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Preventing Alzheimer's Disease

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Abstract

'Transport DNAs', tDNAs deploy silicon hexafluoride as carrier for apatite, calcium phosphate for bone and tooth maintenance. SO_x/NO_x acid air pollution can cause its inappropriate synthesis in the nasal fossa and transfer via olfactory nerves to the brain, causing Alzheimer's Disease. Fluorinated anaesthetics relieve symptoms, so it could easily be prevented.

Keywords: Alumino-Silicate Plaques; Transport DNA; tDNA; Vitamin D_3; β-amyloid; τ-Protein

Introduction

As a Cambridge undergraduate in 1967, I chanced to discover the recently corroborated ferroelectric phase transition in ice crystallised in liquid nitrogen. Graduating in Natural Sciences, I read an MSc in Biochemistry at UCL, trained as a Clinical Biochemist at the University of Surrey, programmed computers for 10 years and compiled a thesis 'Some consequences of a consistent framework for the origin of life' at King's College Medical School. Since examiners Bob Williams and Jack Lucy refused it publication in 1988, I've conducted literature searches. In 2016, Melrose Press published SCIENCE UNCOILED, see www.scienceuncoiled.co.uk.

My trace element studies [1] account for most Western morbidity. Silicon hexafluoride carries calcium phosphate for bone and tooth maintenance. Acid air pollution [2] disrupts its synthesis, explaining Alzheimer's Disease [3]. The stability of fluorspar, CaF_2 aka 'Blue John' illustrates calcium's affinity for fluorine. 1,25-diOH-cholecalciferol, vitamin D_3, stores ~265 nm UV light matching Si ~ F bond energy [4].

The conjugated ─/= bonds of retinal transfer energy through the cell membrane as solitons [5] for $SiF6^{=}$ assembly. PTH [6] distributes fluoride, F^- continuously from the parathyroid glands, ensuring high concentrations don't endanger them. tRNA analogues 'transport DNAs' actively transport $SiF_6^{=}$.apatite [7] complexes. (Either apatite, $Ca_{10}(PO_4)_6(OH)_2$ or fluorapatite, $Ca_{10}(PO_4)_6F_2$ may be involved.)

tDNAs [1], descendants of the first bioactive molecules, share tRNAs' H-bond-lined 'hole' [8]. They embed in cell membranes and membrane potential [9] aligns their H-bonds. Absorbing Pi ~ Pi bond energy adenyl cyclase releases from ATP as ~4μ laser light de-polarises them. The residual electric field propels charged complexes through, (Figure 1).

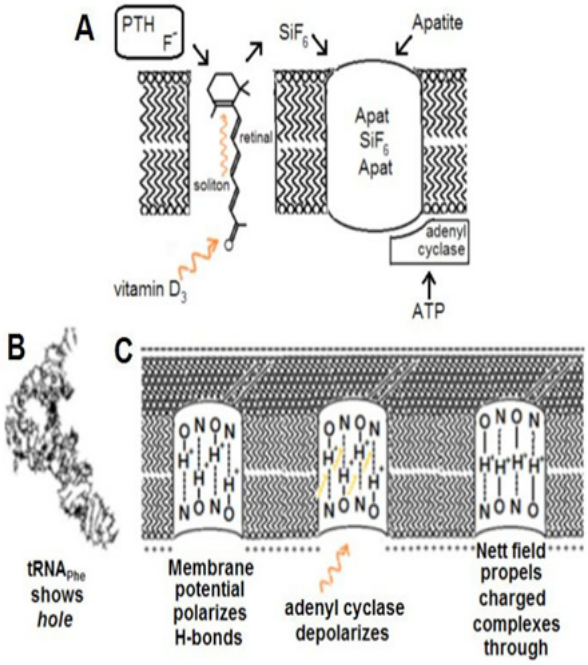

Figure 1: Bone & tooth maintenance, B X-ray diffraction image of tRNA, C ratchet transport mechanism.

Should the pH sensitive reaction:

$SiO_2 + 6F^- + 4H^+ + UV\ light \rightarrow SiF_6^{=} + 2H_2O$

fail due to acidity arising at menopause or in kidney failure, osteoporosis [10] results.

Associated pathologies include: vitamin D deficiency causing rickets [11], F^- deficiency explaining childhood tooth decay [12] and tooth mottling. SO_x/NO_x acid air pollution entering the leaves of plants inhibits a parallel reaction forming their silica hard parts [13] causing leaf-fall [14]. Liming soils proved ineffective [15], reducing interest in pollution control.

SO_x/NO_x air pollution can enable inappropriate $SiF_6^{=}$ synthesis in the nasal fossa. Olfactory nerves transfer it to the brain where its breakdown yields alumino-silicate plaques and fluoride. F^- is retained by the blood-brain barrier, it interferes with Krebs cycle [16] killing cells and disrupting protein folding. The β-amyloid and τ-protein tangles [17,18] created cause memory loss, all Alzheimer's Disease symptoms are explained. Mutant tRNAs substitute amino acids, creating similar tangles in Prion diseases [19] (embedded tRNAs render them infectious).

A lady reported her husband's temporary symptomatic relief four days after anaesthetic administration. On visiting my demented father after a hip transplant, he recognized my cousin and spoke rationally for half an hour, dying of pneumonia soon afterwards. Fluorinated anaesthetics promote renal $AlF_6^{\equiv}$ excretion [20] and simultaneously clear the brain of F^-. The 'minions' I study [1] afford a better account than neural networks [21].

The age and distress of patients and their relatives makes investigation difficult, anaesthetists liaising with psychiatrists might test this proposal. Controlling diesel exhaust [22] or a fluorinated pharmaceutical introducing F^- to the brain might prevent Alzheimer's. Having had a letter 'Lead in lettuces' published in 'The Times' [23], my father would have been pleased to know it didn't fall on deaf ears.

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