ELECTROLYSIS

Production of electrolytically reduced hydrogen-rich deuterium depeleted water

Facilitated by Water Ionisers

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The Brand of water "Kangen Water™" coined by the private company Enagic® is not commonly recognised for having the property of deuterium being partially depleted.

In Chemistry, electrolysis is quite literally used to both separate isolate and also concentrate deuterium.

Alkaline Water Electrolysis is the form of water electrolysis that is occurring within a water ioniser.

The Particular Water Ioniser range of concern that is discussed and recommended is that provided by Enagic®, namely the "LeveL UK" Range.

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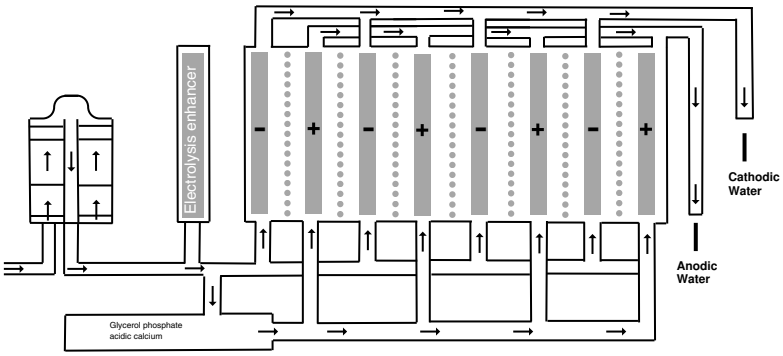

Schematic E.g of Water ioniser with 8 electrodes
4 Cathodes & 4 Anodes
Medical Device: LeveL UK Kangen 8

There are two streams in which the post electrolytic waters are separately flowed into.

The products of which can be referred to as "Cathodic Water"i.e Catholyte and "Anodic Water" i.e Anolyte.

(Prof. Ignat Ivanov Ignatov et. al)

Cathodic Water in a water ioniser can indeed be partially depleted of deuterium as a byproduct of electrolysis, where protium is preferentially reduced and released as hydrogen gas.

However, the level of deuterium depletion in this process is relatively modest compared to industrial methods designed specifically for this purpose.

On the following page we will cite some evidence as to different texts and professionals giving credence to the fact that electrolysis partially depletes deuterium.

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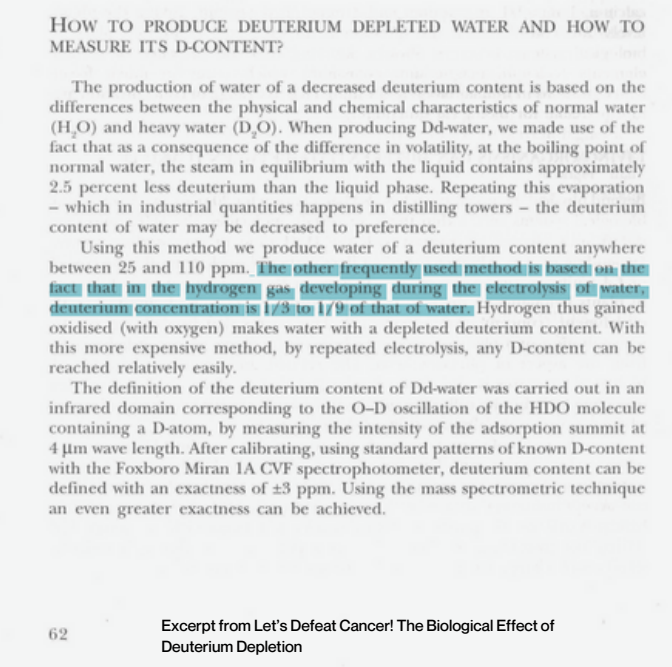
Deuterium Depletion
Via Water Electrolysis

Water Electrolysis for Deuterium Depletion

Creating Electrolytically Induced Hydogen-Rich Deuterium Depleted Water

As highlighted below from the book “Let’s Defeat Cancer! The Biological Effect of Deuterium Depletion” by Gabor Somlyai



HOW TO PRODUCE DEUTERIUM DEPLETED WATER AND HOW TO MEASURE ITS D-CONTENT?

The production of water of a decreased deuterium content is based on the differences between the physical and chemical characteristics of normal water (H_2O) and heavy water (D_2O). When producing Dd-water, we made use of the fact that as a consequence of the difference in volatility, at the boiling point of normal water, the steam in equilibrium with the liquid contains approximately 2.5 percent less deuterium than the liquid phase. Repeating this evaporation – which in industrial quantities happens in distilling towers – the deuterium content of water may be decreased to preference.

Using this method we produce water of a deuterium content anywhere between 25 and 110 ppm. The other frequently used method is based on the fact that in the hydrogen gas developing during the electrolysis of water, deuterium concentration is 1/3 to 1/9 of that of water. Hydrogen thus gained oxidised (with oxygen) makes water with a depleted deuterium content. With this more expensive method, by repeated electrolysis, any D-content can be reached relatively easily.

The definition of the deuterium content of Dd-water was carried out in an infrared domain corresponding to the O–D oscillation of the HDO molecule containing a D-atom, by measuring the intensity of the adsorption summit at 4 μm wave length. After calibrating, using standard patterns of known D-content with the Foxboro Miran 1A CVF spectrophotometer, deuterium content can be defined with an exactness of ±3 ppm. Using the mass spectrometric technique an even greater exactness can be achieved.

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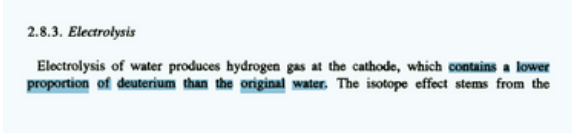
Excerpt from Let’s Defeat Cancer! The Biological Effect of Deuterium Depletion

In the Book Mr. Somlyai expands on how to deplete deuterium citing electrolysis as a method of depletion

“The other frequently used method is based on the fact that hydrogen gas developing during the electrolysis of water deuterium concentrationsl/3 to 1/9 of that of water..”

The significant part mentioned here is that the hydrogen gas that forms contains much less deuterium compared to form water it was electrolysed from.

This difference in concentration is useful for separating deuterium from normal hydrogen.



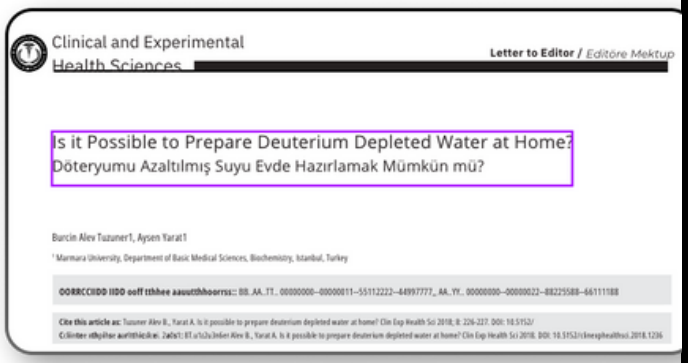
2.8.3. *Electrolysis*

Electrolysis of water produces hydrogen gas at the cathode, which contains a lower proportion of deuterium than the original water. The isotope effect stems from the

Excerpt from Radiochemistry and Nuclear Chemistry

When water undergoes electrolysis, hydrogen gas forms at the cathode (the negatively charged side). This hydrogen gas has less deuterium (a heavier form of hydrogen) compared to the original water. The reason for this is called the “isotope effect.” It happens because normal hydrogen (H+) and deuterium (D+) separate from water at different speeds. They also react at different speeds. They also react at different rates when they turn back into neutral hydrogen atoms. So, this process is based on how quickly these two types of hydrogen behave during electrolysis.

Below is a paper that was written specifically on the use of electrolysis for the intents and purposes of depleting deuterium



Clinical and Experimental Health Sciences

Letter to Editor / Editöre Mektup

Is it Possible to Prepare Deuterium Depleted Water at Home?
Döteryumu Azaltılmış Suyu Evde Hazırlamak Mümkün mü?

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Excerpt from article written by Burcin Alev Tuzuner & Aysen Yarat membes of Medical Science & Biochem Faculty marmara university

Amongst the mention of using temperature, isotopic vacuum distillation technique the electrolytic process is mentioned - of which lowers the ppm of deuterium concentration the most out of the listed techniques in this article.

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