Pangi Leaf (*Pangium edule* Reinw) Herbal Medicine:

A Marvelous Candidate for the Prominent HIV Herbal Medicine

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Abstract

A medicine named as Love herbal (LH) fabricated using zingiberaceae fruit (Golobe halmahera) with a very high concentration of IC50 = 6.54 ng/ml [1-6] had been compared with pangi leaf (Pangium edule Reinw) as well as the combination of pangi-LH herbal medicine especially in their functions of stopping the growth of HIV virus inside T Cell with CD 4 in its surface. By using optical spectroscopy techniques of fast Fourier transform infrared (FTIR), photo cells, and gas chromatography mass spectrometer (GCMS), we found their significant differences. Based on our former finding, the inhibition of pangi leaf was 2.19 times larger than that in love herbal medicine [7]. Such pangi leaf medicine has advantages of optical uniqueness behaviors due to \( \text{C=O} \) at 2260 cm\(^{-1} \) which might be closely in conjunction with very strong alkaline function associated with at least 4 compounds of octadecanoic acid (24.6 %), squalene (21.22 %), hexadecanoic acid (15.08 %), and phytol (10.33 %) to kill HIV virus more effectively and safely in human body. The results of our observation under real time photo cells with pure pangi leaf medicine at concentration of 400 to 800 ppm were superior to LH medicine. Such output suggests that pangi leaf medicine is very promising for healing HIV patients in the future applications.

Keywords: Love Herbal (LH), Pangi leaf, Optical Behavior, HIV herbal medicine, Anti-cancer.

ARTICLES

I. Introduction

Since the discovery of herbal medicine called as Love herbal (LH) from STIKES Halmahera fabricated using the largest flavonoid content of 6.54 ng/ml found in zingiberaceae fruit or Golobe Halmahera/ Maluku consisted of at least 5 types of such Golobe called in North Maluku province or Galoba in Maluku province, respectively [1-7], many efforts have been conducted by the authors of Mapanawang and Elim to study it particularly associated with its multitasking healing system which was first introduced by [5,6] based on optical behavior and electronic molecular system [8-10] in order to heal various deceases and parasites such as HIV as well as herbal chemotherapy capsule healing system comparable to cisplatin, a common commercial chemotherapy medicine [11]. In the special case of about ~36 years mystery of unsolved problem in healing HIV patience since Prof. Francoise Barre-Sinoussi, the nobel
Pangi Leaf (Pangium edule Reinw) Herbal Medicine: A Marvelous Candidate for the Prominent HIV Herbal Medicine

winner in 2008 due to her first time discovery of the novel virus in her laboratory study in ~1982, following by many different detail studies from Prof. Dr. Gallo, and his collaborators in 1984 [12-15], ones therefore would like to improve the former invention of LH medicine [1-11] by incorporating a possibility of the use of *pangi* leaf (*Pangium edule Reinw*) herbal medicine.

In this letter, we report for the first time that based on our former discovery in Ref. [11] that due to *pangi* leaf high inhibition of 94.8% in stopping the growth of HIV virus via the photo cells observation, a detail optical properties study of the medicine contents related to its chemical bonding is presented as well as its relationship with gas chromatography mass spectrometer (GCMS) detection of its main compounds content. We found that *pangi* leaf medicine has a great advantage of optical uniqueness behaviors due to **C≡C strong bonding at 2260 cm⁻¹** in comparison with that of LH medicine which might be closely in conjunction with very strong **C≡C alkaline function** in conjunction with at least 4 compounds of (i). octadecanoic acid (24.6 %), (ii). squalene (21.22 %), (iii). hexadecanoic acid (15.08 %), and (iv). phytol (10.33 %) to stop growing HIV parasite virus more effectively and safely in human body.

II. Research Method

The scientific procedure and design to overcome HIV spreading in CD4 of the surface of T cell of human being lymphocyte [16] is depicted in **Fig. 1** by using at least 10 steps of stopping HIV in the inner part of T cells. In this report, we try to provide our best scientific knowledge without our own laboratories expensive equipment which means that one sent the as fabricated herbal medicines to be investigated independently in few professional scientific laboratories located in main cities of Java, Indonesia such as in Jakarta, Bogor, and Serpong, respectively. After a deep thinking and discussion, the authors are then explained all the data based on the way it is.

![Figure 1. A scientific procedure and design to overcome HIV spread in T cell of human being using a herbal medicine fabricated using *pangi* leaf (*Pangium edule Reinw*). There are at least 10 steps to stop growing the HIV viruses inside T cell.](image)

III. Results and Discussion

**Figure 2** describes the chemical bonding spectroscopy of pure *pangi* leaf found in North Maluku/ Sulawesi, Indonesia, and its comparison with a mixture of Golobe Halmahera/ Maluku and *pangi* leaf measured using a Fourier transform infrared (FTIR) spectrometer, SHIMADZU, Japan of LIPI laboratory, Indonesia. We obtain that *pangi* leaf medicine has a great advantage of optical uniqueness behaviors due to a significant **C≡C strong bonding at 2260 cm⁻¹** in comparison...
with that of LH medicine which might be closely in conjunction with very strong C=\text{C} alkaline function to kill HIV virus without any bad effects in human T cells.

![Figure 2](image)

Figure 2. The FTIR response of future prominent HIV medicine character called as pure pangi medicine with the inhibition percentage is about 2.19 times higher than that in LH [1,11] related to the triple bonding of carbon strong absorption at 2260 cm$^{-1}$.

In investigating on how excellence both types of herbal medicines in curing HIV virus, we carried out a photo cells comparison on the samples in Premata IPB Laboratory, Bogor, West Java province, Indonesia. The results of our real time observation in photo cells with the concentration of 400 to 800 ppm of pure pangi leaf medicine show that more HIV viruses were destroyed in comparison with that of LH medicine as shown in Fig. 3 and Fig. 4, respectively. Moreover, at a high 800 ppm concentration of pure pangi leaf medicine, there were more HIV viruses destroyed in comparison with that of LH medicine. This is in agreement with our former inhibition study in Ref. [8,11] that pangi leaf had 2.19 times larger inhibition than that in LH medicine.

![Figure 3](image)

Figure 3. Photo cells observation on how pangi leaf medicine with different concentrations stopped growing HIV virus. It should be noticed that as the concentration of pangi leaf medicine reached 400 ppm to 800 ppm, the HIV virus were getting destroyed completely.

![Figure 5](image)

Figure 5 shows that there are 15 substances in pangi leaf herbal medicine measured using gas chromatography mass spectrophotometer (GCMS). From the 15 substances, ones discovered there were four significant largest compounds contributing to the medicine healing process especially in handling HIV virus as described in Fig. 4, involving (i). octadecanoic acid (24.6 %), (ii). squalene (21.22 %), (iii). hexadecanoic acid (15.08 %), and (iv). phytol (10.33 %), respectively.
Figure 4. A comparison between the photo cells observation of LH medicine and pangi leaf medicine when both types of herbal medicines were at the same concentration of 800 ppm, the HIV viruses seemed destroyed. However, when ones enlarged the view of the photo cells of LH medicine treatment to HIV virus, there were still some HIV viruses were alive. In this case, the pangi leaf herbal medicine was much better impacts to stop HIV growing, and even completely destroyed it all.

The physical chemistry chemical physics behavior of such complicated compounds associated with C = C strong absorption bonding at $2260 \text{ cm}^{-1}$ as depicted in Fig. 2 was investigated based on a multidisciplinary former works in Ref. [11, 17-21]. These findings are a gateway opportunity to improve future nanochip medicine as illustrated in Ref. [22-23].

Figure 5. Original data of GCMS measurement results of pangi leaf herbal medicine dated on 18th January 2017. There are at least 4 main compounds contributing to the medicine such as octadecanoic acid (24.6 %), squalene (21.22 %), hexadecanoic acid (15.08 %), and phytol (10.33 %), respectively. The original data measured from another professional laboratory was provided as it is just like “a scientist is more important than his excellent equipment”.

IV. Conclusion

In conclusion, a novel prominent herbal medicine fabricated by pangi leaf has been studied using at least three main experiment systems of FTIR chemical bonding, photo cells, and GCMS investigations. We obtained that the herbal medicine is superior to LH medicine due to its high inhibition of 2.19 times larger than LH medicine. Such
superiority was contributed by C≡C strong absorption bonding at 2260 cm\(^{-1}\) in conjunction with 4 largest compounds of (i). octadecanoic acid, (ii). squalene, (iii). hexadecanoic acid, and (iv). Phytol. This discovery is very promising for the future for healing system for HIV patients based on a deeper knowledge of this interesting herbal medicine discovery.

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Conflicts of interest

Both authors in this paper have no conflict of interest because they are working under a good collaboration to improve the development of science and technology in particular areas of both North Maluku and Maluku provinces.

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Dr. dr. Arend L. Mapanawang, Finasim is a very experienced director of Health Medical College called as STIKES Halmahera in Halmahera island located in North of Maluku, Indonesia. Dr. Arend is recently the Editor-in-Chief (EIC) of reputed International Journal of Health Medicine and Current Research (www.IJHMCR.com) indexed by Web of Science (WoS) since 2019. He is an internist doctor as well as an Indonesia scientist in herbal medicine including for the curing of malaria, HIV virus, and hepatitis with more than 20 years experiences. He had written various books including history and the cause of world wars books. His publications in various international journals have made him as a prominent invited speaker in the world such as in South Korea, United Kingdom, USA, and Germany. As a matter of facts, Dr. Arend is now one of the best scientist in North Maluku province.

Assoc.Prof. (Lektor Kepala) Hendry Izaac Elim, Ph.D is a young Indonesia scientist from Pattimura university (UNPATTI) with the rank 23rd in 2017 based on Webometrics (http://www.webometrics.info/en/node/96), or the 3rd rank best Indonesia physicist in this 21st century based on the SINTA data, RistekDikti in 2019. Prof. Elim is now a head of the Nanotechnology Research Center and Innovative Creation and Innovative Creation (PPNRI-LPPM, website: http://lemlit.unpatti.ac.id/pusat-pnr) of the Pattimura University (UNPATTI) as well as Chairman for Nanomaterials for Photonics Nanotechnology Laboratory (N4PN Lab), Physics Department, Faculty of Mathematics and Natural Sciences (FMIPA-UNPATTI), Ambon, Indonesia. He has been very active in the following scientific members of the Indonesia Theoretical Physicist, and MRS Indonesia. Due to his strong background of his B.Sc (S.Si) in Theoretical Physics in 1995 at Gadjah Mada university (UGM), and M.Si (M.Sc) in Theoretical Physics of Institut Teknologi Bandung (ITB) in 1999, he was successful in obtaining his Ph.D in the field of physics of nanoscience and nanotechnology, at National University of Singapore (NUS), Singapore on 13th December 2005. As soon as he finished his Ph.D, he was offered a postdoctoral position at NUS until September 2007, and then moved to IMRAM, Tohoku university, Sendai, Japan as research assistant professor for about 4.5 years. Dr. Elim research group at PPNRI-LPPM at Pattimura university was started on 24th April 2015 by educating his first 6 research B.Sc students. Since that triggered time, he already educated more than 60 graduated B.Sc up to 2019 in the fields of superfibers, bio-membranes, and herbal medicine as well as nanobattery system. Prof. Elim had been recently invited to give international scientific talks in prestigious 2018 PharmaNano in Las Vegas, and 2019 PharmaNano in New York as well as many quest lectures associated with the multitasking applications of physics in nanoscience and nanotechnology in many national universities such as University of Pelita Harapan, UNPATTI, Universitas Negeri Manado (UNIMA), Universitas Sam Ratulangi (UNSRAT), STIKES Halmahera, AKBID MAKARIWO, and University of Indonesia. According to Web of Science and Publons data, Prof. Elim has published over 70 papers with h-index of 23, and citation more than 2260. Moreover, Dr. Elim is recently a member of top scientific society such as AAAS (ID No. 41737449) since 2017-present, and ACS (ID No. 31447106) in 2018-2019.

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