

My Tattoo Explanation: Right Arm and Hand - Milestones in the Evolution of our Universe

General explanation

Step 6: aminoacid code for 'SCIENCE' – as the most advanced step enabling us to explore, travel and alter our Universe

Step 5: aminoacid code for the word 'MIND' – representing self-awareness as an important step in the evolution of matter and Universe

Step 4: DNA – containing the code of life, consisting of the elements generated by the processes from step 3.

Background abstract/geometric graphics: curved lines/areas resembling river beds or **water flows**, water being the predisposition and solvent for the carbon life. Hexagonal areas represents basic **carbon structure**, including the hexagonal 'tunnel' placed on hand representing Big Bang as the point of origin of our Universe. Two circles represents **two oxygen atoms** in a water molecule, as well as zen circles, together with red brush-like strokes referencing to the country of my two years postdoctoral stay at the **Japan Atomic Energy Agency**.

Step 3: selected statistically most prominent nuclear fusion processes generating the most important nuclei necessary for creation of life

Step 2: fundamental particles described by advanced quantum field and gravity theories

Step 1: fundamental relativistic quantum laws defining behaviour of the matter/energy

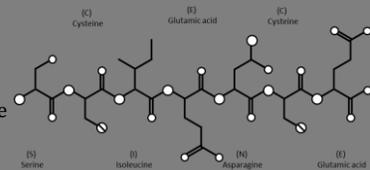
Technical footnote: the full sleeve was tattooed two years prior to taking the photo, except the hand and finger tattoo which is half a year old.

The tattoo represents chronologically ordered crucial milestones in the evolution of our Universe, from spacetime properties, through synthesis of the fundamental particles and atoms, to the onset of intelligent life and science.

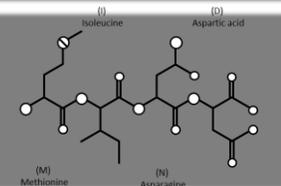


Detailed explanation

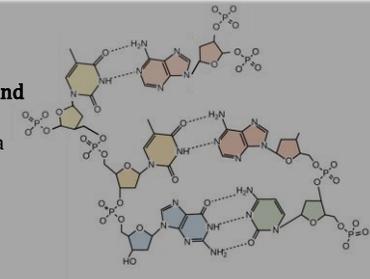
Step 6: Chemical abbreviations for Serine (S), Cysteine (C), Isoleucine (I), Glutamic Acid (E), Asparagine (N), Cysteine (C), Glutamic Acid (E)



Step 5: Chemical abbreviations for Methionine (M), Isoleucine (I), Asparagine (N), Aspartic acid (D)



Step 4: DNA consisting of carbon, hydrogen, nitrogen, oxygen and phosphorus, including a strand-break as a start of the remarkable DNA repairing mechanism



Step 3: creation of helium from protons: $p(p; e^+, \nu_e) \ ^2H(p, \gamma) \ ^3He(\ ^3He, 2p) \alpha$ generating **carbon, oxygen and phosphorus** from helium: $\alpha(\alpha, \gamma) \ ^8Be(\alpha, \gamma) \ ^{12}C(\alpha, \gamma) \ ^{16}O(\ ^{16}O, p) \ ^{31}P$ generating **nitrogen** (CNO cyclus, cycling indefinitely around hand): $^{12}C(p, \gamma) \ ^{13}N(; e^+, \nu_e) \ ^{13}C(p, \gamma) \ ^{14}N(p, \gamma) \ ^{15}O(; e^+, \nu_e) \ ^{15}N(p, \alpha) \ ^{12}C$

Step 2:
Spin 0 (e.g. **Higgs boson**): Klein-Gordon equation: $(\partial_\mu \partial^\mu + m) \psi = 0$
Spin 1/2 (e.g. **proton, neutron, electron**): Dirac equation: $(i \gamma^\mu \partial_\mu - m) \psi = 0$
Spin 1 (massive, e.g. **gluon**): Proca equation: $(\partial_\mu \partial^\mu + m^2) B^\nu = 0$
Spin 1 (massless, e.g. **photon**): Maxwell equations: $\partial_\mu \partial^\mu A^\nu = e \psi \gamma^\nu \psi$
Spin 2: Einstein equation (**graviton/spacetime**): $G_{\mu\nu} + \Lambda g_{\mu\nu} = 8\pi T_{\mu\nu}$

Step 1:
Pauli **uncertainty principle**: $\psi = \psi_1(a)\psi_2(b) \pm \psi_1(b)\psi_2(a)$
Heisenberg **exclusion principle**: $\Delta E \Delta t \geq \frac{\hbar}{2}$ and $\Delta x \Delta p \geq \frac{\hbar}{2}$
Einstein full **energy/momentum equation**: $E = \sqrt{m^2 c^4 + p^2 c^2}$

Age of the Universe