Entanglement from Quantum Mechanics Is Applicable to Cellular Physiology

The findings of the physicists outlined in the following article have not fully applied quantum mechanics to DNA.

Note: The following factor must be considered prior to the review of this document.

http://www.mcfip.net/upload/Jargon%20Problem%20in%20Health%20and%20Science.pdf

We assert that DNA repair, as outlined in the following link, provides an overview of entanglement whereby acetylation is regulated by anabolic epigenetic signaling, methylation by catabolic signaling and phosphorylation by a third set of activities that "modulate" the process.

http://www.mcfip.net/upload/Epigenetics%20-%20DNA%20Repair%20-%20Copy%20Errors.pdf

Phosphorylation activities are available for discussion with interested parties provided a CDA is in place.

In terms of entanglement, anabolic activity can be pursued through an understanding of NUP98 or an alternative designation of FOXA9. These epigenetic activities represent the aggregation of epigenetic activities for the nine DNA binding activities outlined in the link provided above.

If catabolic activity is disrupted, aggregation of the constituents of NUP98 can create a kinase for with cancers and other chronic diseases being outcomes.

With near certainty, NUP98 is the epigenetic factor that forms “genes” that encompasses glands/organs that exist with the need for entanglement to interact; e.g. testis, adrenal glands, thyroid/parathyroid and kidneys as well as to function independently - the heart, GI tract, bladder, etc. In place of NUP98, FOXA9 can also be used.

Disruption of the anabolic activity as part of entanglement can create cellular dysfunction. We assert that such a process is responsible for the 65% of all chronic diseases claimed to be caused by copy error.

All assertions relative to the roles and outcomes associated with NUP98 or FOXA9 can be verified using bioinformatic search.

Summary

The body’s glands and organs rely upon binding of DNA as part of entanglement that also encompasses catabolic activity. In terms of cell replication (division), the principles of catabolic (disassembly) and anabolic (reassembly and binding) activities, self-assembly must be efficient or a “copy error” will occur.

To avoid unnecessary complexity and confusion in this document, we have opted to set aside other activities of quantum mechanics that have not been adequately applied to cellular physiology. However, the following is provided for discussion purposes to address the interactions of the five colors in quantum chromodynamics as they can apply to activation of the aromatic amino acids and the ability to activate anabolic and catabolic mechanisms for entanglement.
http://www.mcfip.net/upload/Optomechanics%20(Explanation)%20x.pdf

Our modeling of quantum chromodynamics uses two paths; LED-driven optogenetics and natural cellular mechanisms that rely on opsins from bacteria. We refer to that model as photopharmacology.

https://www.technologyreview.com/s/419590/quantum-entanglement-holds-dna-together-say-physicists/

Quantum Entanglement Holds DNA Together, Say Physicists

A new theoretical model suggests that quantum entanglement helps prevent the molecules of life from breaking apart.

June 28, 2010

There was a time, not so long ago, when biologists swore black and blue that quantum mechanics could play no role in the hot, wet systems of life.

Since then, the discipline of quantum biology has emerged as one of the most exciting new fields in science. It's beginning to look as if quantum effects are crucial in a number of biological processes, such as photosynthesis and avian navigation which we've looked at here and here.

Now a group of physicists say that the weird laws of quantum mechanics may be more important for life than biologists could ever have imagined. Their new idea is that DNA is held together by quantum entanglement.

That's worth picking apart in more detail. Entanglement is the weird quantum process in which a single wavefunction describes two separate objects. When this happens, these objects effectively share the same existence, no matter how far apart they might be.

The question that Elisabeth Rieper at the National University of Singapore and a couple of buddies have asked is what role might entanglement play in DNA. To

find out, they've constructed a simplified theoretical model of DNA in which each nucleotide consists of a cloud of electrons around a central positive nucleus. This negative cloud can move relative to the nucleus, creating a dipole. And the movement of the cloud back and forth is a harmonic oscillator.

When the nucleotides bond to form a base, these clouds must oscillate in opposite directions to ensure the stability of the structure.

Rieper and co ask what happens to these oscillations, or phonons as physicists call them, when the base pairs are stacked in a double helix. MCFIP - In 2012 work at Weill Cornell established the fact the double helix theory was flawed when a 5th nucleobase was identified that will require the DNA alphabet of A- C - T and G to be revisited.

Phonons are quantum objects, meaning they can exist in a superposition of states and become entangled, just like other quantum objects.

To start with, Rieper and co imagine the helix without any effect from outside heat. "Clearly the chain of coupled harmonic oscillators is entangled at zero temperature," they say. They then go on to show that the entanglement can also exist at room temperature.

That's possible because phonons have a wavelength which is similar in size to a DNA helix and this allows standing waves to form, a phenomenon known as phonon trapping. When this happens, the phonons cannot easily escape. A similar kind of phonon trapping is known to cause problems in silicon structures of the same size.

That would be of little significance if it had no overall effect on the helix. But the model developed by Rieper and co suggests that the effect is profound.

Although each nucleotide in a base pair is oscillating in opposite directions, this occurs as a superposition of states, so that the overall movement of the helix is zero. In a purely classical model, however, this cannot happen, in which case the helix would vibrate and shake itself apart.

So in this sense, these quantum effects are responsible for holding DNA together.

The question of course is how to prove this. They say that one line of evidence is that a purely classical analysis of the energy required to hold DNA together does not add up. However, their quantum model plugs the gap. That's interesting but they'll need to come up with something experimentally convincing to persuade biologists of these ideas.

One tantalising suggestion at the end of their paper is that the entanglement may have an influence on the way that information is read off a strand of DNA and that it may be possible to exploit this experimentally. Just how, they don't say.

Speculative but potentially explosive work.