



**5th BULGARIAN ACUPUNCTURE CONGRESS
SOFIA 26-28 OCTOBER 2012
SCIENTIFIC BASIS OF VETERINARY
ACUPUNCTURE**

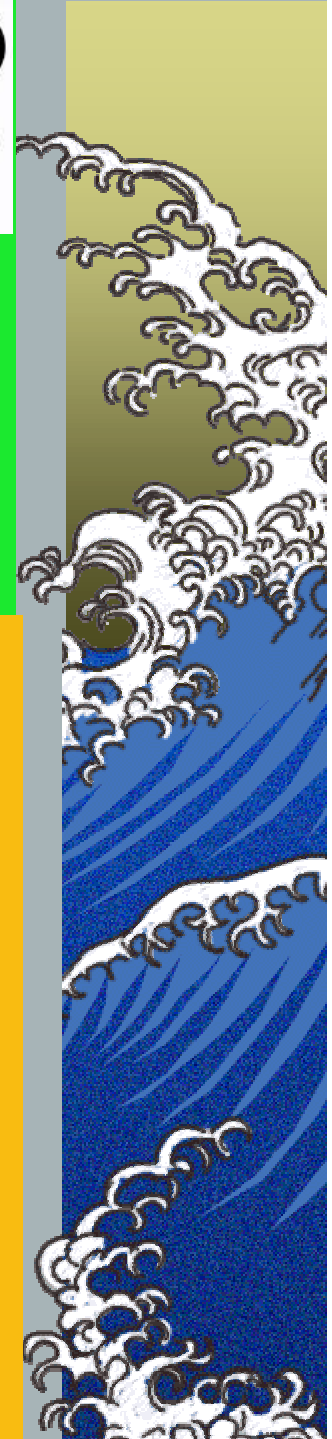
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**ITALIAN VETERINARY ACUPUNCTURE SOCIETY
ITALIAN VETERINARY ACUPUNCTURE CLINICAL CENTRE**

www.siaav-itvas.org

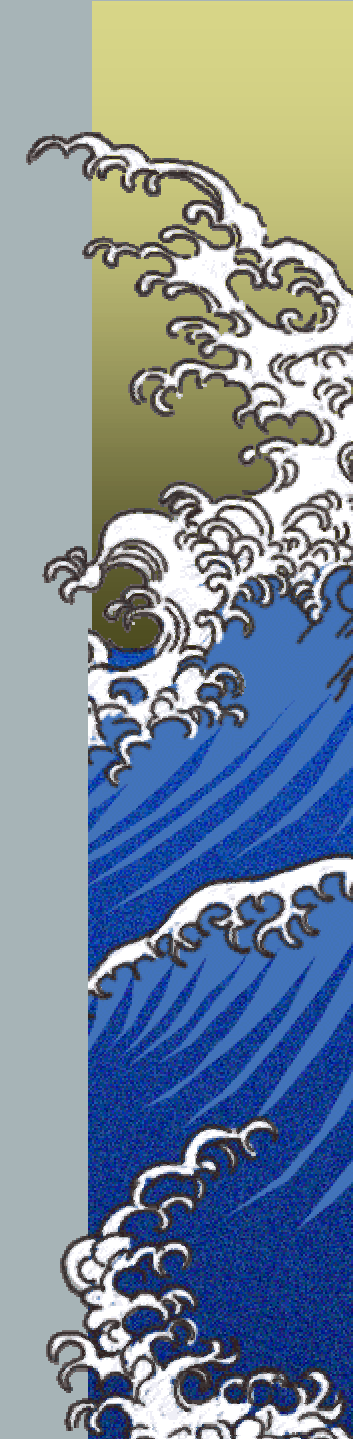


SCIENTIFIC BASIS OF VETERINARY ACUPUNCTURE



Prof. Li Xiaoming:

**“CHINESE PEOPLE HAS INVENTED
ACUPUNCTURE, BUT WESTERN
PEOPLE WILL DEMONSTRATE ITS
VALIDITY”**





SCIENTIFIC BASIS OF VETERINARY ACUPUNCTURE



TREATMENT ACUPOINTS ARE SELECTED ON THE BASIS OF THE TRADITIONAL INDICATION REGARDING THEIR ENERGY AS WELL AS EXPERIMENTAL EVIDENCE



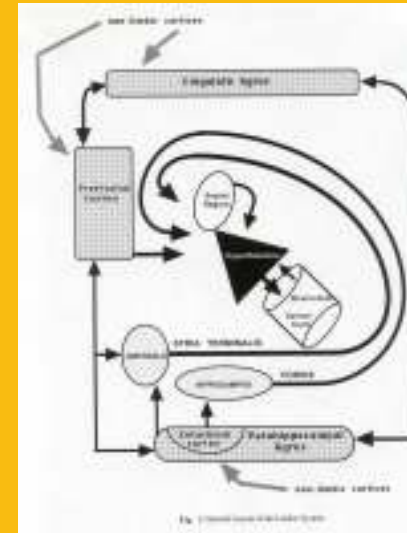
THEIR ACTION MANIFEST ITSELF AT DIFFERENT LEVELS



- **ANTALGIC**
- **ANTI – INFLAMMATORY**
- **NEUROENDOCRINE**
- **TROPHIC**
- **VASOMODULATOR ACTIVITY**



INTEGRATED SYSTEM THAT ELICITS SPECIFIC FUNCTIONAL RESPONSES





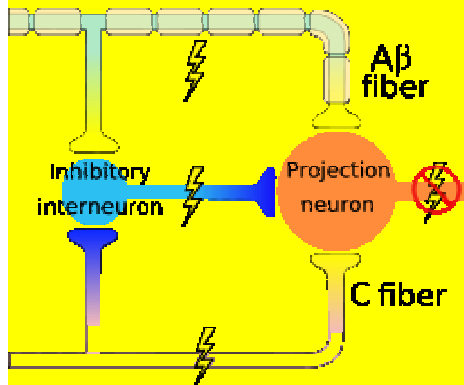
SCIENTIFIC BASIS OF VETERINARY ACUPUNCTURE



ANTALGIC EFFECT IT INVOLVES 4 LEVELS:

1) SEGMENTARY – SPINAL LEVEL:

Melzack and Wall (1965)
"GATE CONTROL SYSTEM"



ACUPUNCTURE

A β FIBRES (myelinated, group II, diameter 6 - 11 μ , velocity 30 – 72 m/sec)

GABA NEURON

BLOCK of the PAIN CONDUCTION at PRE SYNAPTIC LEVEL
(Roland Substance)





SCIENTIFIC BASIS OF VETERINARY ACUPUNCTURE



1) SEGMENTARY – SPINAL LEVEL:

Bowsher (1990): ACUPUNCTURE



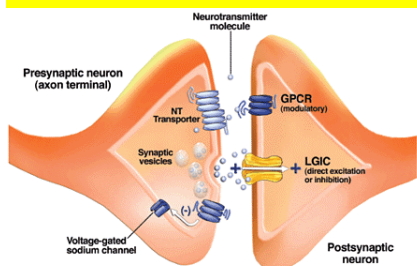
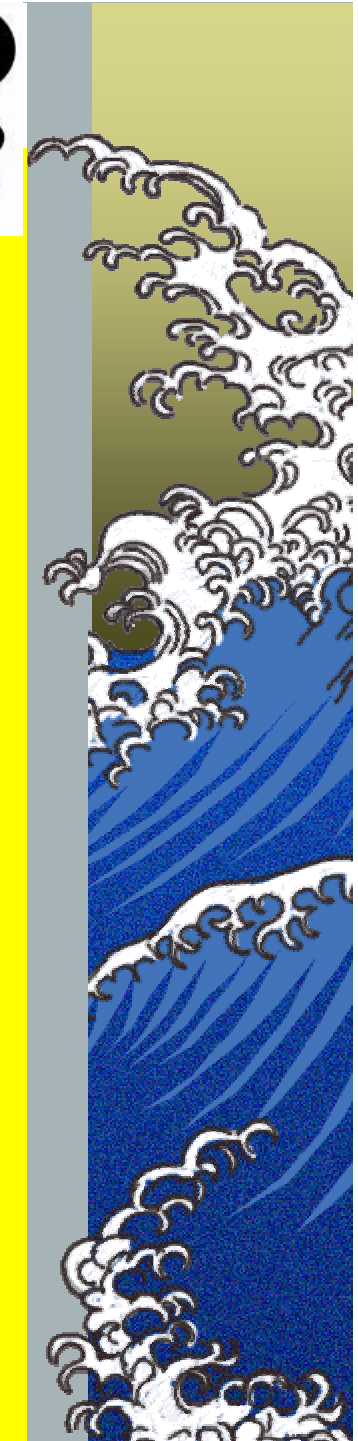
A δ FIBRES: (myelinated, group III,
diameter 1 – 5 μ , velocity 4 - 30 m/sec)



ENKEPHALIN / DINORPHIN NEURON

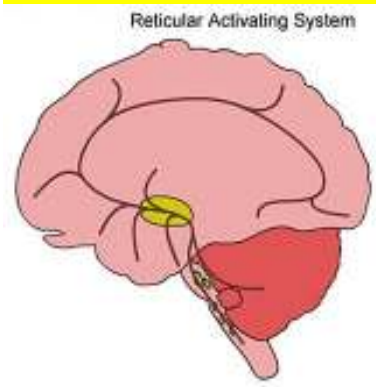


**BLOCK of the PAIN CONDUCTION at POST
SYNAPTIC LEVEL
(Roland Substance)**





2) MESENCEPHALON: ACUPUNCTURE



↓
ENKEPHALIN NEURON

↓
RETICULAR FORMATION

↓
SEROTONIN INIBITOR SYSTEM

↓
NORADRENALINE INIBITOR SYSTEM

↓
SEROTONIN

↓
NORADRENALINE

↓
BLOCK of the PAIN CONDUCTION

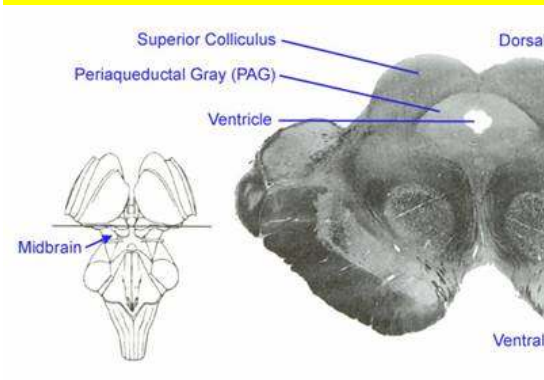




SCIENTIFIC BASIS OF VETERINARY ACUPUNCTURE



2) MESENCEPHALON: Liu et alii (1997)



ACUPUNCTURE



PAG



ANGIOTENSIN



B RECEPTORS



BLOCK of the PAIN CONDUCTION





SCIENTIFIC BASIS OF VETERINARY ACUPUNCTURE



3) DIENCEPHALON:



ACUPUNCTURE



β-ENDORPHIN



THALAMUS_{L51} – HYPOTHALAMUS_{L21} – HYPOPHYSIS_{L61}



SCOPOLAMINE – DOPAMINE – SEROTONIN

C17H21NO4

C6H3(OH)2-CH2-CH2-NH2

C10H12N2O

ENDOGENOUS OPIOIDS



ANALGESIC ACTION





SCIENTIFIC BASIS OF VETERINARY ACUPUNCTURE



4) CORTICAL:

ACUPUNCTURE



SOMATOSENSORY AREA I
SOMATOSENSORY AREA II



PYRAMIDAL WAY
EXTRAPYRAMIDAL WAY

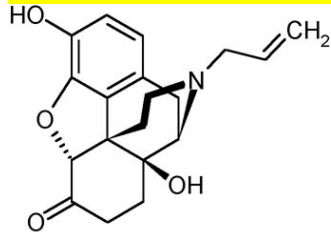


**BLOCK of the
NOCICEPTION REACTION**





Meyer (1981) NALOXONE BLOCKS THE ANALGESIA BY ENDORPHIN



Zhang (1972) - Pomerant e Sjolund
(1975)

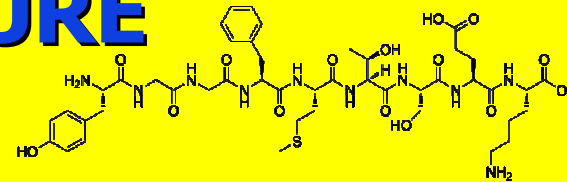
ACUPUNCTURE



β -ENDORPHIN



ANALGESIA





Han Jisheng (1979)

MORE ACUPUNCTURE SESSIONS



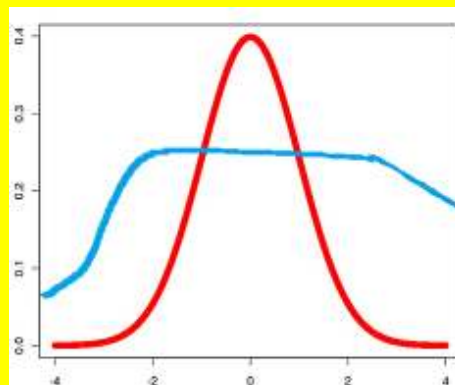
β -ENDORPHIN

LOWER QUANTITY/FREQUENCY HIGHER



EXTENDED PAIN ATTENUATION

WELLBEING





SCIENTIFIC BASIS OF VETERINARY ACUPUNCTURE



ITALIAN VETERINARY ACUPUNCTURE CLINICAL CENTER BOLOGNA - ITALY

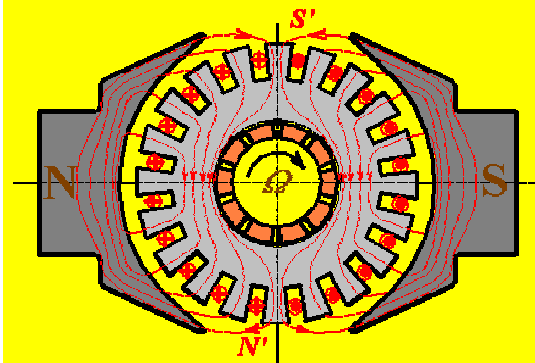
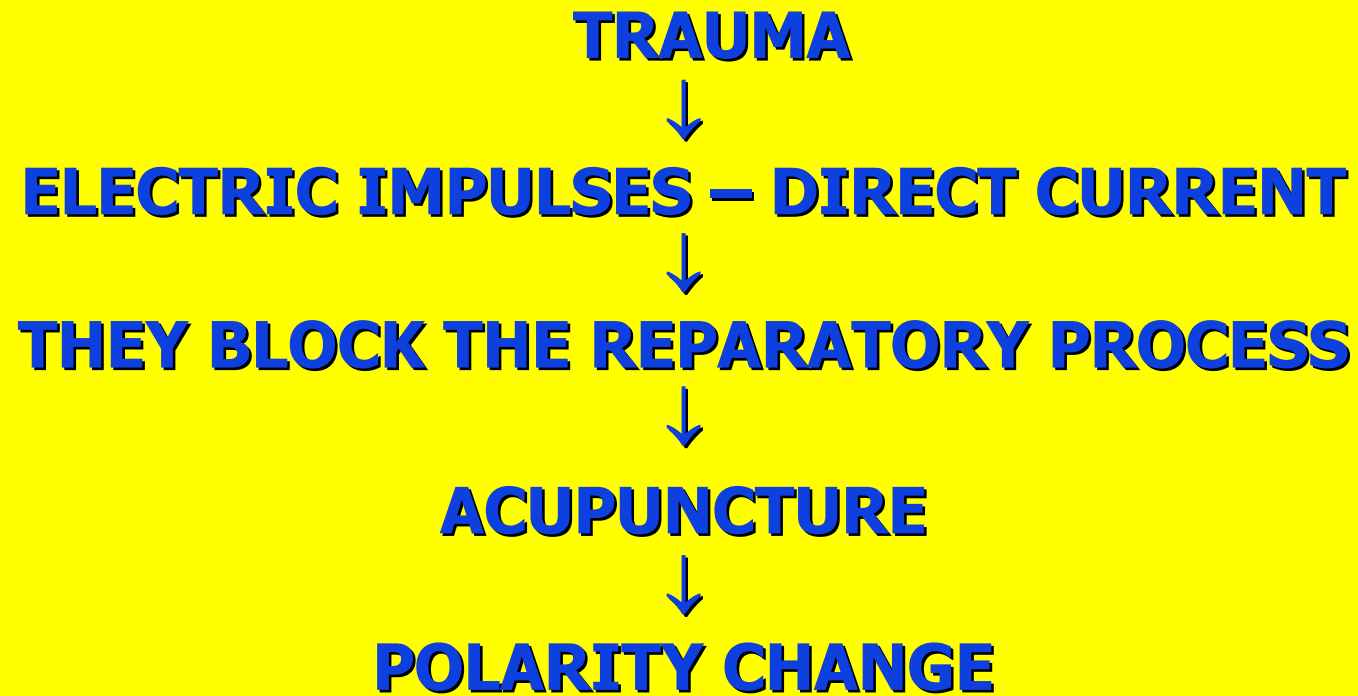




SCIENTIFIC BASIS OF VETERINARY ACUPUNCTURE



Becker - Reichmanis (1975)

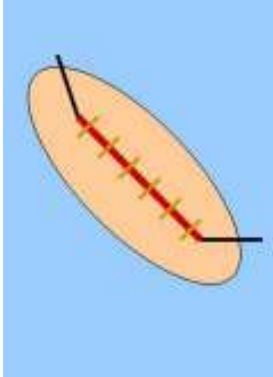




SCIENTIFIC BASIS OF VETERINARY ACUPUNCTURE

ACUPUNCTURE AFTER SURGERY:

LUN HUAN CHIAO TI FA TECHNIQUE



**F. Longo – D. Bettio (2007): "Acupuncture Analgesia during Dog Surgery"
Proceedings of the 1st Congress of Veterinary Homeopathy, Verona, Italy.**

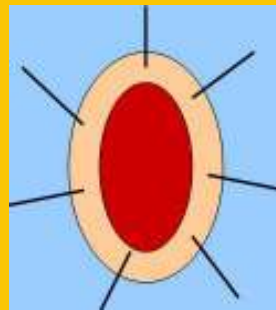




SCIENTIFIC BASIS OF VETERINARY ACUPUNCTURE



LUN HUAN CHIAO TI FA TECHNIQUE



Mayr G. - Longo F. (2010)
WOUND HEALING BY
ACUPUNCTURE
*WOUND CARE IN VETERINARY
MEDICINE - WORKSHOP*

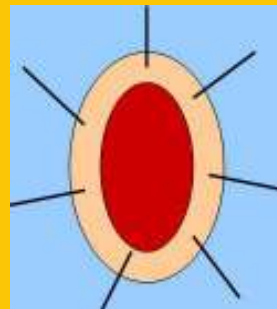




SCIENTIFIC BASIS OF VETERINARY ACUPUNCTURE



LUN HUAN CHIAO TI FA TECHNIQUE





SCIENTIFIC BASIS OF VETERINARY ACUPUNCTURE



**IMMUNOREGULATING
ANTI – INFLAMMATORY EFFECTS**

**Tykochinskaia (1960) - Omura (1975)
ACUPUNCTURE**



**INCREASE IN ANTIBODIES and in
PHAGOCYTOSIS**



➤ **ZUSANLI – QUCHI**



INCREASE IN SERUM ANTIBODIES



SANYINJIAO



T LYMPHOCYTES PRODUCTION





SCIENTIFIC BASIS OF VETERINARY ACUPUNCTURE

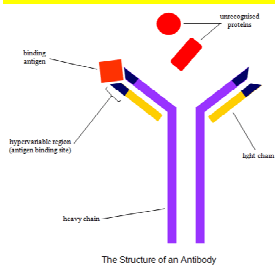


IMMUNOREGULATING ANTI – INFLAMMATORY EFFECTS

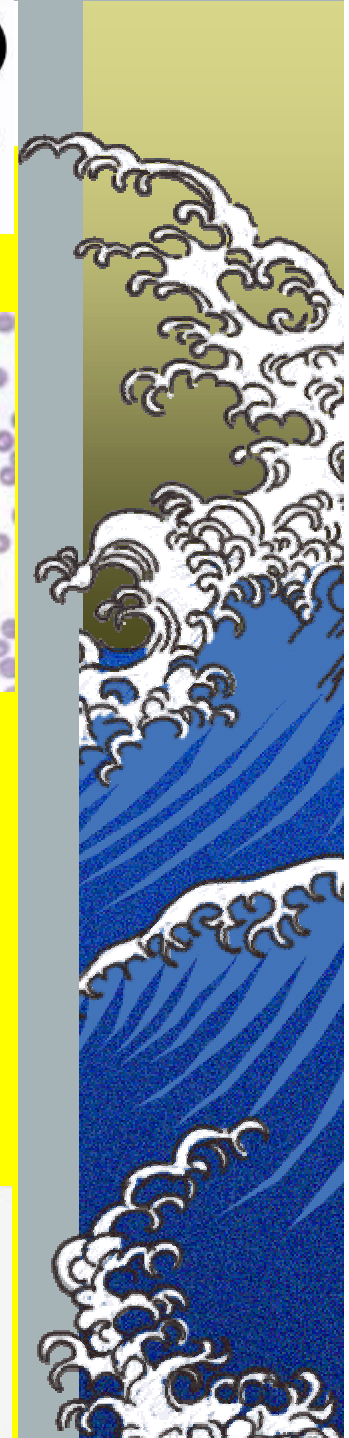
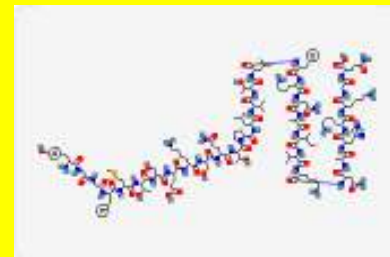
HIGHER NEUTROPHILS ACTIVITY



INCREASE IN ANTIBODY IN VACCINATED ANIMALS



[β -ENDORPHIN]



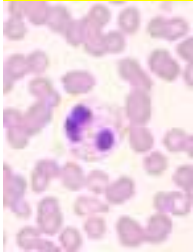


SCIENTIFIC BASIS OF VETERINARY ACUPUNCTURE



ANTIALLERGIC ACTION

- INCREASE IN ENDOGENOUS ACTH
- REDUCTION IN E IMMUNOGLOBULINE
- REDUCTION IN EOSINOPHILS



ANTIPIRETTIC ACTION



β -ENDORPHIN
NORADRENALINE





SCIENTIFIC BASIS OF VETERINARY ACUPUNCTURE



NEUROENDOCRINE REGULATION

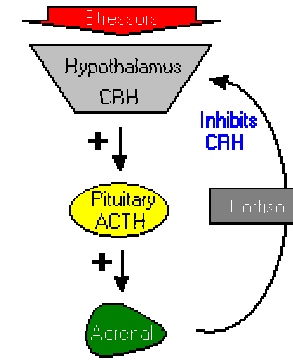
ACUPUNCTURE



ACTH



INCREASE IN CORTISOL



CHENGFU → HYDROCORTISONE

ADAPTATION SYNDROME



INCREASE IN ALARM REACTION



SCIENTIFIC BASIS OF VETERINARY ACUPUNCTURE

**NAVICULAR DISEASE
IN ADVANCED FORMS**

LASERPUNCTURE

**SIGNIFICANT
ANTI-INFLAMMATORY
ANALGESIC EFFECTS**

**IT PROMOTES:
TISSUE GROWTH**

**INCREASES CIRCULATION
INCREASE MICROCIRCULATION**



**NAVICULAR DISEASE
LASER STIMULATION**

**A MARKED DROP ($\pm 50\%$)
IN LEVELS OF
ENDOGENOUS CORTISOL**

**LOWER STATE
OF STRESS
PRODUCED**

IN ALL OF HORSES

**Canavesio E., Giommi D.W., Longo F. (2002)
Production of the Endogenous Cortisol by Laserpuncture;
Italian Journal of TCM**



SCIENTIFIC BASIS OF VETERINARY ACUPUNCTURE

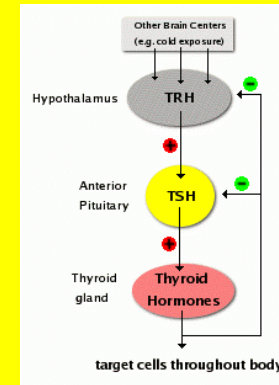


NEUROENDOCRINE REGULATION

ACUPUNCTURE



NORMALIZATION of T3 – T4 (THYROID HORMONES)



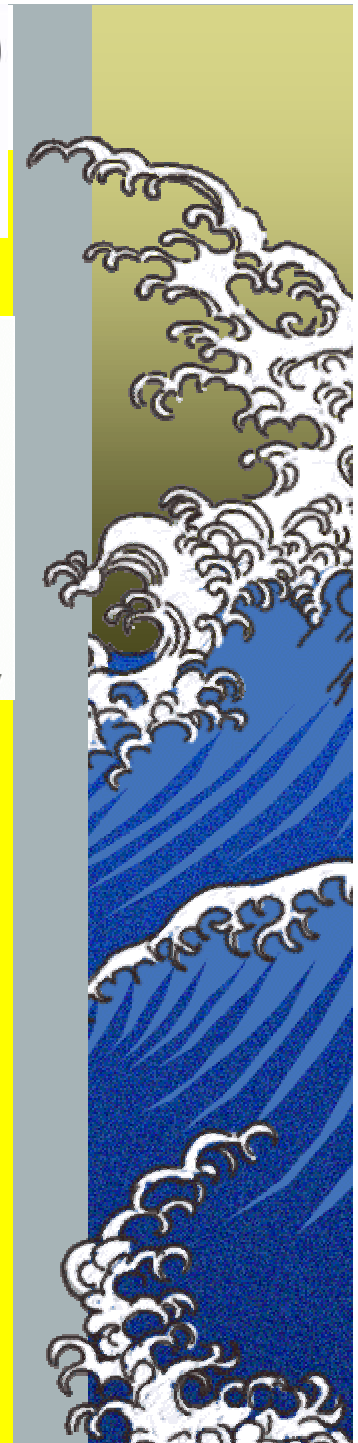
Moxa on ZUSANLI → INCREASE IN INSULIN



ZHONGWAN



INCREASE IN INSULIN DECREASE IN GLYCEMIA





NEUROENDOCRINE REGULATION

XINSHU



INCREASE IN URINE VOLUME
DECREASE IN SODIUM EXCRETION
INCREASE IN ALDOSTERONE



XIAOCHANGSHU



DECREASE IN URINE VOLUME
DECREASE IN SODIUM EXCRETION
INCREASE IN ALDOSTERONE



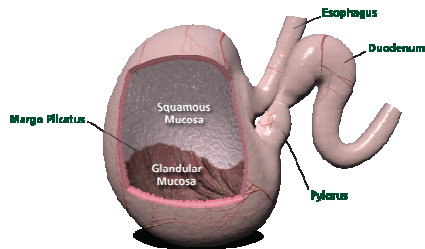


SCIENTIFIC BASIS OF VETERINARY ACUPUNCTURE



NEUROENDOCRINE REGULATION

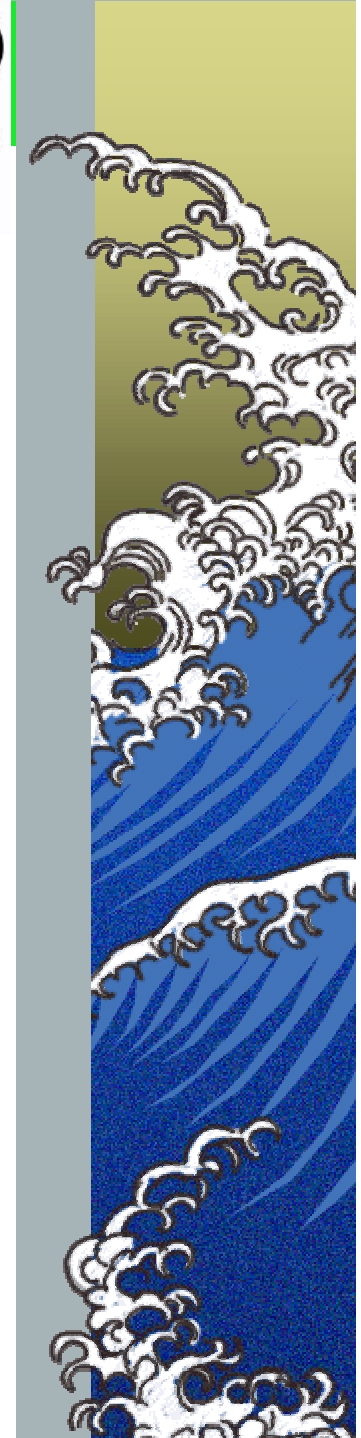
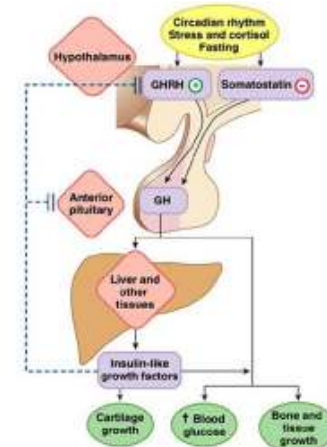
CONTROL ON GASTRIN
INHIBITION ON ACID SECRETION



↓
PREVENTION OF GASTRITIS

DIRECT STIMULATION OF GH

↓
MUSCLE – SKELETAL DISEASES





SCIENTIFIC BASIS OF VETERINARY ACUPUNCTURE



ITALIAN VETERINARY ACUPUNCTURE CLINICAL CENTER BOLOGNA - ITALY

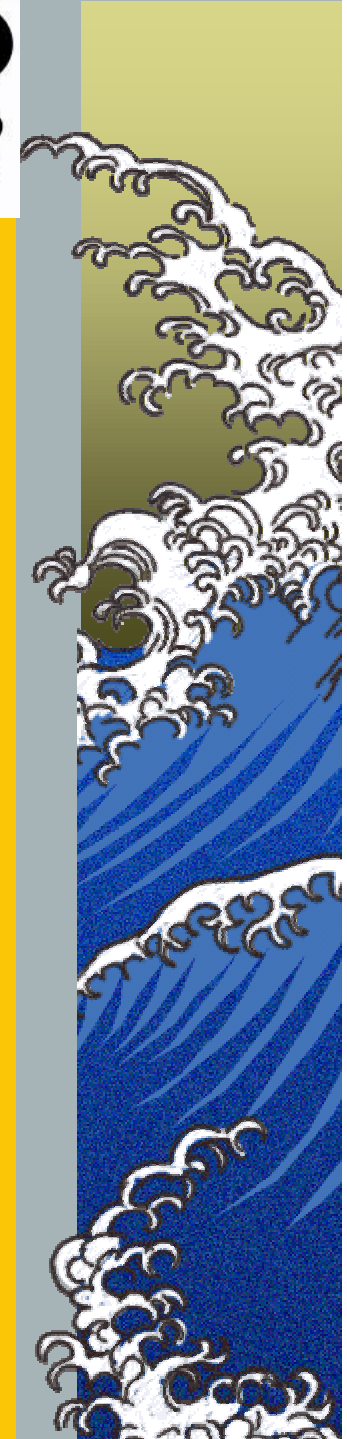




SCIENTIFIC BASIS OF VETERINARY ACUPUNCTURE



ACUPOINT	FUNCTION
BL 1 (<i>Jingming</i>)	Stimulation of epiphysis – hypothalamus - hypophysis
BL 23 (<i>Shenshu</i>)	Regulation of hematic flow in uterine arteries
BL 67 (<i>Zhiyin</i>)	Stimulation of the uterus Correction the fetal malposition Induction of parturition
PC 6 (<i>Neiguan</i>)	Activation of Hypothalamus and Amygdala
SP 6 (<i>Sanyinjiao</i>)	Secretion of 17 – β – Estradiol Stimulation of myometrium
KI 9 (<i>Zhubin</i>)	Anti-abortionifacient eugenics promote parturition





SCIENTIFIC BASIS OF VETERINARY ACUPUNCTURE



ACUPOINT	FUNCTION
LV 3 (<i>Taichong</i>)	Stimulation of the myometrium
LI 4 (<i>Hegu</i>)	Activation of the sympathetic system at the Kidney level Activation of Hypothalamus Induction of parturition
ST 36 (<i>Zusanli</i>)	Dopamine increase in the cerebral section and cortex Activation of Hypothalamus and Accumbens nucleus (<i>modulation of limbic system</i>)
CV 12 (<i>Zhongwan</i>)	Reduction of glycaemia
CV 17 (<i>Shanzhong</i>)	Secretion of the Prolactine
GV 20 (<i>Baihui</i>)	Euphoriant effect





SCIENTIFIC BASIS OF VETERINARY ACUPUNCTURE



ITALIAN VETERINARY ACUPUNCTURE CLINICAL CENTER BOLOGNA - ITALY





MUSCULAR SYSTEM

STRIATED MUSCLE



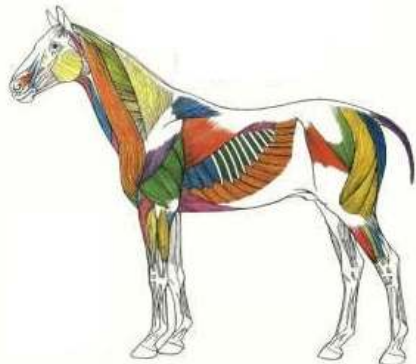
**DECREASE IN FIBRILLATION INCREASE IN
MOTOR POTENTIAL INCREASE IN POLYPHASES
POTENTIAL**



IMPROVEMENT IN NEURO MUSCLE FUNCTION



PARESIS / PARALYSIS





SCIENTIFIC BASIS OF VETERINARY ACUPUNCTURE



MUSCULAR SYSTEM

SMOOTH MUSCLE



STOMACH PERISTALTICIS
ESOPHAGEAL PROBLEMS

ALLERGIC ASTHMA

EFFORT ASTHMA

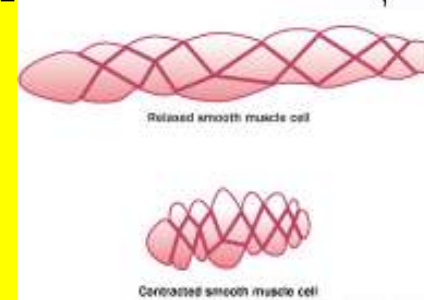
NEIGUAN → **ARRHYTHMIA**

UNEVEN PULSE RATE

HEGU → **PROMOTES URINATION**

ZHONGLIAO → **NEUROLOGICAL**

(TRAUMA) BLADDER





SCIENTIFIC BASIS OF VETERINARY ACUPUNCTURE



VASOMOTOR TROPHIC ACTION



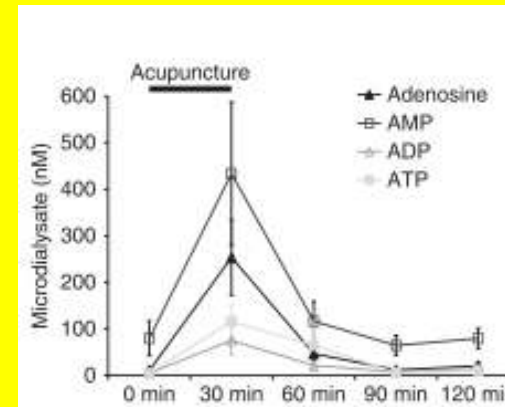
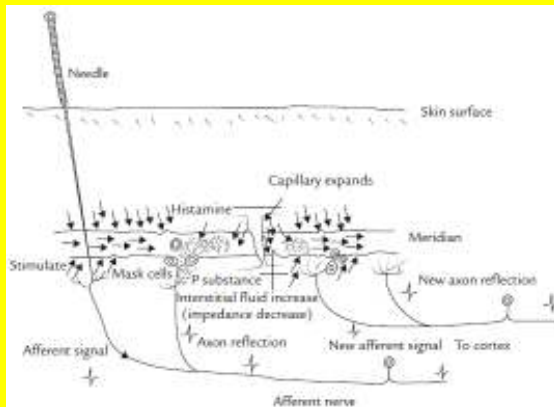
NERVOUS and BIOHUMORAL MECHANISM



CONTROL ON BLOOD CIRCULATION



IMPROVEMENT OF THE TISSUE TROPHISM





SCIENTIFIC BASIS OF VETERINARY ACUPUNCTURE

NEEDLE



MICROTRAUMA



12th HAGEMAN FACTOR



MICROCOAGULATION



PLASMIN – QUININE - COMPLEMENT



MASTZELLEN

INCREASE OF THE TISSUE PERFUSION

MYORELAXATION

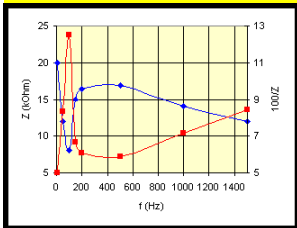
RECURRENT STIMULATION → INCREASE LOCAL ANSWER





ACUPOINT

HORNLY LAYER MORE SUBTIL
MORE NUMBER OF SENSITIVE CORPUSCLES
FREE NERVE ENDINGS
BLOOD and LYMPHATIC VESSELS
MASTZELLEN



- **REDUCED ELECTRIC IMPEDANCE OF THE SKIN**
- **INCREASE OF THE SKIN TEMPERATURE**
- **INCREASE OF THE SENSITIVITY AT PRESSURE**





SCIENTIFIC BASIS OF VETERINARY ACUPUNCTURE



ACUPOINT

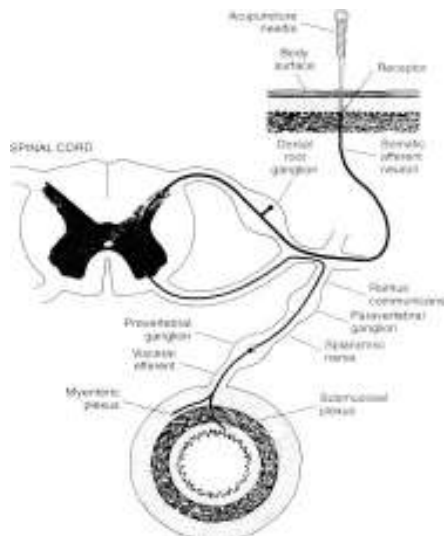
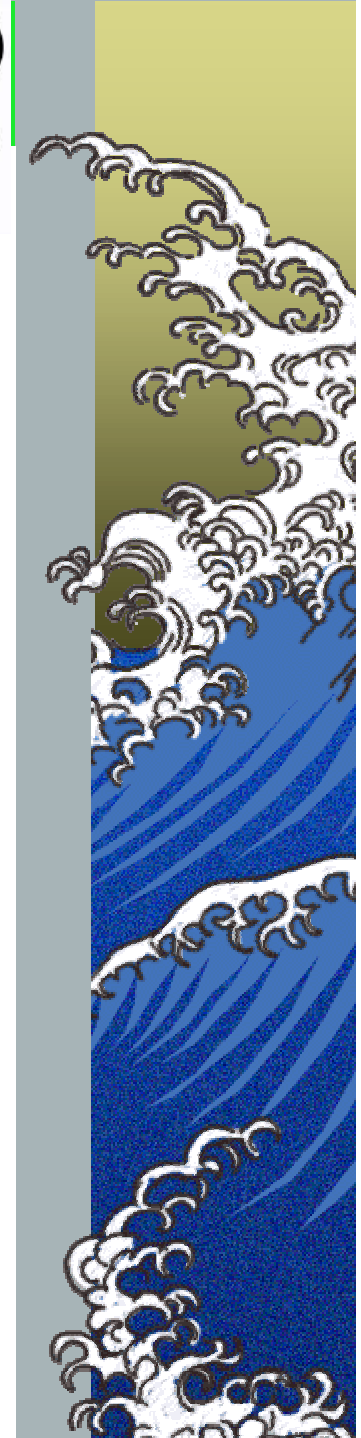
Kothbauer e Schwartz (1990)

BEI SHU POINTS

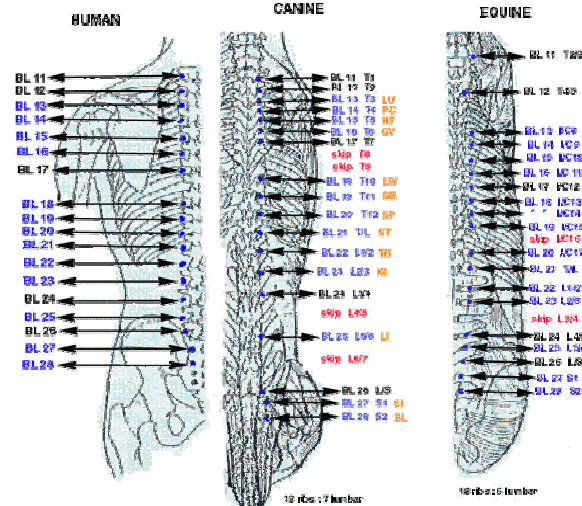
(REFLEXION AREAS OF SOMATIC PAIN DERIVING FROM INTERNAL ORGANS)



DIAGNOSTIC and THERAPEUTIC EMPLOYMENT



BLADDER POINT COMPARISON



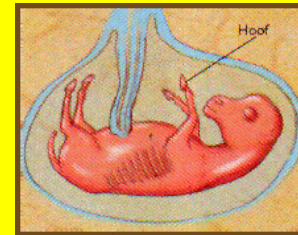


EMBRYOLOGY

GASTRULA: ECTODERM



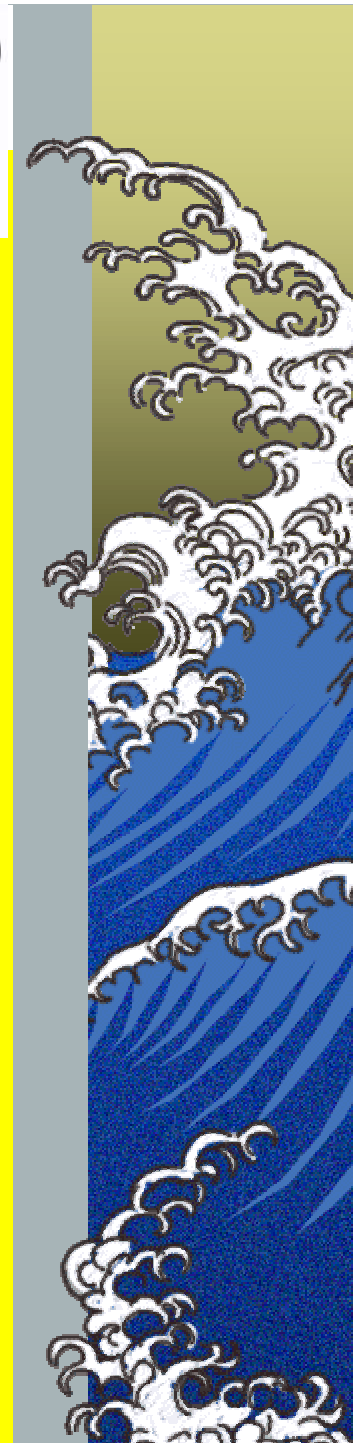
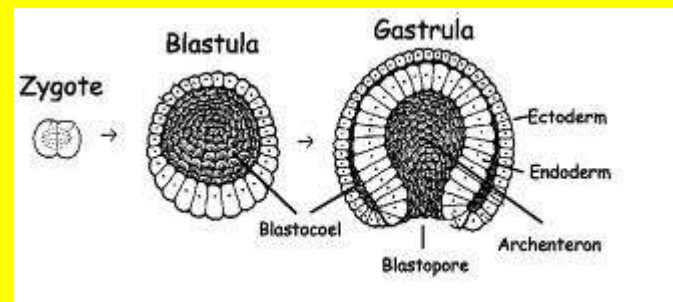
**C.N.S.
EPIDERMIS**



**LINK BETWEEN ENERGETIC CHANNELS and
INTERNAL ORGANS**



**ZANG / FU ORGANS DERIVE FROM SAME
EMBRYONAL PATTERN**





SCIENTIFIC BASIS OF VETERINARY ACUPUNCTURE



ITALIAN VETERINARY ACUPUNCTURE CLINICAL CENTER BOLOGNA - ITALY



ENGRAMS

**COOPERATION SCHEME OF THE
NERVOUS BUNDLES AT NCS LEVEL**



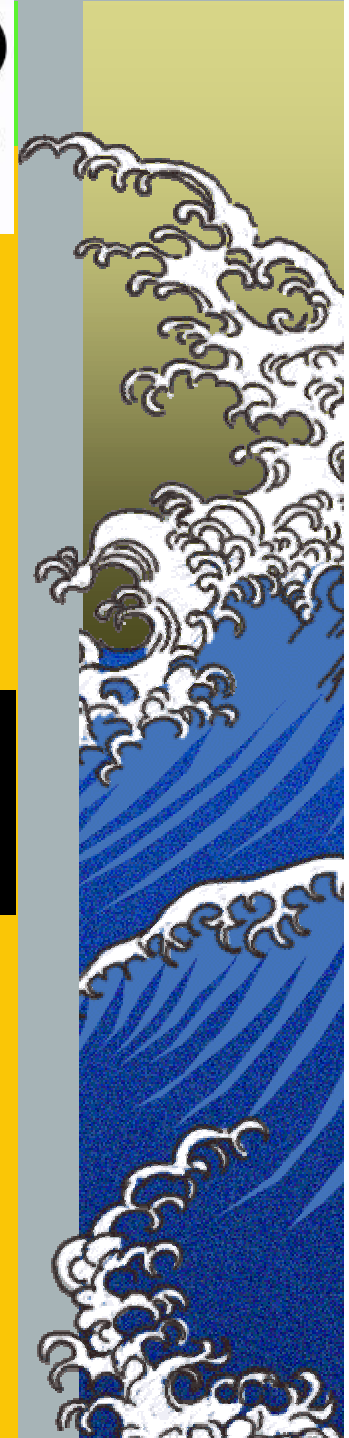
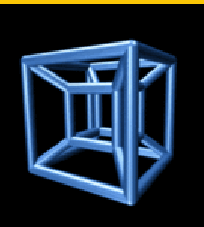
**TRACES OF INFORMATIVE
CONTENTS**



NEUROGRAMMA



MEMORY



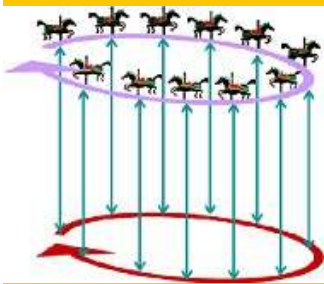
SCIENTIFIC BASIS OF VETERINARY ACUPUNCTURE

ENGRAMS

HIPPOCAMPUS
AMYGDALA
PAG
CEREBELLAR CORTEX
CEREBELLAR NUCLEUS

GABA
ADRENALINE
NORADRENALINE
SEROTONIN

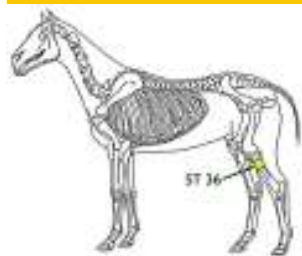
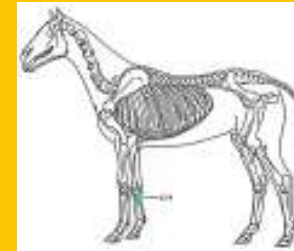
PERSISTENT
or
RECURRENT
or
SEASONAL
DISEASES





LI 4 (*HEGU*)

**IT ACTS ON HYPOTHALAMUS
ACCUMBENS NUCLEUS
GYRUS CINGULI
HIPPOCAMPUS**

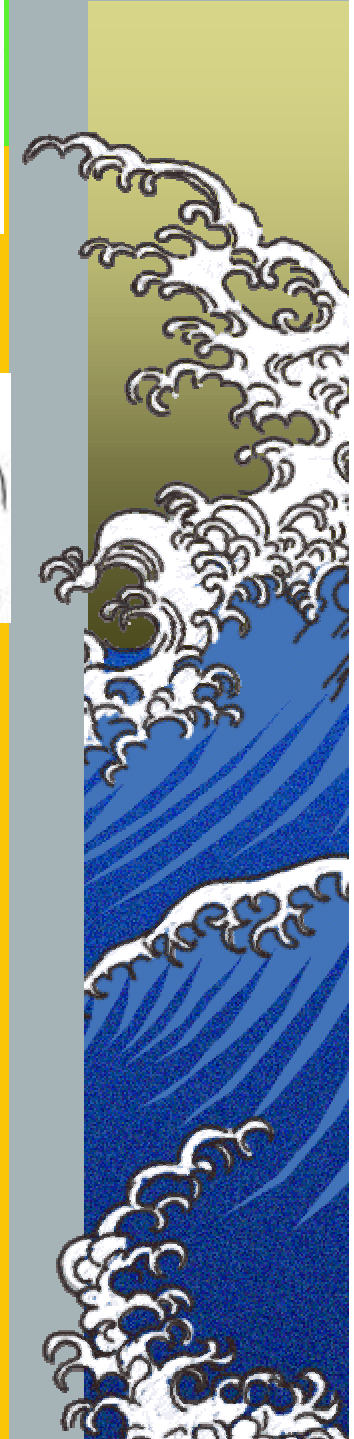


ST 36 (*ZUSANLI*)

IT INCREASES DOPAMIN

**IT ACTS ON HYPOTHALAMUS
ARCED NUCLEUS
LIMBIC SYSTEM**

**IT FAVOURS VASODILATATION OF THE
CEREBRAL HEMISPHERES**



SCIENTIFIC BASIS OF VETERINARY ACUPUNCTURE

SP 6 (*SANYINJIAO*)

IT PRODUCES T LYMPHOCYTES



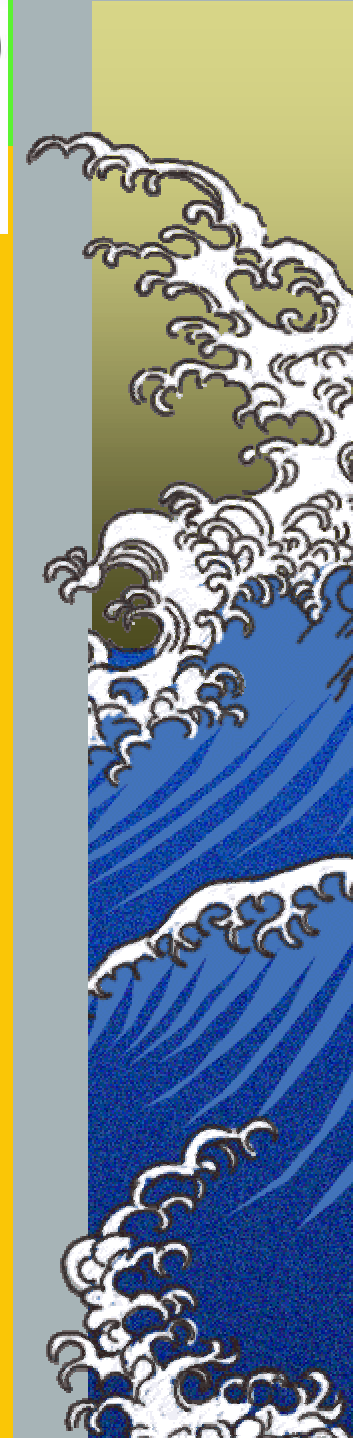
PC 6 (*NEIGUAN*)

**IT ACTS ON AMYGDALA
STAR SHAPED GANGLION
RETICULAR SUBSTANCE
HYPOTHALAMUS**



GV 20 (*BAIHUI*)

EUPHORICANT EFFECTS





SCIENTIFIC BASIS OF VETERINARY ACUPUNCTURE

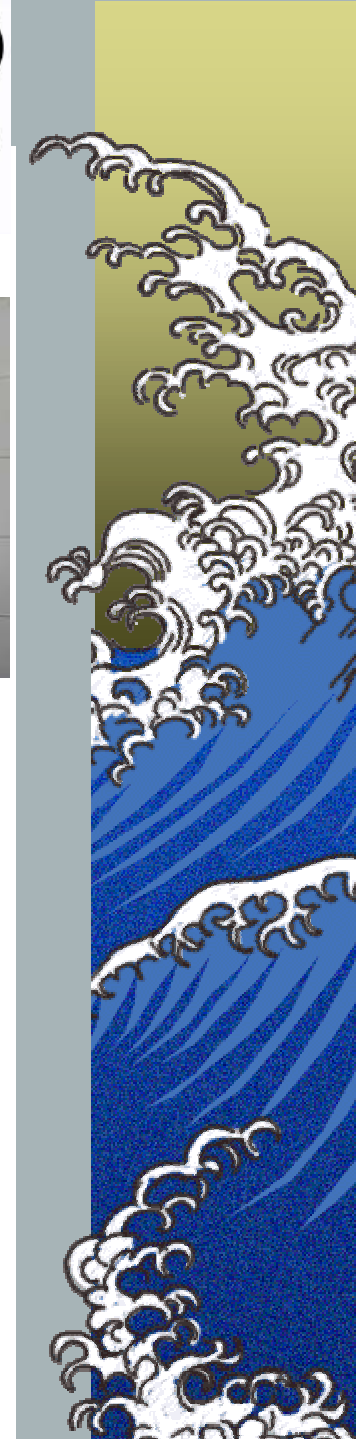
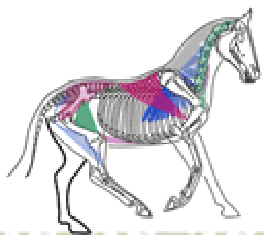
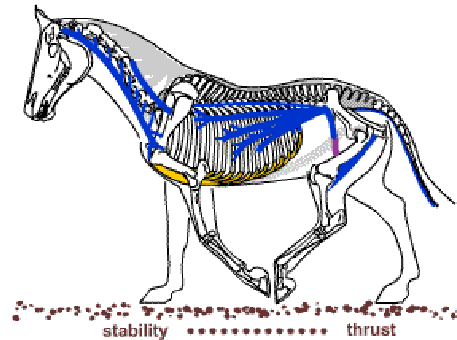


ENGRAMS RECODING



TUINA

推拿





SCIENTIFIC BASIS OF VETERINARY ACUPUNCTURE



ENGRAMS RECODING



FASCIA



MECHANICAL – NEUROLOGICAL FUNCTIONS ACUPUNCTURE TUINA

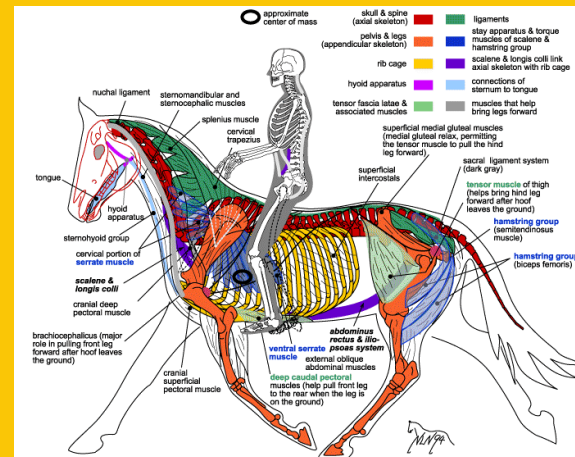
CYTOSKELETON RESHAPING (Langevin H.M. 2006)



INFORMATION FLOW BY MECHANICAL STIMULI



TENSEGRITY (INTEGRITY TENSIONAL SYSTEM)





SCIENTIFIC BASIS OF VETERINARY ACUPUNCTURE

Darras, J. C., de Vernejoul, P., Albarede, P. (1992):
Nuclear medicine and acupuncture: a study on the migration of
radioactive tracers after injection at acupoints

American Journal of Acupuncture 20(3): 245-256.

43
Tc
(98)

TECHNETIUM (SURVEING BY γ RAY)
(It derives from Molybdenum bombarded by
Deuterium 2H)



PATHWAYS OF ENERGETIC CHANNELS



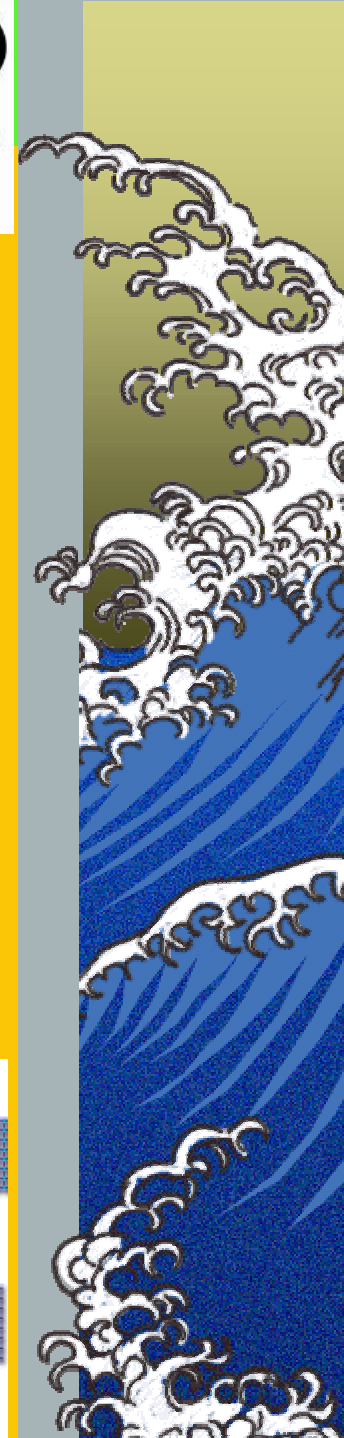


SQUID

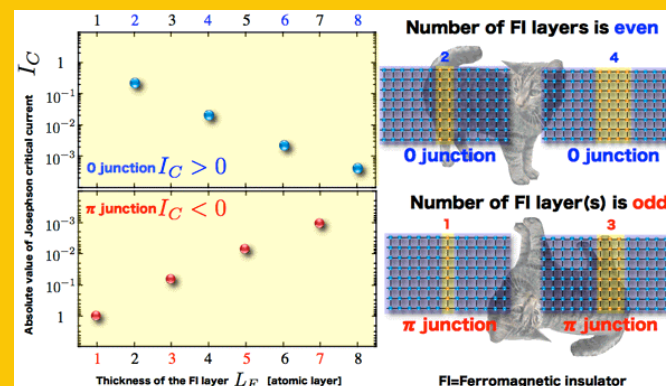
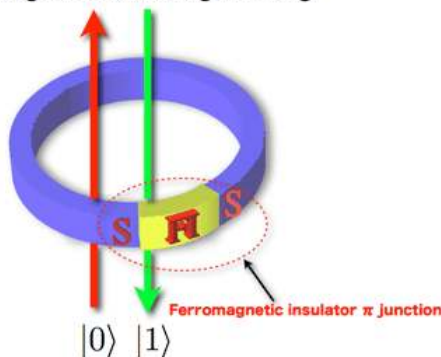
SUPERCONDUCTING QUANTUM INTERFERENCE DEVICE

is a remarkably sensitive detector of minute magnetic fields It consists of a superconducting loop with two Josephson Junctions

The extreme sensitivity of SQUIDs as magnetometers makes them ideal for studies in medicine, such as magnetoencephalography, the measurement of neural activity inside human and animal brains



Magnetic flux through the ring

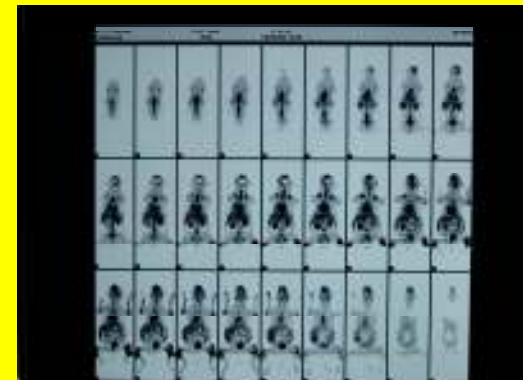
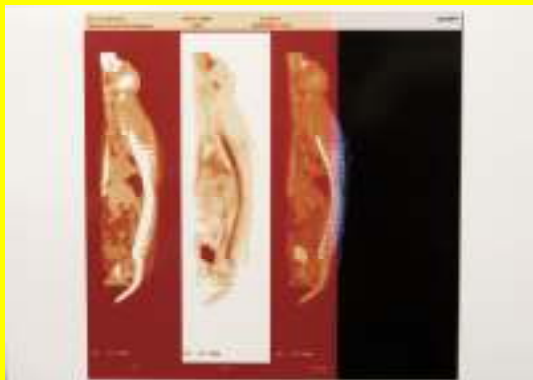
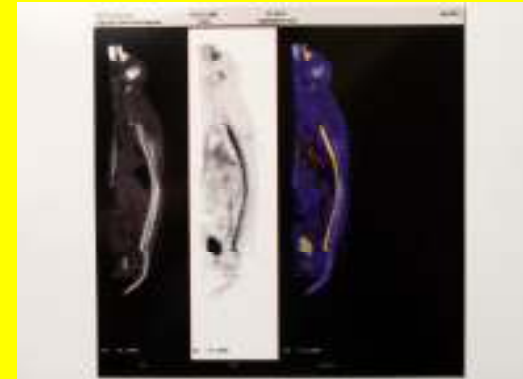
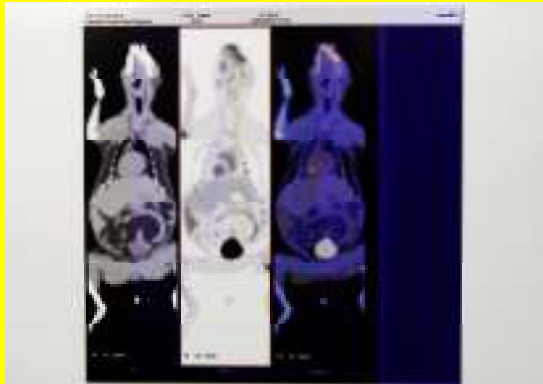




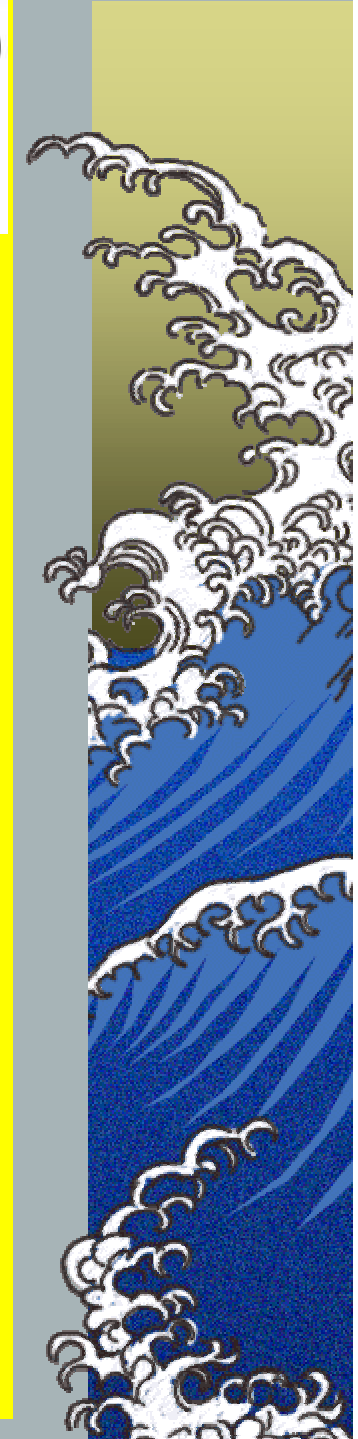
SCIENTIFIC BASIS OF VETERINARY ACUPUNCTURE



PET *Positron Emission Tomography*



Longo F. – Giovanardi C. (2009)

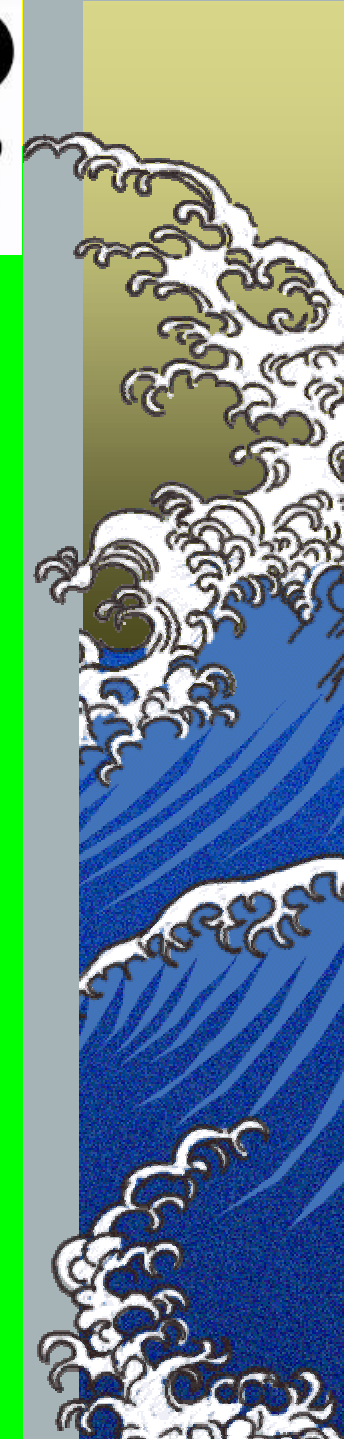




SCIENTIFIC BASIS OF VETERINARY ACUPUNCTURE



ITALIAN VETERINARY ACUPUNCTURE CLINICAL CENTER BOLOGNA - ITALY



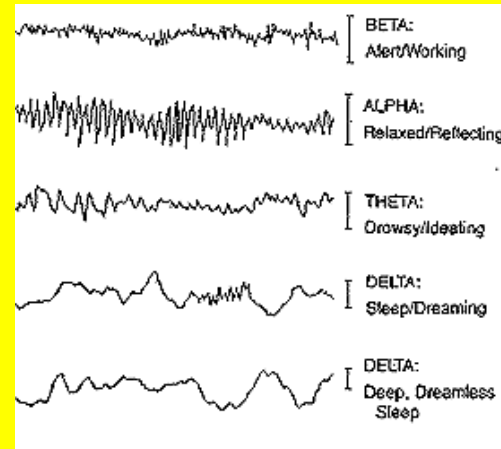


SCIENTIFIC BASIS OF VETERINARY ACUPUNCTURE

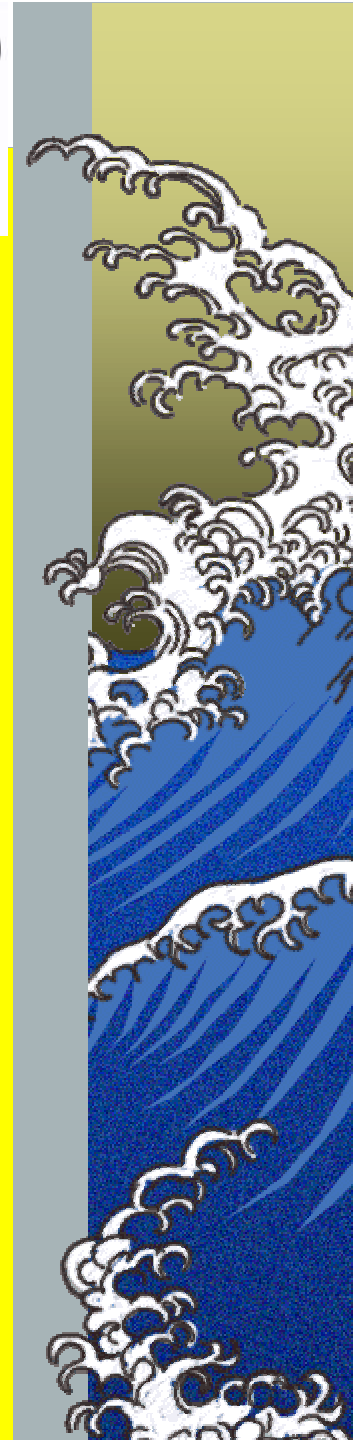
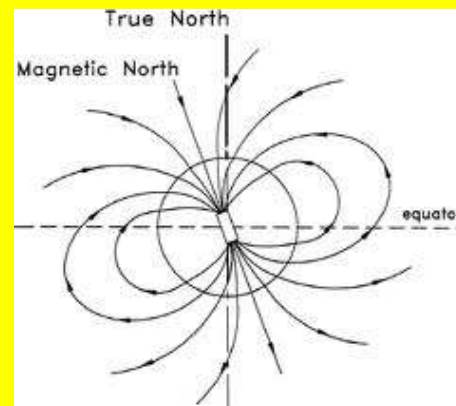


QIGONG – TAI JI QUAN - TCM:

EEG → INCREASE OF THE α WAVES (8 - 12 Hz)



**COHERENCE BETWEEN BRAIN ELECTRIC
ACTIVITY and EARTH MAGNETIC ACTIVITY**





SCIENTIFIC BASIS OF VETERINARY ACUPUNCTURE



QUANTUM INTERPRETATION



ALL OF BIOLOGICAL SYSTEMS HAVE
RELATIONSHIP WITH MIND



PHYSIOLOGICAL – BIOCHEMICAL – ENDOCRIN
PROCESSES

ARE SUBTENDED TO
SUB ATOMIC PHENOMENONS
(ENTANGLEMENT)



MEDICINE LIKE SELF CARE:

HABITAT (οἶκος - MACROCOSM) ↔ PERSON (MICROCOSM)





**5th BULGARIAN ACUPUNCTURE CONGRESS
SOFIA 26-28 OCTOBER 2012**

SCIENTIFIC BASIS OF VETERINARY ACUPUNCTURE

Francesco LONGO - Margherita GAZZOLA

МНОГО благодаря !!



**ITALIAN VETERINARY ACUPUNCTURE SOCIETY
ITALIAN VETERINARY ACUPUNCTURE CLINICAL CENTRE**

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