Happy New Year!

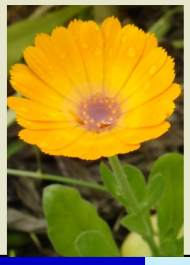
12 December 2021

# Herbal Analysis Reporter

HERBAL ANALYSIS SERVICES

**SPECIAL THANK YOU:**

- Research collaborators
- Research students
- World-wide followers



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## GREETINGS!

Let us say goodbye to another difficult year and welcome the new one with hope and inspiration to work together ( ... page 4)




## COVID-19: SCIENCE, POLITICS & APARTHEID

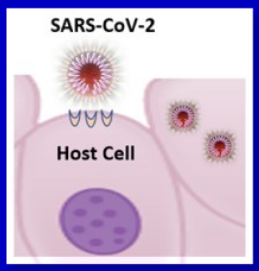
Starting from Wuhan (China) in December 2019 and two years on, the war between human and coronavirus continues. On the human side, science helped and so many battles were won but the war is far from over. On the virus front, updating its armory was the game changer with the key achievement seen in the battle of Kent, UK (alpha), South Africa (beta), Brazil (gamma), India (delta) and the now multiple countries (omicron). The most effective weapons used against the virus were the multi-billion profit making vaccines, some recycled drugs and of course quarantine and travel ban measures. One may wonder now when this war will end , who will win it and how? Killing their host is not in the best interest of parasites/pathogens and a less virulent strain that coexists with the human host could be a win-win situation for both adversaries — but who dictates the terms? The virus or humans? If humans, which humans? Those in rich nations or the world as a whole? (... page 3)

# From Research Front

## COVID-19 Research: In the Lab & Clinic

*The right questions should come before the right answers*

Our questions on potential therapeutics of COVID-19 focussed on three areas – (1) The initial viral entry into host cells (image right) which requires enzymatic processing of the viral spike proteins, (2) The pathological damage to the lungs and other organs mainly by the cytokine storm, and (3) The clinical treatment of critically ill patients. Exemplary publications made by our team of collaborators include on modulators of cytokines storm (e.g., Argabalin), our article in CTS Clinical & Translational Science on inhibitors of both endosomal and non-endosomal mechanisms of viral entry, and targeting specific signalling pathways (e.g., mTOR, VEGF, etc.). Our article in Phytotherapy Research shows the potential effectiveness of herbal oral care products in ventilator-associated pneumonia while our own clinical trial in Iran investigated the potential of Levamisole in non-hospitalised COVID-19 patents. Several articles are in the pipeline and our contribution to COVID-19 research will continue … Special thanks go to my Iranian collaborators.




## The Search for Natural Anticancer Agents Continues




Our oncology studies this year were also stretched from laboratory to clinical trials. Beyond assessment of natural products (e.g., flavonoids) that might sensitize cancer cells to chemotherapy, we tested the efficacy of some medicinal plants in the lab. For example, our publication shows the effect of *Nigella sativa* seed oil on the testosterone-Induced benign prostatic hyperplasia in rats (image left).

Our retrospective study on the epidemiological profile and outcome of primary paediatric brain tumours in Iran has been published. We also evaluated the clinical efficacy of *Aloe vera* on the prevention of acute radiation proctitis in colorectal cancer. The results of this randomized, placebo-controlled clinical trial was published in the *Journal of Gastrointestinal Cancer*.

*On the quest for clinical evidence*

## Expert Opinions & Communications

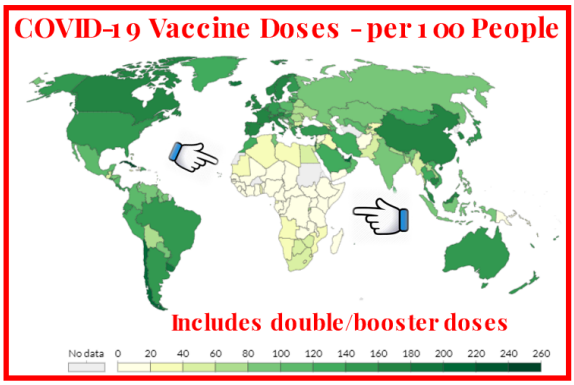
*Knowledge is not for saving BUT for sharing with others*

The large volume of requests we receive for our expert opinions, expert reviews and book proposals means that we have to be very selective in what we contribute. The top Q1 journals of the subject fields where our publications appeared this year includes *Mini-Reviews in Medicinal Chemistry*, *Current Opinion in Pharmacology*, *Biotechnology Advances*, *Neuroscience & Biobehavioral Reviews*, *Pharmacological Research*, *Current Medicinal Chemistry*, *Mitochondrion*, *Journal of Molecular Neuroscience*, etc. Our great deal of interest in neuroprotection field was inspired by the role of the gut microbiota in health and disease. The mitochondrial biogenesis and regulation and the role of oxidative stress in pulmonary diseases were among the topics we discussed. Our interests and research on wound healing continued and one big contribution this year was on the application of medicinal plants and natural products. Another major topic that we continued working on was the bioproduction process of natural products and biopharmaceuticals. The use of biotechnology tools and microbial systems, to generate alternative sources of valuable natural products, remain to be our major goal of research. (… page 3).

# THE IMPACT OF COVID-19 ON AFRICA

(... from page 1) Looking into the global statistics for COVID-19 vaccinations (image right), one could see the most populous African nation, Nigeria, at the far bottom-end of the list with less than 2% of the population receiving double vaccinations. The second most populous country in Africa, Ethiopia, has a similar record. I was also curious to see the COVID-19 statistics for one of the smallest African countries, Djibouti, with a population size of just under one million. Located at a strategically important corner of East Africa, Djibouti has been scrambled by military powers for bases — it currently hosts powerful military bases of regional, Western and Eastern nations including the US, Japan, France, Italy, Spain and most recently China and Saudi Arabia. According to the same COVID-19 data, only 26,087 people (2.6% of the population) in Djibouti have received double vaccinations (@ *10 December 2021*).

When some say that Africans live in a world of vaccine apartheid, I wonder how we could argue against? Should we be seeing the disparity shown in this **global map of shame** in the 21st century?

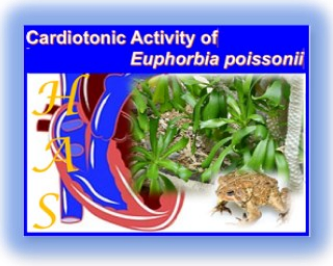



With the new strain designations using Greek alphabets now reached to omicron and may go all the way to omega, no amount of travel ban measures will make the virus regional. Africans and scientists across the world have been insisting only a global effort with fair sharing of resources will beat the virus. The reality however dictates that Africa without access to COVID-19 vaccines will feel the devastating impact of the disease on its economy for years to come.

In the last decade, many African nations have scored unprecedented rate of economic development as well as in industrialisation, modernizing agriculture and education. Intra-continental collaboration too through African Union and pan-African institutions such as the African Academy of Science made significant progress in formulating policy to solve common continental problems. It is only through more integration and using the untapped human and natural resources that Africa can overcome the impact of the COVID-19 crisis as well as the global bias against it, be it in social, economic or political arenas. **When it comes to vaccine sharing, there is certainly no scramble for Africa!**

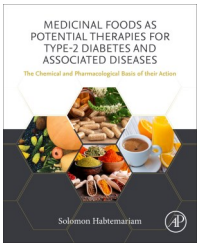
# OTHER RESEARCH

(... from page 2) As a way of saying thank you to my collaborators, I want to cite few more examples of our published work this year. Our cardioprotection study using amphibian model (picture left) was in good order in Cameroon—Thank you Dr David E. Tsala. The medicinal chemistry study on berberine open models was successful thanks to the continued hard work of my Italian friend, Prof. Giovanni Lentini. My long-time friend in Kerala (India) is retiring from work this year. Our book chapter based on the chemistry and pharmacology of *Premna species* is at a publication stage—Thank you Dr George K. Varghese. The numerous Iranian and European collaborators have made our contribution significant not just in publication volume but also in quality. Nutritional intervention, novel drug discovery and efficacy assessments through laboratory and hospital evaluations have taken central stage in our research interests—More to come in 2022.



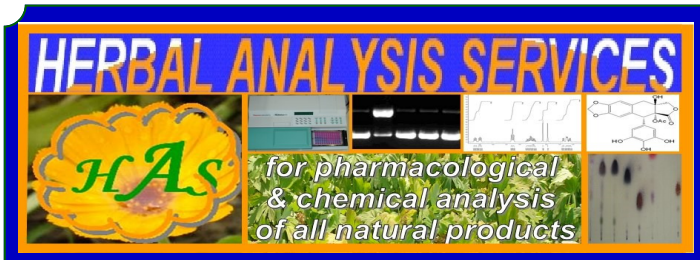

# NEW BOOK PROJECT

When I completed my self-authored book of over 1000 pages in 2019 (image below), I was not anticipating the next one to even be conceived in the near future. It looks that I made a quick recovery and have now started a new book project. Proposed to be at the biology-chemistry interface, this concept of Bridging the Gap between Biology & Organic/Medicinal Chemistry will be developed in the new Year—Watch this space for more news.




As a coauthor, I also have other book projects to be completed in 2022 ...

*Bridging the gap between biology and organic/ medicinal chemistry*




Dr Solomon Habtemariam

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Herbal Analysis Services has been founded & exclusively owned by Dr. Solomon Habtemariam. Its mission is three-fold: to discover novel drugs from natural sources; employ phytochemical and pharmacological assays to standardise plant medicines and provide expert advice and services on the subject area. The website also provides resources and news on our progress both on modernisation of herbal medicines and the discovery of novel pharmacologically active compounds. Dr. Habtemariam has published over 200 papers and regularly hosts experts from all over the world who come for research visits and training. We welcome all requests on natural medicine research and businesses.

***Elected Fellow:***

*the Royal Society of Medicine (2007); the Royal Society of Chemistry (2009); the African Scientific Institute (2014); the African Academy of Sciences (2015).*

## ON THE FAMILY FRONT

There was a moment of celebration in my family in what otherwise was a rather depressing year of COVID-19. Three years after I wrote similar story for my daughter (Mariam), it was my son's (Joseph's) turn this year to graduate. Sitting as a parent in the crowd of the graduation ceremony at Portsmouth was a source of huge excitement for the Mum and Dad (picture right). As a First Class graduate in Pharmacology and representing students in his faculty, Joseph was a speaker at the ceremony, which gave me more reason to record the event (video below). Joseph secured a job soon after his graduation and moved to work in a COVID-19 lab in Cambridge. As the saying goes, the mum and dad have been proud to see the chicks learned to fly!






## ARE YOU INSPIRED TO PUBLISH? IF SO, HOW MANY?

(... from page 1) When it comes to global university ranking, Britain has long been punching above its weight though its superpower status in ***contribution to the global scientific literature*** (CGSL) appears to be challenged in recent years. The Clarivate Highly Cited Researchers ranking that recognises the top 1% (1 in 1000 citation elite) researchers in the world identifies a dwindling trend for Britain: 9%, 8.3%, 8% and 7% of the global share for the years 2018, 2019, 2020 and 2021 respectively; while countries like China are on the rise. The trend of decline (also for the US and Germany) is partly because other countries (e.g. Australia) exhibit a dramatic increase in highly cited researchers—emerging countries in the list include, Bangladesh, Kuwait, Morocco and Georgia. Not so long ago, my little research highlighted the rather dismal level of CGSL by the London post-92 universities. Thanks to the national competition-based funding formula (e.g., REF) and academia that ignores CGSL, such a result was predictable. As a research quality measure, CGSL is simply incompatible with the education system and academic culture of post-92 universities. This year alone, there has been over 2,400 scientific papers published in the academic literature that cited my work. According to the Web of Science that Clarivate uses for ranking and Google Scholar, I am now the top author among all researchers/publishers currently working for my post-92 university. This achievement for an academic with no internal funding and research recognition within this university is a further indicator of the chronic lack of research role models in CGSL, as highlighted in my publication. From my own experience, the overall trend in the last decade is quite scary to watch as inspiration by the H-index profile and/or prolific authorship of professorial role models continued to erode. Predictably, these universities will find it hard to inspire younger academics to do research and/or publish more than that needed for league-table competitions—and with it, the existing big gap between the research elite and post-92 universities will widen.... I am proud to have my inspiration coming from the several hundreds of thousands of my website visitors, followers and a big army of global collaborators who are research leaders in their fields.

**I Wish You All a Happy Holiday & Peaceful & Prosperous New Year!**

**** Thank You! ****