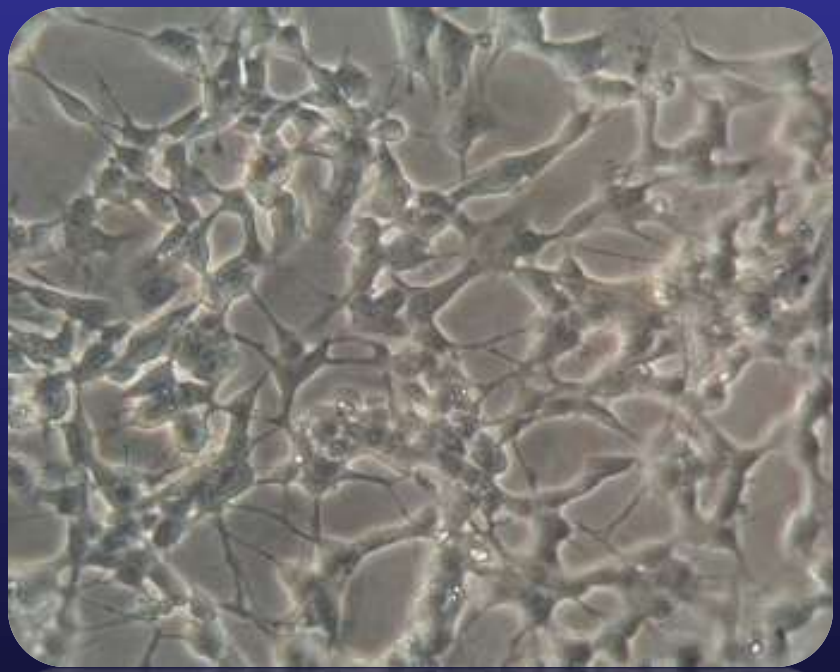
Methods: Starting from the crude extract, six 100 × (centesimal, c) dilutions of *Gelsemium s.* (2c, 3c, 4c, 5c, 9c and 30c) were prepared according to the French homeopathic pharmacopoeia. Human SH-SY5Y neuroblastoma cells were exposed for 24 h to test dilutions, and their transcriptome compared by microarray to that of cells treated with control vehicle solutions.

Results: Exposure to the *Gelsemium s.* 2c dilution (the highest dose employed, corresponding to a gelsemine concentration of 6.5×10^{-9} M) significantly changed the expression of 56 genes, of which 49 were down-regulated and 7 were overexpressed. Several of the down-regulated genes belonged to G-protein coupled receptor signaling pathways, calcium homeostasis, inflammatory response and neuropeptide receptors. Fisher exact test, applied to the group of 49 genes down-regulated by *Gelsemium s.* 2c, showed that the direction of effects was significantly maintained across the treatment with high homeopathic dilutions, even though the size of the differences was distributed in a small range.

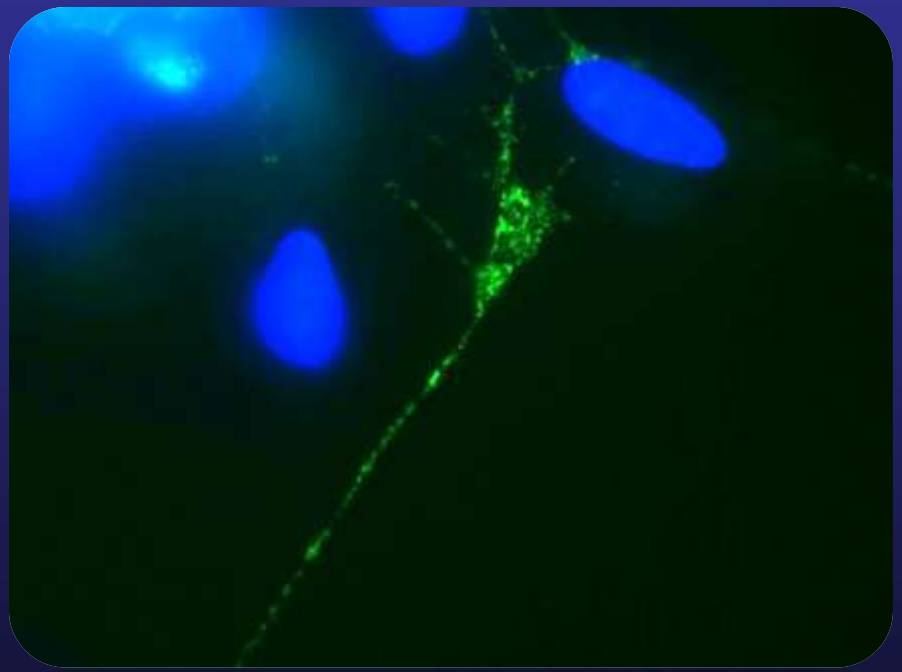
Conclusions: The study shows that *Gelsemium s.*, a medicinal plant used in traditional remedies and homeopathy, modulates a series of genes involved in neuronal function. A small, but statistically significant, response was detected even to very low doses/high dilutions (up to 30c), indicating that the human neurocyte genome is extremely sensitive to this regulation.

Our model system

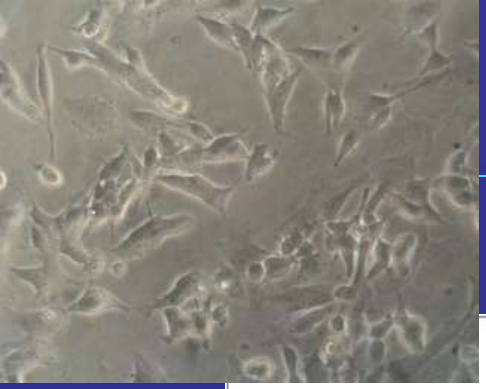
SHSY5Y neurocytes-human neuroblastoma cells



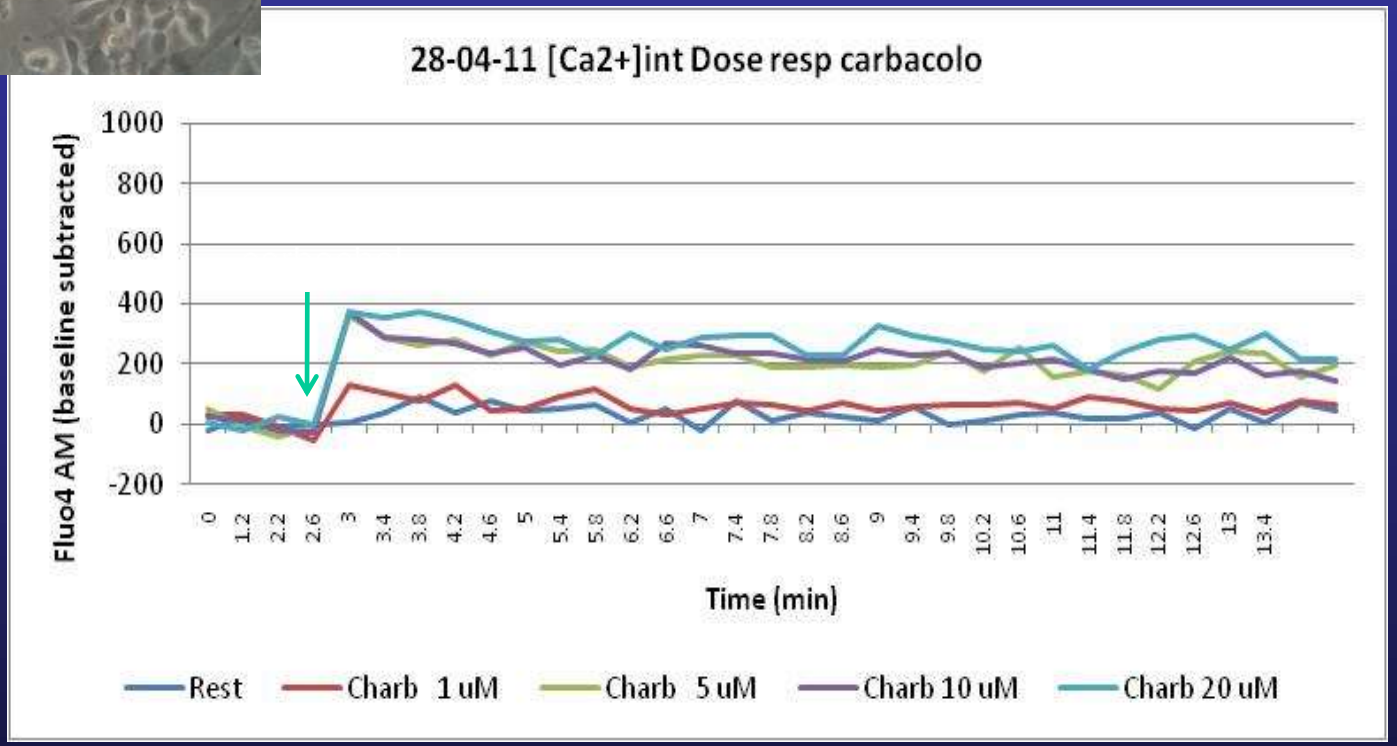
Inverted microscope image



Confocal immunofluorescent image



Our model system



Variation in the concentration of intracellular calcium in SHSY5Y cells stimulated with different doses of **carbachol**

Microarray analysis of gene expression changes in human neurocytes

Gelsemium s. dilutions (G)

Control Dilutions (Ct)

RNA →cDNA

12-samples microarray chip

4 independent replicate experiments

Replicate experiment 1 chip 1

Replicate experiment 2 chip 2

Replicate experiment 3 chip 3

Replicate experiment 4 chip 4

Extreme sensitivity of gene expression in human SH-SY5Y neurocytes to ultra-low doses of Gelsemium sempervirens

BMC Complement Altern Med. 2014 Mar 19;14(1):104.

Marta Marzotto, Debora Olioso, Maurizio Brizzi, Paola Tononi, Mirco Cristofoletti,Paolo Bellavite

Microarray analysis of gene expression changes in human neurocytes

24h

G30 G9 G5 G4 G3 G2

Ct3 Ct9 Ct5 Ct4 Ct3 Ct2

Gelsemium s. dilutions (G)

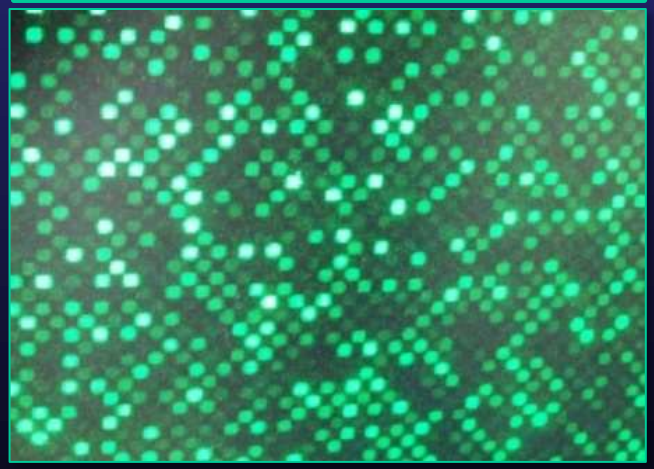
Control Dilutions (Ct)

RNA →cDNA

12-samples microarray chip

4 independent replicate experiments

- **NimbleGen chip**
- Entire human transcriptome **(45034 genes!)**



Scanning and data analysis

BMC-Complementary Alternative Medicine March 2014

Exposure to the Gelsemium s. 2CH promoted the significant down-expression of 49 while 7 genes were overexpressed

Many of these 56 genes belong to:

- neuropeptide/receptor systems
- calcium signalling
- G-protein coupled transduction systems
- inflammatory pathways

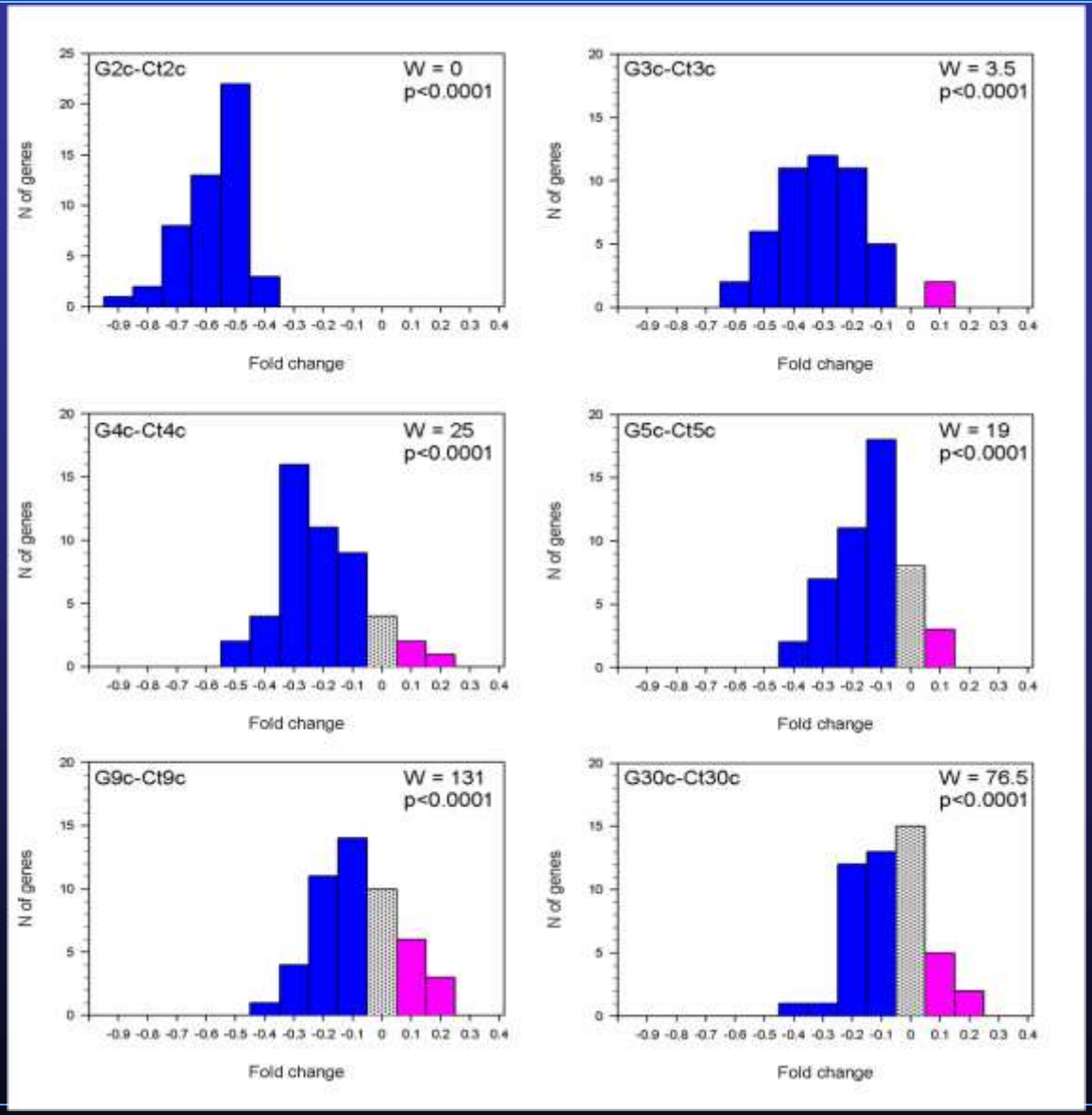
DOWN

UP

Gene ID	Transcript ID	Symbol	Log2 fold change			p^1	Description
7940	AF000424	LST1	-0.84	±	0.14	0.04	leukocyte specific transcript 1
390113	NM_001004726	OR4X1	-0.83	±	0.06	0.01	olfactory receptor, family 4, subfamily X, member 1
23746	AJ830742	AIPL1	-0.82	±	0.16	0.04	aryl hydrocarbon receptor interacting protein-like 1
284498	AL833920	C1orf167	-0.80	±	0.17	0.05	chromosome 1 open reading frame 167
221191	AK058068	Klkbl4	-0.79	±	0.12	0.04	plasma kallikrein-like protein 4
26658	NM_012377	OR7C2	-0.77	±	0.07	0.01	olfactory receptor, family 7, subfamily C, member 2
112401	BC039318	BIRC8	-0.76	±	0.11	0.00	baculoviral IAP repeat-containing 8
2848	NM_005298	GPR25	-0.75	±	0.15	0.02	G protein-coupled receptor 25
55803	NM_018404	ADAP2	-0.75	±	0.11	0.02	ArfGAP with dual PH domains 2
386676	NM_198690	KRTAP10-9	-0.73	±	0.12	0.04	keratin associated protein 10-9
4353	X04876	MPO	-0.72	±	0.15	0.04	Myeloperoxidase
N/A	AY358413	N/A	-0.71	±	0.18	0.02	Homo sapiens clone DNA59853 trypsin inhibitor
392391	NM_001001923	OR5C1	-0.71	±	0.05	0.04	olfactory receptor, family 5, subfamily C, member 1
N/A	AK094115	N/A	-0.70	±	0.11	0.04	Homo sapiens cDNA FLJ36796 fis, clone ADRGL2006817
55287	BC020658	TMEM40	-0.70	±	0.15	0.02	transmembrane protein 40
54209	NM_018965	TREM2	-0.69	±	0.10	0.02	triggering receptor expressed on myeloid cells 2
150365	AK097834	RP5-821D11.2	-0.68	±	0.17	0.02	similar to mouse meiosis defective 1 gene
400934	NM_207478	FLJ44385	-0.68	±	0.09	0.04	FLJ44385 protein
255061	NM_170685	TAC4	-0.67	±	0.14	0.01	tachykinin 4 (hemokinin)
644065	XM_931993	LOC644065	-0.65	±	0.23	0.04	hypothetical protein LOC644065
1339	NM_005205	COX6A2	-0.64	±	0.17	0.01	cytochrome c oxidase subunit VIa polypeptide 2
N/A	AK128093	N/A	-0.63	±	0.09	0.04	Homo sapiens cDNA FLJ46214 fis, clone TESTI4012623.
53841	AY358368	CDHR5	-0.63	±	0.11	0.04	mucin-like protocadherin
9332	NM_004244	CD163	-0.63	±	0.18	0.03	CD163 molecule
441239	XM_499305	LOC441239	-0.63	±	0.22	0.05	hypothetical gene supported by BC063653
7164	NM_001003397	TPD52L1	-0.62	±	0.09	0.02	tumor protein D52-like 1
11136	NM_014270	SLC7A9	-0.62	±	0.09	0.04	solute carrier family 7 member 9
389084	NM_206895	UNQ830	-0.62	±	0.11	0.04	ASCL830
400224	XM_375090	FLJ44817	-0.62	±	0.20	0.04	similar to pleckstrin homology domain protein (5V327)
647240	XM_934559	LOC647240	-0.60	±	0.06	0.00	hypothetical protein LOC647240
846	BC104999	CASR	-0.59	±	0.06	0.00	calcium-sensing receptor
116123	NM_138784	RP11-45J16.2	-0.58	±	0.09	0.04	flavin-containing monooxygenase pseudogene
644280	XM_497769	LOC644280	-0.58	±	0.06	0.05	hypothetical protein LOC644280
57452	AB032956	GALNTL1	-0.57	±	0.17	0.05	alpha-D-galactosamine N-acetylgalactosaminyltransferase
414301	NM_001001711	DDI1	-0.56	±	0.11	0.04	DDI1, DNA-damage inducible 1, homolog 1 (*S. cerevisiae*)
116535	BC016964	MRGPRF	-0.55	±	0.17	0.01	MAS-related GPR, member F
8811	NM_003857	GALR2	-0.55	±	0.07	0.04	galanin receptor 2
10880	NM_006686	ACTL7B	-0.55	±	0.12	0.04	actin-like 7B
6368	NM_145898	CCL23	-0.55	±	0.11	0.05	chemokine (C-C motif) ligand 23
64581	BC071746	CLEC7A	-0.54	±	0.08	0.04	C-type lectin domain family 7, member A
644003	XM_927256	LOC644003	-0.54	±	0.11	0.04	similar to Mucin-2 precursor (Intestinal mucin 2)
643514	XM_931594	LOC643514	-0.54	±	0.10	0.03	hypothetical protein LOC643514
374569	XM_935431	LOC374569	-0.54	±	0.07	0.04	Similar to Lysophospholipase
84504	BC101635	NKX6-2	-0.53	±	0.13	0.03	NK6 transcription factor related, locus 2 (Drosophila)
732	NM_000066	C8B	-0.53	±	0.06	0.05	complement component 8, beta polypeptide
146336	NM_182510	FLJ32252	-0.52	±	0.03	0.01	hypothetical protein FLJ32252
150763	BC042847	LOC150763	-0.51	±	0.10	0.04	hypothetical protein LOC150763
2020	NM_001427	EN2	-0.51	±	0.08	0.04	engrailed homolog 2
646258	XM_929203	LOC646258	-0.51	±	0.11	0.04	hypothetical protein LOC646258
154872	NM_001024603	LOC154872	0.51	±	0.10	0.03	hypothetical LOC154872
400866	NM_001001789	C21orf24	0.52	±	0.12	0.05	chromosome 21 open reading frame 24
9457	NM_020482	FHL5	0.55	±	0.19	0.04	four and a half LIM domains 5
55816	NM_018431	DOK5	0.56	±	0.04	0.03	docking protein 5
1446	NM_001890	CSN1S1	0.57	±	0.09	0.04	casein alpha s1
285600	AK130941	KIAA0825	0.63	±	0.06	0.01	KIAA0825 protein
57538	NM_020778	ALPK3	0.76	±	0.10	0.01	alpha-kinase 3

Effects of Gelsemium on expression of 49 Gels C2-down-regulated genes

[Gelsemine]= 1.3 x10^{7} molecule/cell



1.3 x10^{5} molecule/cell

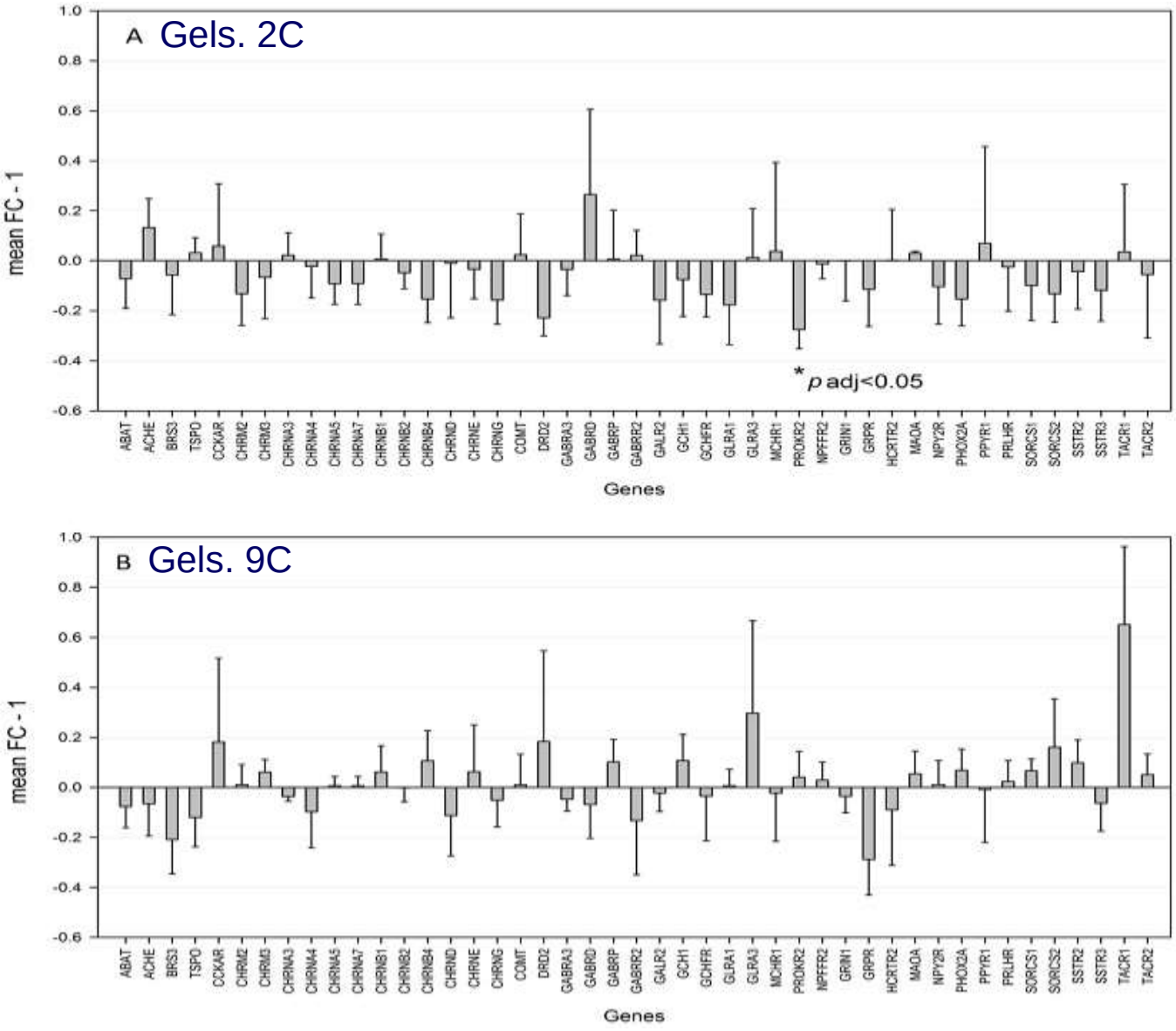
1.3 x 10^{3} molecule/cell

13 molecules/cell

0 molecule/cell

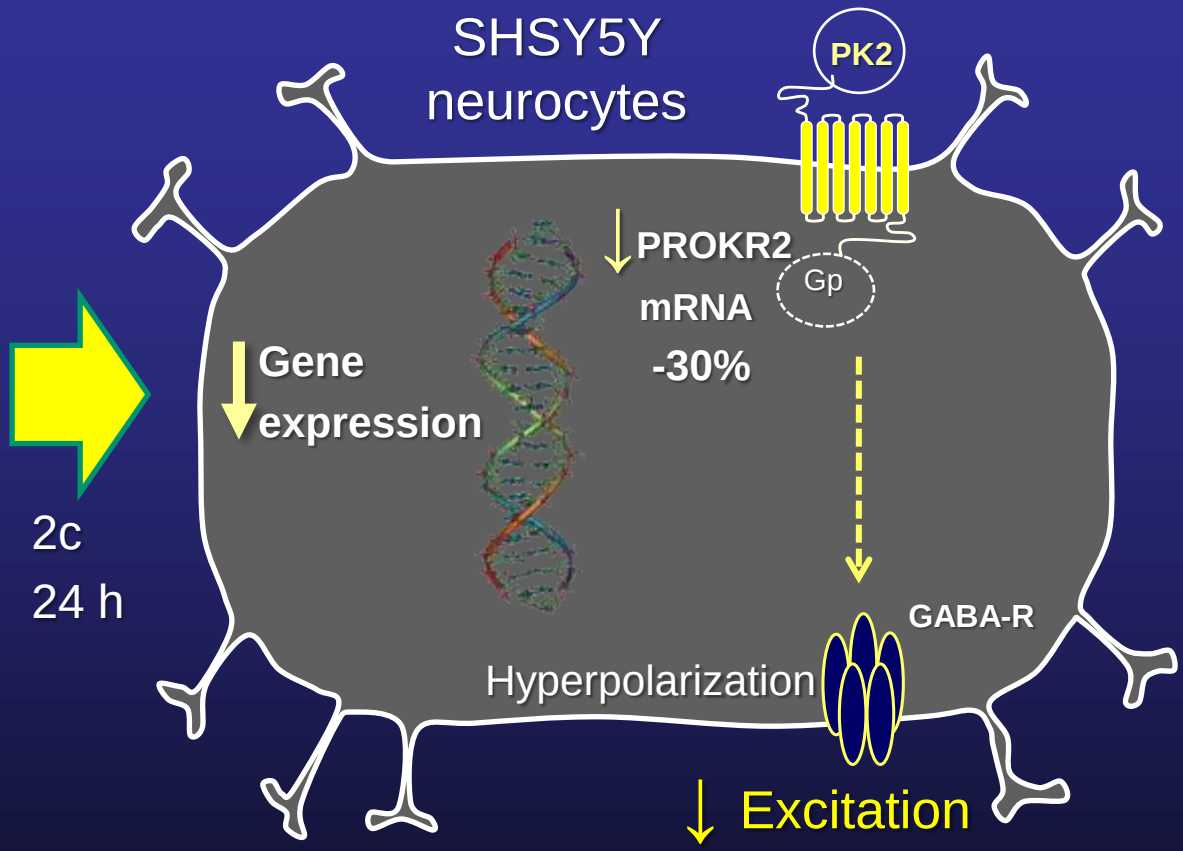
0 molecule/cell

RT-Array su panel di geni di recettori

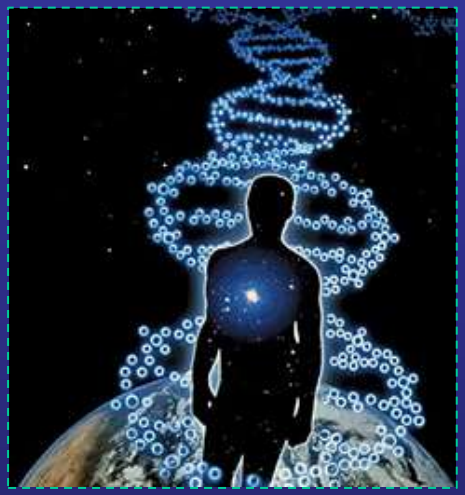


RT-Array on

Gelsemium sempervirens L.



Nei neuroni umani in coltura 49 GENI su of 45034 testati sono regolati da alte diluizioni/dinamizzazioni di of Gelsemium sempervirens



L'espressione genica

→ È sensibile a informazioni di bassissima energia

→ È complessa e olografica

→ È influenzata dallo stato del mezzo acquoso

NUOVO SPAZIO PER UNA OMEOPATIA SCIENTIFICA!

L'espressione genica

→ È individualizzata per definizione (polimorfismi)

→ È influenzata dinamicamente dalla storia patobiografica (epigenetica)

Grazie a Lui dell'ispirazione

Cimitero Père Lachais
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