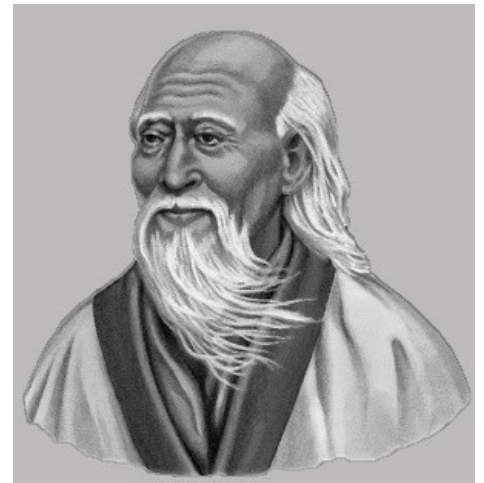


The Tao of DNA

The 64 DNA/RNA
amino acid codons
and their corresponding
I Ching hexagrams



Science Art Poetry

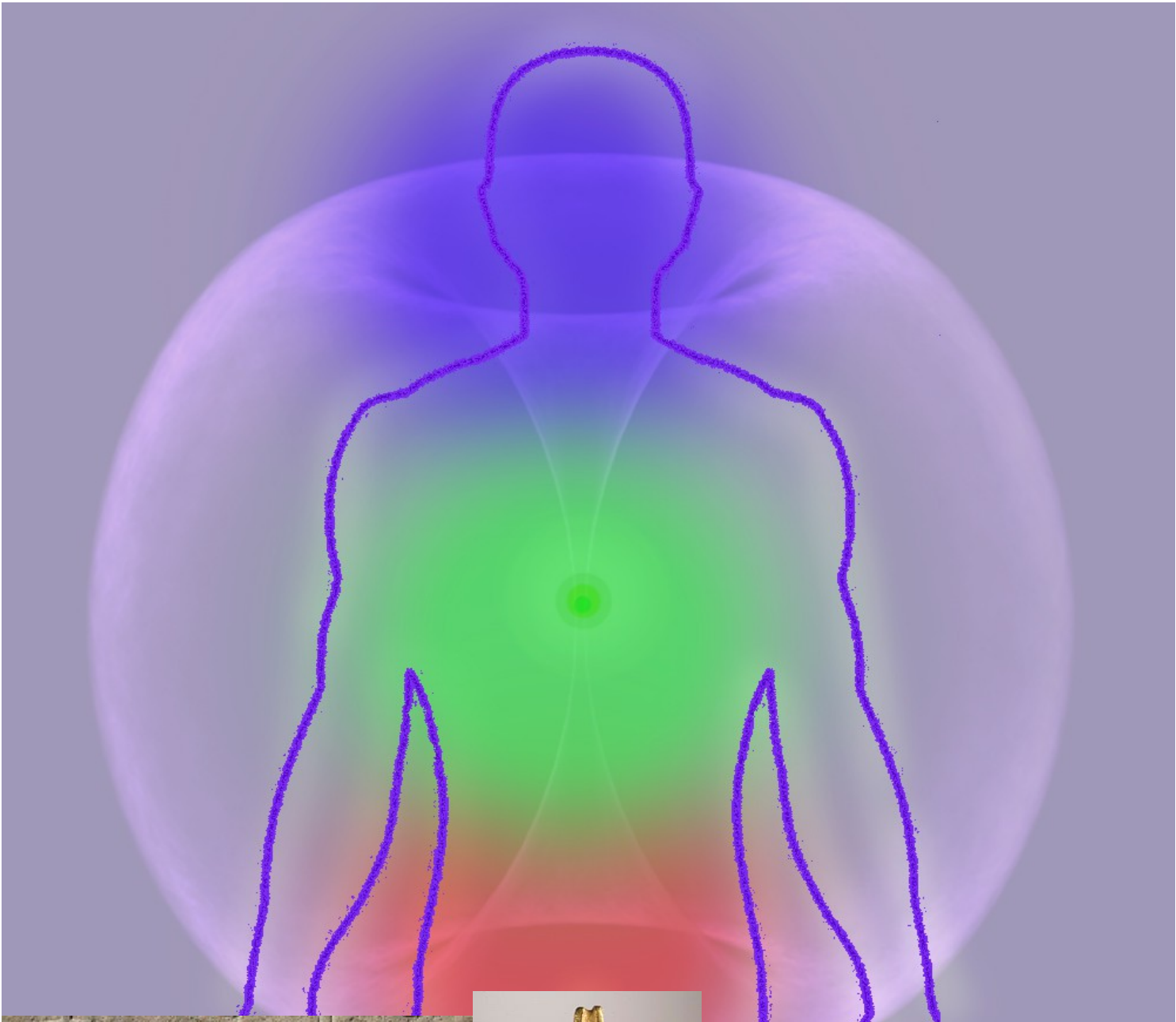
Guy Harriman

The more you know the less you understand



The elegance, concise beauty and pure simplicity of the ways and forms of Nature were known to the ancient ones who lived embedded in Nature and understood these truths by contemplating their inner stillness. It is remarkable that the same numbers (such as 9, 11, 13, 42) are found in many traditions, as well as in modern reductive analysis. Here we examine the 64 I Ching hexagrams in reference to the 64 DNA/RNA codons. The poetic wisdom of the Taoist symbolism is reflected in the 20 amino acids which make up all the proteins in our bodies.

Pulsing Magnetic Field of the Heart



Taoist Energy System



Upper Dan Tien
Shen

Middle Dan Tien
Chi

Lower Dan Tien
Jing

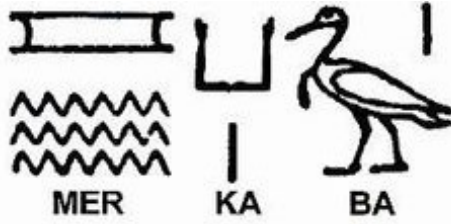
I CHING



Tai Chi
Dragon Phoenix
Yin Yang



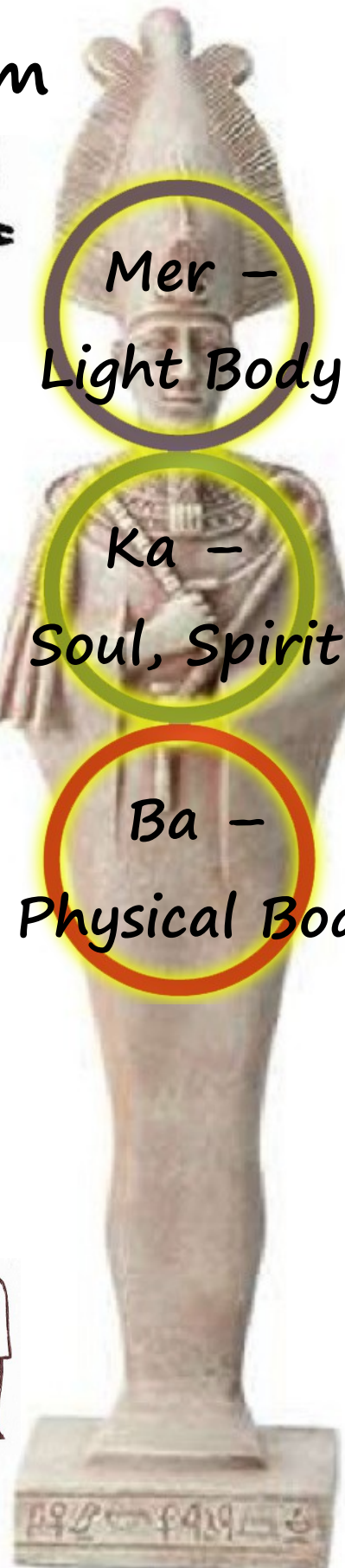
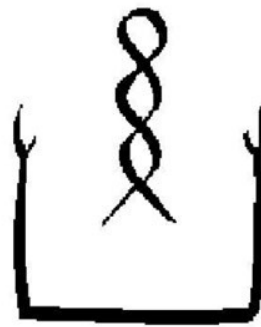
Egyptian MerKaBa System



Mer -
Light Body

Ka -
Soul, Spirit

Ba -
Physical Body



Yoga Ayurveda System



Dosha: Vata

Wind, Intellectual

Guna: Rajas

Dosha: Pitta

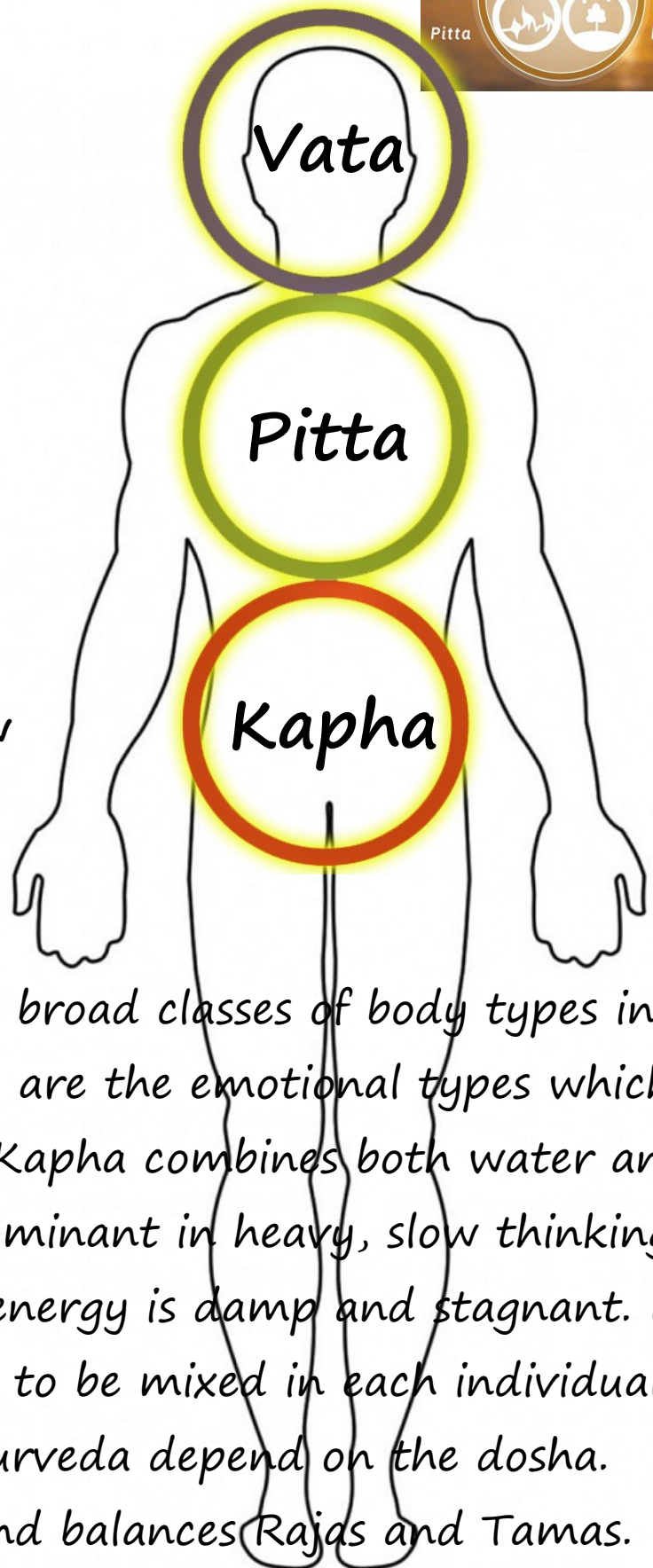
Fire, Hot, Dry, Reactive

Guna: Sattva

Dosha: Kapha

Water, Earth, Damp, Slow

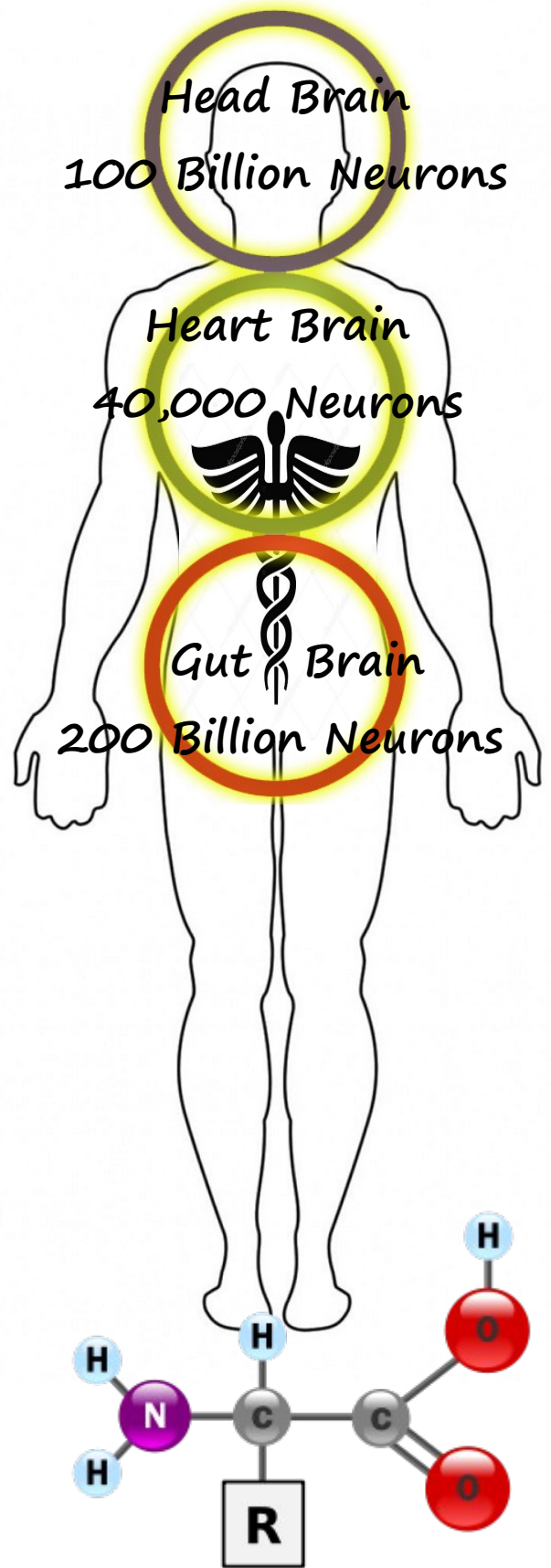
Guna: Tamas



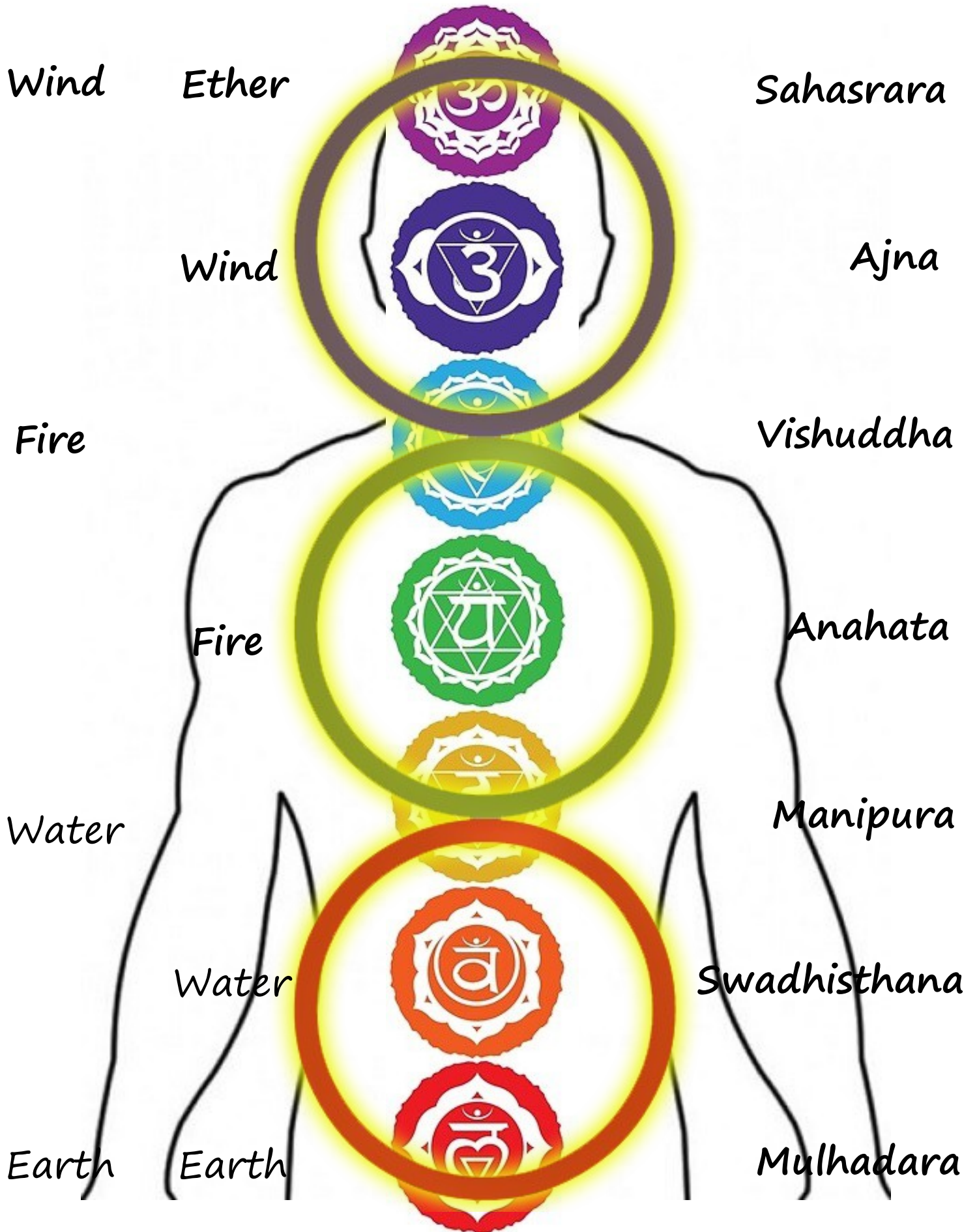
The three Doshas are the broad classes of body types in ayurveda. The three Guna are the emotional types which correspond to the doshas. Kapha combines both water and earth elements, so it is dominant in heavy, slow thinking type of people, and their energy is damp and stagnant. It is common for the doshas to be mixed in each individual.

Herbal remedies in Ayurveda depend on the dosha. Sattva guna is peaceful and balances Rajas and Tamas.

Neuro Anatomical System

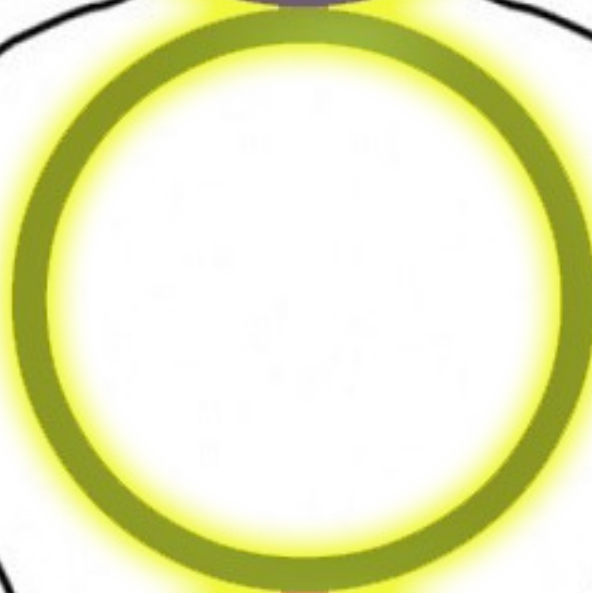
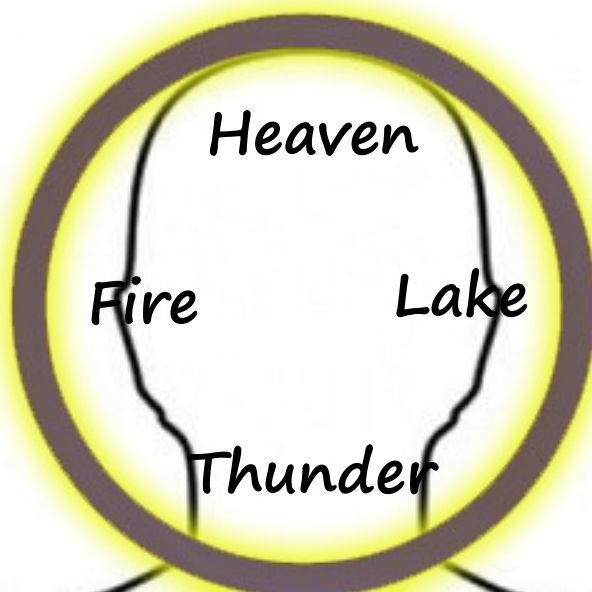


Four/Five Elements and Seven Chakras



Eight Trigrams

4 Yang
Trigrams



4 Yin
Trigrams



The Four Yang (Male) Trigrams



The sage does not hoard. The more he helps others, the more he benefits himself, The Way of Heaven does one good but never does one harm.

Tao Te Ching



Do you have the patience to wait till your mud settles and the water is clear? Can you remain unmoving till the right action arises by itself?

Tao Te Ching



If you realize that all things change, there is nothing you will try to hold on to. If you are not afraid of dying, there is nothing you cannot achieve.

Tao Te Ching



Life and death beget each other, hard makes easy, sound and silence make the music, before and after follow from each other.

Tao Te Ching

The Four Yin (Feminine) Trigrams



Express yourself completely, then keep quiet. Be like the forces of nature: when it blows, only wind; clouds pass, then the sun shines through.

Tao Te Ching



Let your way be as the way of water running deep and filled with peace. Do not struggle or compete. Go with the flow and be serene

Tao Te Ching



The Master acts without doing, teaches without saying. Things arise and disappear, she lets them go. When her work is done, it lasts forever.

Tao Te Ching



In dwelling, be close to the land. In meditation, go deep in the heart. In dealing with others, be gentle and kind

Tao Te Ching

Tao Te Ching

There was something undefined and complete, empty, full of all existence before Heaven and Earth. How still it was and formless, standing alone, and undergoing no change, reaching everywhere. It may be regarded as the singular – Mother and Father of all things.

It is the way of Heaven not to strive, and yet it skilfully overcomes. Its demonstrations are quiet, and yet its plans are skillful and effective. The meshes of the net of Heaven are large; far apart, but letting nothing escape.

All things are produced by the Tao, and nourished by its expansion. They receive their forms according to the nature of each, and are completed according to their condition. It produces them and makes no claim to the possession of them; it carries them through their processes; it brings them to maturity and exercises no control over them. This is its pure and mysterious operation. Its template and ideation is DNA.

Binary codes of I Ching and DNA

The following table summarizes the correspondence of the 64 aspects and permutations of the codes of I Ching and DNA. Each horizontal line in the I Ching has two possible values, 1 (yang) and 0 (yin). Therefore the hexagram has 6 bits, ranging from 000000 (earth) to 111111 (heaven). The possible permutations are $2^6 = 64$. The three line yang trigram has $2^3 = 8$ permutations, as has the yin trigram. So the combined yang and yin hexagram has $8 \times 8 = 64$ values. DNA uses 3 base pairs to code an amino acid. Each base pair in the amino acid codon is one of four molecules. Therefore the number of possible coding permutations is $4 \times 4 \times 4 = 64$.

The four DNA bases are adenine (A - binary 10), cytosine (C - binary 01) guanine (G - binary 11) and thymine (T - binary 00). Thymine is replaced with uracil in RNA.

Each base has a specific partner in the dual strands of DNA: guanine with cytosine, adenine with thymine (in DNA) or adenine with uracil (in RNA).

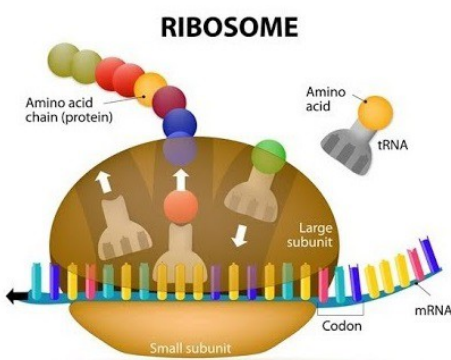
Redundancy in Amino Acid Codons

Only two amino acids are uniquely coded in DNA – Methionine (ATG) which always occurs at the start of a protein code sequence, and Tryptophan (TGG) which is an essential amino acid precursor to serotonin (feeling of joy and connection), melatonin (important antioxidant made in the gut, and sleep cycle regulator made in the pineal gland) and DMT (the neurotransmitter active during dreams and in transcendent spiritual experiences).

The body is material, known as Ba in Egyptian MerKaBa system. so is connected to yin earth. The entire set of 20 amino acids in the table are in the Yin Ba entries at the bottom 20 rows of the table. Note that all of the Yin Ba codon set end with G (00) or T (11). The physical proteins are synthesized from these 20 codons, with one of the three STOP codons ending the protein sequence. The remaining codons are redundant copies of the Yin Ba codons allowing DNA damaged to be corrected by 3 Sirtuins, NADH, and the 30+ DNA repair enzymes which are currently known about.

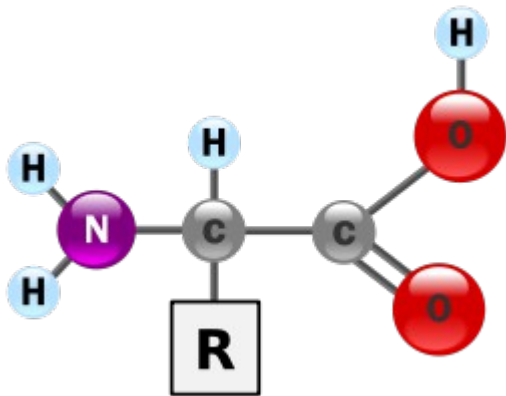
Redundant DNA Coding of Amino Acids

Amino Acid			Codons						
W	Trp	Tryptophan	TGG						
Y	Tyr	Tyrosine	TAC	TAT					
C	Cys	Cysteine	TGC	TGT					
E	Glu	Glutamic acid	GAA	GAG					
K	Lys	Lysine	AAA	AAG					
Q	Gln	Glutamine	CAA	CAG					
S	Ser	Serine	AGC	AGT	TCA	TCC	TCG	TCT	
L	Leu	Leucine	TTA	TTG	CTA	CTC	CTG	CTT	
R	Arg	Arginine	AGA	AGG	CGA	CGC	CGG	CGT	
G	Gly	Glycine	GGA	GGC	GGG	GGT			
F	Phe	Phenylalanine	TTC	TTT					
D	Asp	Aspartic acid	GAC	GAT					
H	His	Histidine	CAC	CAT					
N	Asn	Asparagine	AAC	AAT					
M	Met	Methionine	ATG						
A	Ala	Alanine	GCA	GCC	GCG	GCT			
P	Pro	Proline	CCA	CCC	CCG	CCT			
T	Thr	Threonine	ACA	ACC	ACG	ACT			
V	Val	Valine	GTA	GTC	GTG	GTT			
I	Ile	Isoleucine	ATA	ATC	ATT				
X	STP	Stop codon	TAA	TAG	TGA				

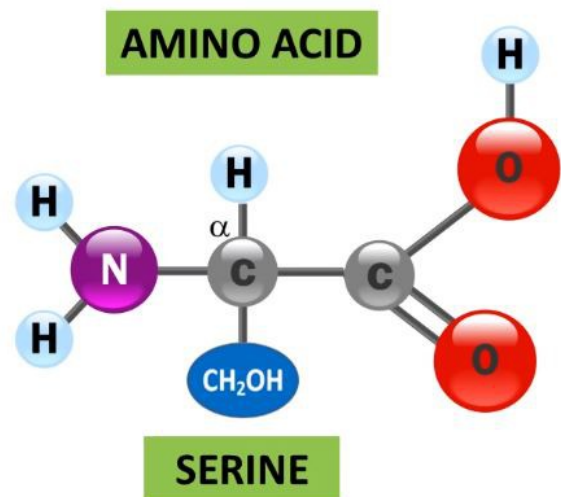


Messenger RNA is transcribed in the nucleus and sent to ribosomes in the cell cytoplasm. mRNA assembles protein chains, following the sequence of transcribed codons.

Amino Acid Template



Example Serine



Comparing DNA and RNA

- DNA
 - **Double** stranded
 - Sugar = **deoxyribose**
 - Bases: A-T, C-G
 - Found only **in nucleus**
 - Can repair itself
- RNA
 - **Single** stranded
 - Sugar = **ribose**
 - Bases: A-**U**, C-G
 - Found **in and out** of the nucleus
 - Cannot repair itself

Amino Acid	DNA codons
Isoleucine	ATT, ATC, ATA
Leucine	CTT, CTC, CTA, CTG, TTA, TTG
Valine	GTT, GTC, GTA, GTG
Phenylalanine	TTT, TTC
Methionine	ATG
Cysteine	TGT, TGC
Alanine	GCT, GCC, GCA, GCG
Glycine	GGT, GGC, GGA, GGG
Proline	CCT, CCC, CCA, CCG
Threonine	ACT, ACC, ACA, ACG
Serine	TCT, TCC, TCA, TCG, AGT, AGC
Tyrosine	TAT, TAC
Tryptophan	TGG
Glutamine	CAA, CAG
Asparagine	AAT, AAC
Histidine	CAT, CAC
Glutamic acid	GAA, GAG
Aspartic acid	GAT, GAC
Lysine	AAA, AAG
Arginine	CGT, CGC, CGA, CGG, AGA, AGG
Stop codons	TAA, TAG, TGA

The Genetic code

		Second Letter					
		U	C	A	G		
1st letter	U	UUU Phe UUC UUA Leu UUG	UCU UCC Ser UCA UCG	UAU Tyr UAC UAA Stop UAG Stop	UGU Cys UGC UGA Stop UGG Trp	3rd letter	U
	C	CUU CUC Leu CUA CUG	CCU CCC Pro CCA CCG	CAU His CAC CAA Gln CAG	CGU CGC Arg CGA CGG		U
	A	AUU AUC Ile AUA AUG Met	ACU ACC Thr ACA ACG	AAU Asn AAC AAA Lys AAG	AGU Ser AGC AGA Arg AGG		U
	G	GUU GUC Val GUA GUG	GCU GCC Ala GCA GCG	GAU Asp GAC GAA Glu GAG	GGU GGC Gly GGA GGG		U
						C	
						A	
						G	

The Four Groups of Codons

21 Yang Shen Mer + 21 Yin Jing Ba = 42
(there are 42 Gods in Egyptian Hall of Maat)

Yang Shen Mer

20 Amino Acids

+ STOP = 21

Element = Wind

Metal = Gold

Hindu God = Shiva

Hindu Caste = Brahmin

Tai Chi Yang Heart

11 Amino Acids

Element = Fire

Metal = Silver

Hindu God = Kali

Hindu Caste = Kshatriya

Tai Chi Yin Heart

11 Amino Acids

Element = Water

Metal = Copper

Hindu God = Lakshmi

Hindu Caste = Vaishya

Yin Jing Ba

20 Amino Acids

+ STOP = 21

Element = Earth

Metal = Lead

Hindu God = Vishnu

Hindu Caste = Shudra

Forty Two in Ancient Egyptian Religion

During most of Pharonic Egyptian history, the empire was divided into 42 nomes. Ancient Egyptian religion and mythological structure frequently model this terrestrial structure:

42 body parts of Osiris: In some traditions of the Osiris myth, Seth slays Osiris and distributes his 42 body parts all over Egypt.

42 books in the core library: Clement of Alexandria states that the Egyptian temple library is divided into 42 "absolutely necessary" books that formed the stock of a core library. 36 contain the entire philosophy of the Egyptians which are memorized by the priests. The remaining 6 books are learned by the Pastophoroi (image-bearers). The 42 books were not canonized like the Hebrew bible; they only supported and never replaced temple ritual. Hence, the destruction of the Egyptian temples and the cessation of the rituals ended Egyptian cultural continuity.

42 negative confessions to Maat: In Egyptian mythology, there are 42 questions asked of the Soul after death making their journey through the Western Lands to the Hall of Maat. . Maat, a female embodiment of Justice, considered to be both a maternal and a delivering force, is an Ancient Egyptian personification of physical and moral law, order, and truth. In the judgment scene described in the Egyptian and the Book of Pass (the Book of the Dead, which evolved from the Coffin Texts and the Pyramid Texts), there are 42 questions asked of the Soul in the analysis of Maat. If the departed Soul can reasonably answers the 42 questions, then it has the potential to either reincarnate, or if completely successful, reach the ultimate goal of becoming a Star, whereon, the Soul can continue to give Light, and fuel Universal growth. These 42 questions correspond to the "42 Negative Confessions" from funerary texts such as the Papyrus of Ani.

Forty Two in Judaism and Christianity

There are 42 Stations of the Exodus which are the 42 locations visited by the Israelites following their flight from Egypt, recorded in Numbers 33, with variations also recorded in the books of Exodus and Deuteronomy in the bible.

42 is the number with which God creates the Universe in Kabbalistic tradition. In Kabbalah, the most significant name is that of the En Sof ("Infinite" or "Endless"), who is above the Sefirot. The Forty-Two-Lettered Name contains four combined names which are spelled in Hebrew letters (spelled in letters = 42 letters), which is the name of Azilut ("Emanation"). There are obvious links between the Forty-Two Lettered Name of the Babylonian Talmud and the Kabbalah's Forty-Two Lettered Name.



The number 42 appears in various contexts in Christianity. There are 42 generations (names) in the Gospel of Matthew's version of the Genealogy of Jesus.

It is prophesied that for 42 months the Beast will hold dominion over the Earth (Revelation 13:5): They worshiped the dragon who had given authority to the beast, and they worshiped the beast, saying, "Who is like the beast, and who can wage war against it?" The beast was given a mouth to speak arrogant and blasphemous words, and authority to act for 42 months.

In Judaism, the number (in the Babylonian Talmud, compiled 375 AD to 499 AD) of the "Forty-Two Lettered Name" ascribed to God. Rab, a 3rd-century source in the Talmud stated "The Forty-Two Lettered Name is entrusted only to him who is pious, meek, middle-aged, free from bad temper, sober, and not insistent on his rights". Maimonides felt that the original Talmudic Forty-Two Lettered Name was perhaps composed of several combined divine names [Maimonides "Moreh"]. The apparently unpronounceable Tetragrammaton provides the backdrop from the Twelve-Lettered Name and the Forty-Two Lettered Name of the Talmud.

Also in Judaism, by some traditions the Torah scroll is written with no fewer than 42 lines per column, based on the journeys of Israel. In the present day, 42 lines is still the most common standard.

Forty Two Moral Affirmations of the Judgment of the Soul in the Hall of Maat

1. I honor virtue
2. I benefit with gratitude
3. I am peaceful
4. I respect the property of others
5. I affirm that all life is sacred
6. I give offerings that are genuine
7. I live in truth
8. I regard all altars with respect
9. I speak with sincerity
10. I consume only my fair share
11. I offer words of good intent
12. I relate in peace
13. I honor animals with reverence
14. I can be trusted
15. I care for the earth
16. I keep my own council
17. I speak positively of others
18. I remain in balance with my emotions
19. I am trustful in my relationships
20. I hold purity in high esteem
21. I spread joy
22. I do the best I can
23. I communicate with compassion
24. I listen to opposing opinions
25. I create harmony
26. I invoke laughter
27. I am open to love in various forms
28. I am forgiving
29. I am kind
30. I act respectfully
31. I am accepting
32. I follow my inner guidance
33. I converse with awareness
34. I do good
35. I give blessings
36. I keep the waters pure
37. I speak with good intent
38. I praise the Goddess and the God
39. I am humble
40. I achieve with integrity
41. I advance through my own abilities
42. I embrace the All



A Mursi man of Ethiopia wearing the feather of Maât

The Four Types of Amino Acids

- Neutral (pH = 7) and non-polar
- Neutral (pH = 7) and polar
- Acidic (pH below 7) and polar
- Alkali (pH above 7) and polar

The greater the atomic bond electronegativity difference, the more polar the bond.

Amino acid	3-letter ^[127]	1-letter ^[127]	Side chain class	Side chain polarity ^[127]	Side chain charge (pH 7.4) ^[127]
Alanine	Ala	A	aliphatic	nonpolar	neutral
Arginine	Arg	R	basic	basic polar	positive
Asparagine	Asn	N	amide	polar	neutral
Aspartic acid	Asp	D	acid	acidic polar	negative
Cysteine	Cys	C	sulfur-containing	nonpolar	neutral
Glutamine	Gln	Q	amide	polar	neutral
Glutamic acid	Glu	E	acid	acidic polar	negative
Glycine	Gly	G	aliphatic	nonpolar	neutral
Histidine	His	H	basic aromatic	basic polar	positive(10%) neutral(90%)
Isoleucine	Ile	I	aliphatic	nonpolar	neutral
Leucine	Leu	L	aliphatic	nonpolar	neutral
Lysine	Lys	K	basic	basic polar	positive
Methionine	Met	M	sulfur-containing	nonpolar	neutral
Phenylalanine	Phe	F	aromatic	nonpolar	neutral
Proline	Pro	P	cyclic	nonpolar	neutral
Serine	Ser	S	hydroxyl-containing	polar	neutral
Threonine	Thr	T	hydroxyl-containing	polar	neutral
Tryptophan	Trp	W	aromatic	nonpolar	neutral
Tyrosine	Tyr	Y	aromatic	polar	neutral
Valine	Val	V	aliphatic	nonpolar	neutral

AMINO ACID	CODON	CODON BINARY	TRIGRAM BINARY	I CHING YANG YIN TRIGRAMS	DNA CODON ORDERING
GLUTAMIC ACID	GAA	111010	111111	HEAVEN - HEAVEN	YANG (MER) SHEN G.. GROUP (11)
ASPARTIC ACID	GAC	111001	111110	HEAVEN - LAKE	YANG (MER) SHEN G.. GROUP (11)
ALANINE	GCA	110110	111101	HEAVEN - FIRE	YANG (MER) SHEN G.. GROUP (11)
ALANINE	GCC	110101	111001	HEAVEN - THUNDER	YANG (MER) SHEN G.. GROUP (11)
ALANINE	GCG	110111	111110	HEAVEN - WIND	YANG (MER) SHEN G.. GROUP (11)
GLYCINE	GGA	111110	111010	HEAVEN - WATER	YANG (MER) SHEN G.. GROUP (11)
GLYCINE	GGC	111101	111100	HEAVEN - MOUNTAIN	YANG (MER) SHEN G.. GROUP (11)
GLYCINE	GGG	111111	111000	HEAVEN - EARTH	YANG (MER) SHEN G.. GROUP (11)
VALINE	GTA	110010	011111	LAKE - HEAVEN	YANG (MER) SHEN G.. GROUP (11)
VALINE	GTC	110001	011110	LAKE - LAKE	YANG (MER) SHEN G.. GROUP (11)
VALINE	GTG	110011	011101	LAKE - FIRE	YANG (MER) SHEN G.. GROUP (11)
TYROSINE	TAC	001001	011001	LAKE - THUNDER	YANG (MER) SHEN T.. GROUP (10)
SERINE	TCA	000110	011110	LAKE - WIND	YANG (MER) SHEN T.. GROUP (10)
SERINE	TCC	000101	011010	LAKE - WATER	YANG (MER) SHEN T.. GROUP (10)
SERINE	TCG	000111	011100	LAKE - MOUNTAIN	YANG (MER) SHEN T.. GROUP (10)
CYSTEINE	TGC	001101	011000	LAKE - EARTH	YANG (MER) SHEN T.. GROUP (10)
LEUCINE	TTA	000010	101111	FIRE - HEAVEN	YANG (MER) SHEN T.. GROUP (10)
PHENYLALANINE	TTC	000001	101110	FIRE - LAKE	YANG (MER) SHEN T.. GROUP (10)
LEUCINE	TTG	000011	101101	FIRE - FIRE	YANG (MER) SHEN T.. GROUP (10)
STOP	TAA	001010	101001	FIRE - THUNDER	YANG (MER) SHEN T.. GROUP (10)
STOP	TGA	001110	101110	FIRE - WIND	YANG (MER) SHEN T.. GROUP (10)
LYSINE	AAA	101010	101010	FIRE - WATER	TAI CHI YANG (KA) HEART A.. GROUP (11)
ASPARAGINE	AAC	101001	101100	FIRE - MOUNTAIN	TAI CHI YANG (KA) HEART A.. GROUP (11)
THREONINE	ACA	100110	101000	FIRE - EARTH	TAI CHI YANG (KA) HEART A.. GROUP (11)
THREONINE	ACC	100101	001111	THUNDER - HEAVEN	TAI CHI YANG (KA) HEART A.. GROUP (11)
THREONINE	ACG	100111	001110	THUNDER - LAKE	TAI CHI YANG (KA) HEART A.. GROUP (11)
ARGININE	AGA	101110	001101	THUNDER - FIRE	TAI CHI YANG (KA) HEART A.. GROUP (11)
SERINE	AGC	101101	001001	THUNDER - THUNDER	TAI CHI YANG (KA) HEART A.. GROUP (11)
ARGININE	AGG	101111	001110	THUNDER - WIND	TAI CHI YANG (KA) HEART A.. GROUP (11)
SERINE	AGT	101100	001010	THUNDER - WATER	TAI CHI YANG (KA) HEART A.. GROUP (11)
ISOLEUCINE	ATA	100010	001100	THUNDER - MOUNTAIN	TAI CHI YANG (KA) HEART A.. GROUP (11)
ISOLEUCINE	ATC	100001	001000	THUNDER - EARTH	TAI CHI YANG (KA) HEART A.. GROUP (11)
GLUTAMINE	CAA	011010	110111	WIND - HEAVEN	TAI CHI YIN (KA) HEART C.. GROUP (11)
HISTIDINE	CAC	011001	110110	WIND - LAKE	TAI CHI YIN (KA) HEART C.. GROUP (11)
PROLINE	CCA	010110	110101	WIND - FIRE	TAI CHI YIN (KA) HEART C.. GROUP (11)
PROLINE	CCC	010101	110001	WIND - THUNDER	TAI CHI YIN (KA) HEART C.. GROUP (11)
PROLINE	CCG	010111	110110	WIND - WIND	TAI CHI YIN (KA) HEART C.. GROUP (11)
ARGININE	CGA	011110	110010	WIND - WATER	TAI CHI YIN (KA) HEART C.. GROUP (11)
ARGININE	CGC	011101	110100	WIND - MOUNTAIN	TAI CHI YIN (KA) HEART C.. GROUP (11)
ARGININE	CGG	011111	110000	WIND - EARTH	TAI CHI YIN (KA) HEART C.. GROUP (11)
LEUCINE	CTA	010010	010111	WATER - HEAVEN	TAI CHI YIN (KA) HEART C.. GROUP (11)
LEUCINE	CTC	010001	010110	WATER - LAKE	TAI CHI YIN (KA) HEART C.. GROUP (11)
LEUCINE	CTG	010011	010101	WATER - FIRE	TAI CHI YIN (KA) HEART C.. GROUP (11)
STOP	TAG	001011	010001	WATER - THUNDER	YIN (BA) PROTEIN ..G / ..T
TRYPTOPHAN	TGG	001111	010110	WATER - WIND	YIN (BA) PROTEIN ..G / ..T
TYROSINE	TAT	001000	010010	WATER - WATER	YIN (BA) PROTEIN ..G / ..T
CYSTEINE	TGT	001100	010100	WATER - MOUNTAIN	YIN (BA) PROTEIN ..G / ..T
GLUTAMIC ACID	GAG	111011	010000	WATER - EARTH	YIN (BA) PROTEIN ..G / ..T
LYSINE	AAG	101011	100111	MOUNTAIN - HEAVEN	YIN (BA) PROTEIN ..G / ..T
GLUTAMINE	CAG	011011	100110	MOUNTAIN - LAKE	YIN (BA) PROTEIN ..G / ..T
SERINE	TCT	000100	100101	MOUNTAIN - FIRE	YIN (BA) PROTEIN ..G / ..T
LEUCINE	CTT	010000	100001	MOUNTAIN - THUNDER	YIN (BA) PROTEIN ..G / ..T
ARGININE	CGT	011100	100110	MOUNTAIN - WIND	YIN (BA) PROTEIN ..G / ..T
GLYCINE	GGT	111100	100010	MOUNTAIN - WATER	YIN (BA) PROTEIN ..G / ..T
PHENYLALANINE	TTT	000000	100100	MOUNTAIN - MOUNTAIN	YIN (BA) PROTEIN ..G / ..T
ASPARTIC ACID	GAT	111000	100000	MOUNTAIN - EARTH	YIN (BA) PROTEIN ..G / ..T
HISTIDINE	CAT	011000	000111	EARTH - HEAVEN	YIN (BA) PROTEIN ..G / ..T
ASPARAGINE	AAT	101000	000110	EARTH - LAKE	YIN (BA) PROTEIN ..G / ..T
ALANINE	GCT	110100	000101	EARTH - FIRE	YIN (BA) PROTEIN ..G / ..T
PROLINE	CCT	010100	000001	EARTH - THUNDER	YIN (BA) PROTEIN ..G / ..T
THREONINE	ACT	100100	000110	EARTH - WIND	YIN (BA) PROTEIN ..G / ..T
VALINE	GTT	110000	000010	EARTH - WATER	YIN (BA) PROTEIN ..G / ..T
ISOLEUCINE	ATT	100000	000100	EARTH - MOUNTAIN	YIN (BA) PROTEIN ..G / ..T
METHIONINE - START	ATG	100011	000000	EARTH - EARTH	YIN (BA) PROTEIN ..G / ..T

METHIONINE: EARTH - EARTH



*Beneath the Earth
Vast Sulphur Fires;
While under Rock
Elemental Birth
So Quiet, Inspires*

Guy Harriman



DNA Codons: ATG

Methionine is a unique sulfur-containing amino acid that can be used to build proteins and produce many molecules in the body. These include the antioxidant glutathione and the molecule SAM, which is used to modify DNA and other molecules.

Pub Chem

ISOLEUCINE: EARTH – MOUNTAIN



*The Cave's Cold
Hides and Holds
Bats and Demons
Dark Danger Black
Be Bold
Go Back
Behold*

Guy Harriman



DNA Codons: ATG

Isoleucine is one of nine essential amino acids in humans, Isoleucine has diverse physiological functions, such as assisting wound healing, detoxification of nitrogenous wastes, stimulating immune function, and promoting secretion of several hormones. Necessary for hemoglobin formation and regulating blood sugar and energy levels. Isoleucine deficiency is marked by muscle tremors.

VALINE: EARTH - WATER



The Deep Black Sea
Perpetually Dark
See Spinning Funnel
Ancient Vortex Tunnel
Cold Water Ark

Guy Harriman



DNA Codons: GTT, GTC, GTA, GTG

Valine is a branched-chain nonpolar essential amino acid. Valine goes solely to carbohydrates, leucine solely to fats and isoleucine to both. The daily requirement of valine in humans is 16 mg/kg. Valine deficiency is marked by neurological defects in the brain.

Pub Chem

THREONINE: EARTH – WIND



Wisdom Keeper
Mind, No Form
Thyself only Know
Be Kind, yet Still, Flow
Howling Storm

Guy Harriman



DNA Codons: ACT, ACC, ACA, ACG

L-threonine has a role as a nutraceutical, and is a micronutrient metabolite. Threonine is an essential aspartate family amino acid in humans (provided by food), Threonine is an important residue of many proteins, such as tooth enamel, collagen, and elastin. Used by the nervous system, threonine also prevents fat buildup in the liver. Useful with intestinal disorders and indigestion, threonine has also been used to alleviate anxiety and mild depression.

PROLINE: EARTH – THUNDER



*These Lazy Comforts
Silently Seduce,
But Thunder's Roar
Hurls off the Noose.
Presciently Let Go
Renew and Reuse*

Guy Harriman



DNA Codons: CCT, CCC, CCA, CCG

Proline is a non-essential amino acid which is synthesized from glutamic acid. It is a component of collagen and is important for proper functioning of joints and tendons. Proline is derived from the amino acid L-glutamate (requiring NADH or NADPH). It also helps maintain and strengthen heart muscles, and has a role as a micronutrient. Studies have shown that when injected into the brain, proline non-selectively destroys pyramidal and granule cells, so excess proline can act as a neurotoxin and a metabotoxin.

ALANINE: EARTH – FIRE



*Baked Clay, Scorched
Vitreous Black,
Old Glazed Yin Pot
Empty of DNA, Tea
So Hot! Stand Back
As Man Cracks Free*

Guy Harriman



DNA Codons: GCT, GCC, GCA, GCG

Alanine is a non-essential amino acid made in the body from either the conversion of the carbohydrate pyruvate or the breakdown of DNA and the dipeptides carnosine and anserine. It is highly concentrated in muscle, functioning as a major energy source. Plasma alanine is often decreased when the BCAA (branched-chain amino acids) are deficient. Alanine is used in the metabolism of sugars and organic acids, tryptophan and vitamin pyridoxine. Alanine also strengthens the immune system.

ASPARAGINE: EARTH – LAKE



*Emotion's Lake Mirror
Reflecting Blue Sky;
Sail, Snake Nexus!
Soar, Soul's Plexus!
Still Eagle Wings Fly
Reflected Blue Sky*

Guy Harriman



DNA Codons: AAT, AAC

Asparagine is a non-essential amino acid in humans, Asparagine is a beta-amido derivative of aspartic acid and plays role in the biosynthesis of glycoproteins and other proteins. A metabolic precursor to aspartate, Asparagine is a nontoxic carrier of residual ammonia to be eliminated from the body. Asparagine acts as diuretic. It has a role as a nutraceutical, a micronutrient, and a human metabolite.

HISTIDINE: EARTH – HEAVEN



*Your Inner Child Grows
Grounded on Earth,
Glowing Angel on Birth.*



*Nutured by Nature,
In Nature She Flows
In Heaven's Light Grows*

Guy Harriman

DNA Codons: CAT, CAC

Histidine is a semi-essential amino acid needed for growth and tissue repair, Histidine is important for maintenance of myelin sheaths and is metabolized to the neurotransmitter histamine. Histamines play many roles in immunity, gastric secretion, and sexual functions. Histidine is also required for blood cell manufacture and protects tissues against damage caused by radiation and heavy metals. Low blood histamine and histidine occurs in rheumatoid arthritis and schizophrenic patients.

ASPARTIC ACID: MOUNTAIN – EARTH



*Truth's Winding Path
Worn over The Ages
By Hermits and Sages
Filled with Thorns
Rocks and Weeds,
To Cloud Covered Top
Needs No Man's Sign*

Guy Harriman



DNA Codons: GAT, GAC

Aspartic Acid is a non-essential polar alpha-amino acid. Aspartic Acid has an overall negative charge and plays an important role in the synthesis of other amino acids and in the citric acid and urea cycles. Asparagine, arginine, lysine, methionine, isoleucine, and some nucleotides are synthesized from aspartic acid. Aspartic acid also serves as a neurotransmitter, and consists of succinic acid bearing a single alpha-amino substituent. It is a C4-dicarboxylic acid and contains a carboxymethyl group.

PHENYLALANINE: MOUNTAIN – MOUNTAIN



*Deep Down the Gorge
Shadowed Cliffs Arise.*

*Yet Even Man,
Addicted and Sad,
Frustrated and Mad,
Sees Mountains so High
Shine Each Sunrise*

Guy Harriman



DNA Codons: TTT, TTC

DL-Phenylalanine is a racemic mixture of phenylalanine, an aromatic amino acid with antidepressant, analgesic and appetite suppressant properties. It is a precursor of the neurotransmitters norepinephrine and dopamine. This agent also plays a role in alleviating mood swings of premenstrual syndrome (PMS), increasing energy and mental alertness and heighten the ability to focus in individuals with attention deficit hyperactivity disorder (ADHD). Phenylalanine is used in many proteins and enzymes.

GLYCINE: MOUNTAIN – WATER



Underground Stream,
Sweet, Flowing Down,
Sky Water Structuring,
Faster, Flow Faster,
Tumbling, Stumbling,
Merging, Mud Brown,
Dull River, no Gleam

Guy Harriman



DNA Codons: GGT, GGC, GGA, GGG

Glycine is a non-essential, non-polar, non-optical, glucogenic amino acid. Glycine, an inhibitory neurotransmitter in the CNS, triggers chloride ion influx via ionotropic receptors, thereby creating an inhibitory post-synaptic potential. In contrast, this agent also acts as a co-agonist, along with glutamate, facilitating an excitatory potential at the glutaminergic N-methyl-D-aspartic acid (NMDA) receptors. Glycine catalyses the oxidative conversion of glycine into carbon dioxide, ammonia, and a folate.

ARGININE: MOUNTAIN – WIND



*Timid Skies, Cloud Still,
Await Wind's Jet Blow.
Now Fierce Cold Blasts
A Bold Stray Traveler.
In White Hell Blizzard,
Bent, He Cannot Hold,
Hands Frozen Hard*

Guy Harriman



DNA Codons: CGT, CGC, CGA, CGG; AGA, AGG

Arginine is an essential amino acid in children. Arginine is a complex amino acid, often found at active sites in proteins and enzymes due to its amine-containing side chain. Arginine may prevent or treat heart and circulatory diseases, combat fatigue, and stimulate the immune system. It also boosts production of nitric oxide, relaxing blood vessels, and treating angina and other cardiovascular problems. Arginine is also an important intermediate in the urea cycle and in detoxification of nitrogenous wastes.

LEUCINE: MOUNTAIN – THUNDER



*Thor Strikes, Hurls
His MegaVolt Bolt,
His Howled Curse!*



*Dazzling Electric Light
Caught Dazed Bright,
FB Churls Fall Prone
EMP Internet – Dead.*

Guy Harriman

DNA Codons: CTT, CTC, CTA, CTG; TTA, TTG

Leucine is one of nine essential amino acids in humans (provided by food), Leucine is important for protein synthesis and many metabolic functions. Leucine contributes to regulation of blood-sugar levels; growth and repair of muscle and bone tissue; growth hormone production; and wound healing. Leucine also prevents breakdown of muscle proteins after trauma or severe stress and may be beneficial for individuals with phenylketonuria. Leucine is available in many foods and deficiency is rare.

SERINE: MOUNTAIN – FIRE



*Seek the Hermit's Cave
High in the Mountain,
Remote from Mankind.*

*Only the Tired Brave
May Sit By his Fire.*

*His Teachings are Silent
Unfit for Monkey Mind.*

Guy Harriman



DNA Codons: GGT, GGC, GGA, GGG

Serine is a nonessential amino acid derived from glycine but can become essential under certain conditions. Low concentration of serine compared to other amino acids is found in muscle. L-Serine may be derived from diet, biosynthesis from the glycolytic intermediate 3-phosphoglycerate, from glycine, and by protein and phospholipid degradation. With an alcohol group, serine is needed for the metabolism of fats, fatty acids, and cell membranes; muscle growth; and a healthy immune system.

GLUTAMINE: MOUNTAIN – LAKE



*Swim Freezing Cold
In Wintery Ice Water.
Mountain's Snow Melt
Heart Beat's Slow Felt.*



*Behold Mermaids Sing
Seductive Siren Songs,
Summoning All Below*

Guy Harriman

DNA Codons: CAA, CAG

Glutamine is a nonessential amino acid. Glutamine can donate the ammonia on its side chain to the formation of urea (for eventual excretion by the kidneys) and to purines (necessary for the synthesis of nucleic acids). Glutamic acid-to-glutamine conversion (catalyzed by glutamine synthase), helps regulation of toxic levels of ammonia. Glutamine aids production of both excitatory and inhibitory neurotransmitters (glutamate and GABA) and is also an important source of energy for the nervous system.

LYSINE: MOUNTAIN – HEAVEN



*Condor Glides Higher
Over Andes Vast Peaks.
Rich Essence of Maya,
A Toltec Priest Hides.*



*To all People He Speaks
Reminds Us of Light
Above all Man's Blight*

Guy Harriman

DNA Codons: AAA, AAG

L-Lysine is a nutritional supplement containing the biologically active L-isomer of the essential amino acid lysine, with potential anti-mucositis activity. Upon oral intake, L-lysine promotes healthy tissue function, growth and healing and improves the immune system. L-Lysine promotes calcium uptake, is essential for carnitine production and collagen formation necessary for connective tissue maintenance. Normal lysine metabolism is dependent on niacin, vitamin B6, riboflavin, vitamin C, glutamic acid and iron.

GLUTAMIC ACID: WATER – EARTH



*Parched Earth So Hard,
Years Without Rain.
Proud Eyes See Clouds.
False Prophets of Hope,
Just Smoke, Dry Pain.
Lion, Merkat, Antelope
Hold Water Hole Truce*

Guy Harriman



DNA Codons: GAA, GAG

L-glutamic acid is an optically active form of glutamic acid having L-configuration. It has a role as a nutraceutical, a micronutrient, and a neurotransmitter. It is a glutamine family amino acid, a proteinogenic amino acid, a glutamic acid and a L-alpha-amino acid. It is a conjugate acid of a L-glutamate. It is non-essential in humans. It is also an excitatory neurotransmitter, It serves as the precursor for the synthesis of the inhibitory gamma-aminobutyric acid (GABA) in GABA-ergic neurons.

CYSTEINE: WATER – MOUNTAIN



*All Dull Day Long
Drops of Rain Clatter.
Remember My Song,
In Baking Sun Fired?*



*Now Long Gone.
Stuck in High Shelter
Cold, Wet, Uninspired,
Now Just Idle Chatter*

Guy Harriman

DNA Codons: TGT, TGC

Cysteine is a non-essential sulfur-containing amino acid in humans, related to cystine, Cysteine is important for protein synthesis, detoxification, and diverse metabolic functions. Found in beta-keratin, the main protein in nails, skin, and hair, Cysteine is important in collagen production, as well as skin elasticity and texture. Also required in the manufacture of amino acid taurine, Cysteine is a component of the antioxidant glutathione, and helps metabolize coenzyme A, heparin, and biotin.

TYROSINE: WATER – WATER



*Proteins Fold, Unfold.
Water Molecules, Gold
Dipole Moments, Glow
In ATP, Mitochondria*



*Pump Out Hydrogen
Blessing Oxygen.
Structured Perfect,
Cell-Gel Life Connect.*

Guy Harriman

DNA Codons: TAT, TAC

Tyrosine is an essential amino acid that readily passes the blood-brain barrier. It is a precursor for the neurotransmitters dopamine, norepinephrine and adrenalin. These neurotransmitters are directly dependent upon dietary tyrosine. Tyrosine is rapidly metabolized, folic acid, copper and vitamin C are cofactors of these reactions. Tyrosine is also the precursor for hormones, thyroid, catecholestrogens and melanin. Tyrosine is in many proteins, peptides and even enkephalins, the body's natural pain reliever.

STOP: WATER – THUNDER



Most Potent Storm –
Rain Window Lashing,
Plasma Arc Flashing
In Heaven's Earthing,
Nature's Fierce Form.
Reacting Mind STOP
Judging Heart STOP
Humble Silence Reborn

Guy Harriman



DNA Codons: TAA, TGA, TAG

One of the STOP codons are placed at the end of each DNA protein code sequence in the DNA. These codons terminate the protein stringing function in the ribosome, when read in messenger RNA. STOP codons signal the termination of the polypeptide chaining process by binding release factors, causing the ribosomal subunits to disassociate, and releasing the amino acid chain. There are no other factors required except one of the three STOP codons to initiate termination.