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Elements to Consider for the Development of Natural Medicines of Character

[1]Amelec Viloria, [2]German Alvarez and [3]Jenny-Paola Lis-gutierrez
[1]Department of Industrial Engineering, University de la Costa, Barranquilla, Atlantico, Colombia
[2]Instituto Tecnologico Metropolitano, Medellin, Colombia
[3]Research Center of the School of Business, Fundacion Universitaria Konrad Lorenz, Bogota, Colombia

Abstract: One of the myths that has accompanied natural medicine is the belief that it is only based on the empirical knowledge, knowing that within it a process which can take several years to certify the effectiveness of the product is followed. Thus, it is intended through this research, studying the elements to consider for the development of drugs of natural character within the Colombian nation. The study methodology was based on the type of documentary research with a bibliographic design. In this sense they worked with researchers such as, Rang and Dale, Velasquez, among others. Among the results they highlighted that in recent years the natural medicine has flourished in the Colombian public for having demonstrated track their products beyond the effects effectiveness offered. The phases of production of traditional medicine can be used for the mass production of herbal medicine.

Key words: Natural medicine, natural drugs, procedures, highlighted, traditional medicine, production

INTRODUCTION

To live, grow and reproduce organisms need to transform a wide variety of organic compounds. These transformations require energy that ATPY obtained as the presence of enzyme systems. The set of specific reactions by which an organism produces substances and keeps its own life is known as metabolism. The most important molecules for life are proteins, carbohydrates, fats and nucleic acids (Rang, 2008).

Despite the very different characteristics of different living things, the general routes to modify and synthesize these substances are essentially the same for all with very minor modifications. These processes are known as primary metabolism and the compounds involved in the different routes are known as primary metabolites. It is called secondary metabolism to the set of processes involved in compounds with a much more limited and specific distribution by living being. The compounds involved in this metabolism are called secondary metabolites are species specific and are those who from now define as natural products. In a broad sense a natural product is made up of all the compounds of nature (Velazquez, 2016; Cerda, 2015).

One of the most significant moments in the treatment of the disease is diagnosed, then followed treatment. Hence, it is essential for the patient, understanding how the drug is consumed and how it will benefit in alleviating the symptoms of the disease that afflicts him. Therefore, knowing the operation of a drug in the patient's body should be discussed as much as the disease itself since, it is precisely the medicine the representation of hope of healing that has the subject goes to the doctor.

In this context of ideas, natural medicines should provide the necessary confidence, so, they can be used by patients. Therefore, they must follow a series of procedures that allow you to obtain a high level of acceptance by those who need the drug. Clearly, the way to get confidence is by demonstrating positive results, because that requires them to follow a set of procedures to authenticate its effects.

MATERIALS AND METHODS

All tracking study requires a series of steps to achieve the stated objectives. In this vein, this research is established as documentary, understanding that was based on analysis of various documents: for which he worked with a bibliographical design which allowed the analysis of categories, collect various information regarding the subject matter (Cerda, 2015).

As for the design of research this research was within the designs of non-experimental field in which the variables are not manipulated for the purpose of describing variables and analyze their impact and interaction in a given time, just as found in

Corresponding Author: Amelec Viloria, Department of Industrial Engineering, University de la Costa, Barranquilla, Atlantico, Colombia

Table 1: Phases in the production of drugs

Drug discovery (target selection)	Preclinical development (pharmacokinetics)	Clinical development			Approval by regulatory authorities	
		Phase 1	Phase 2	Phase 3		Phase 4
Title compound	Short-term toxicology	Pharmacokinetics, tolerability, side effects in healthy volunteers	Small-scale trials in patients to assess long-term efficacy and dose toxicology studies	Controlled clinical trials on a large scale	Complete data are submitted and reviewed by regulatory authorities	Post-marketing surveillance
Optimization of the lead compound	Formulation					
Pharmacological profiling	Large scale synthesis					
2-5 years	1-2 years		5-7 years		1-2 years	

reality. Furthermore, these researchers specify a non-experimental research design is a study that is done without the deliberate manipulation of variables (Auton, 2014).

In this vein, Hernandez and Col. mention: "what is done in non-experimental research is to observe events as they occur in their natural context and then analyze them". This indicates that there is no manipulation of variables by the researcher, only observes and describes (Bustamante, 2016).

Around the research design, Hernandez and Baptista, argue that it is a plan or a strategy that is developed to obtain the information required in the study. It noted above and given that the data will be obtained directly from the reality, the design of field research is not experimental. Similarly, Hernandez presented the non-experimental design as the study performed by the observation of phenomena in their natural environment to be analyzed later (Anonymous, 2016).

In a non-experimental study existing situations which are not caused by the researcher observed. Therefore, the study a non-experimental design will be used under the variables under study without intervention mediate or interfere occasional change of its natural habitat manipulation.

As is done at a specific time and in a given time is considered transeccional or transverse since, the researcher studied the event in a single moment of time. For its size, it is based more on statistical data than on direct observation. It shows how the interaction born social relationships, ranging structuring the different roles, about Sierra refers to this type of study refers to the variable and its rotations in small and medium groups (Anonymous, 2016).

The study also typified as transactional because the variables are measured at a given moment, as presented at the time of collecting information which according to Laurence (2014), considers that in this type study only "measuring characteristics of one or more groups of units in a given, without trying to assess the evolution of these units now".

RESULTS AND DISCUSSION

Secondary metabolites may be considered as products for the adaptation of an organism to survive in a particular ecosystem, 1 to formation of secondary metabolites in nature occurs from the primary metabolites. The synthesis of natural products begins with photosynthesis takes place in higher plants, algae and some bacteria.

It is an endothermic process which requires sunlight. Those unable to absorb light bodies get their energy from carbohydrates degradation. There are three main chemical intermediates such as acetyl-CoA, shikimic acid and mevalonic acid from these compounds the main group of natural products are biosynthesized as are fatty acids, anthraquinones, terpenes, steroids, alkaloids, coumarins, lignans, etc.

Any drug, whether this is of herbal origin requires an authentication process of its components, because that makes it a complex process. So, the "drug candidate" is facing the most common problem is to demonstrate the optimization of its component base to demonstrate whether it has the desired effect, verifying that does not produce side effects that can be serious for the patient which elapses for the following phases (Rang, 2008; Laurence, 2015) (Table 1).

The schema presupposes the closest reference in relation to the presentation of a common drug which is to assess the drug's effectiveness and process until the last phase corresponding with marketing. However, there are new procedures aimed understand diseases and disorders and that sense chemical praise they must be solved through the use of chemical compositions (Velazquez, 2016) (Fig. 1).

Within this scheme, the preclinical development is essential as it is at this stage where the outstanding pharmacokinetics develops in the first graph which is where it is displayed how the drug works in the body of the subject and what the positive effects are and negative in relation to disease. It is this step that demonstrates the effectiveness and thus promotes confidence or rejection by patients.

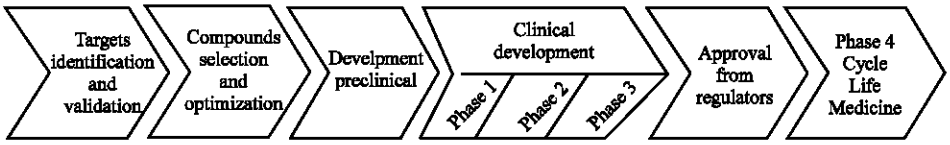

Fig. 1: Schedule of drug development

For the synthesis of secondary metabolites Nature uses a number of basic units as building materials (building blocks). These may have a carbon atom, two, five, six and three groupings, six and two, four carbon atoms and one nitrogen, etc. The simplest of the fragments (C1) consists of a single carbon atom, usually as methyl, often attached to oxygen, nitrogen and carbon occasionally. It derived from S-methyl-L-metionina (Abajo *et al*., 2015).

C2 unit is provided by acetyl and it is normal that many of these units are part of an alkyl chain and in fatty or part of phenols acids. The branched chain five carbon atoms C5 (isoprene unit) is present in all mevalonate derivatives such as terpenes and steroids. Phenyl propane units derived from C_6-C_3-phenylalanine or L.

Importance of natural products in the drug development: the importance of natural products lies in the very biological function in which they are biosynthesized. They may be useful for their direct potential as therapeutic agents can serve as models for the preparation of bioactive substances as raw material for the synthesis of substances of pharmacological interest and industrial interest as privileged structures using the concept of pharmacology for those products that are able to interact with various proteins and perform useful actions for health in disease processes (Abajo *et al*., 2015).

Undoubtedly natural products are biologically validated through the co-evolution with the rest of the living structures. In a recent study we analyzed the origin of new drugs by the FDA (Food and Drug Administration) approved between 1981 and 2008. This study shows that 57.7% correspond to natural products, defined as the properly so called, its derivatives and mimetic there by Laporte (2014).

We are at an exciting time for biomedical research, speaking of Molecular Medicine, Molecular Cardiology and very clearly Chemistry is the center of biomedical research. Historically, drug discovery has been associated with two disciplines: Chemistry of natural products and organic synthesis. No other discipline can discover and develop new small molecular weight molecules that can be used as drugs. The discovery and development of Pharmacy is impossible without chemistry you.

Several million synthetic compounds only an indeterminate number between 200-3,00,000 natural products are known, 99% of known chemicals are synthetic and. In this scenario what answer leads us to explain that almost 60% of the drugs are natural? The success of natural products is that they are compounds that have already been validated by evolution have been biosynthesized, degraded and transformed by enzymatic systems. Therefore, when we interact with target molecules they made in a special way. Thus, synthetics will only succeed when imitators of natural products.

In this century, the discovery and development of drugs should be based on Laporte (2014), Bakke *et al*. (2014), Berkowitz and Katzung (2014).

An extensive exploration of natural products, using all possible natural resources will. The improved methods of combinatorial synthesis assisted by computational tools and a much more advanced rational design. A significant reduction in the costs of drugs or biologic origin. Natural resources may be land, higher plants, microorganisms, vertebrates and invertebrates. Such as marine algae, sponges, microorganisms with special emphasis on actinomycetes and invertebrates.

Undoubtedly cancer is one of the most severe health problems and need the discovery and development of new anti-cancer and new strategies for more effective clinical treatment. Research in the area of cancer is focused on specific mechanisms of cancer and related molecular targets. It is investigated to improve cytotoxic agents acting on ubiquitous targets such as DNA and tubulin.

Breast cancers, throat, prostate and colon are multicausal in contrast to the CLM which is produced by a gene defect. At the present time, the treatment of solid tumors based on a single mechanism does not seem very satisfactory, instead are usually strategies that combine transduction inhibitors signal and cytotoxic. The process is known as carcinogenesis by which generate cancers and ways to avoid this process are two: vaccination and chemoprevention. Once the cancer begins to develop the pious most used are: surgery, radiotherapy, chemotherapy. Being able to use a combination thereof.

Within chemotherapy one of the problems of failure is the appearance of the drugs multidrug also called

MDR. There are currently on the market a broad array of drugs but are still insufficient because it comes with difficulty in the US to 60% success in the cancer treatment while in Europe we approximate masters 50% on a global basis.

In analyzing the results evidenced in fulfilling the necessary conditions for a natural drug to be authenticated by the scientific community, from the analysis of common drugs, phases the importance visualized having tracking drug from entering the body and its elimination through sweat, urine or feces. This process allows to visualize the concentration levels of the base component of a drug, making it viable. Hence, the application of l to pharmacokinetics necessary to study the processes which can be summarized with the acronym LADME (release, absorption, metabolism and excretion distribution).

Phytotherapy is the first medicine that he met the man and indeed the most experienced, since, before the chemicals appeared in the last century, herbal medicines and their active ingredients were the only drug he knew the man to regain health and to prevent possible diseases. Although, the chemistry was gone relegating to the background natural medicine and herbal medicine, having reached the pharmaceutical industry to monopolize medicine official, the fact is that medicinal plants are infinitely more tested and proven in humans throughout history that pharmaceutical drugs with how safe we feel.

However, the fact that leads behind a large empirical experience does not make an exempt practice of risk, since, like any drug, the active ingredients of plants are chemical compounds that interact with our own chemistry internal and its use requires great knowledge to not cause an imbalance in our body.

Actually, a phytodrug is not so different from a conventional drug. In fact, almost all prescription drugs us our traditional medical contain the same active ingredients found in medicinal plants. The difference is that synthetic drugs contain active principles that have been isolated and created in a laboratory whereas plants containing the same active ingredients naturally, co-acting with other substances also present in the plant, in fact, often they work in synergy, increasing its effects.

CONCLUSION

The acceptance of a medicine in the pharmaceutical market, it is a cumbersome and long procedure, even more so if it comes to herbal medicines which in many cases do not enjoy acceptance at “first sight”. This motivates those who have focused on the development of homeopathic science or any of the branches that emphasize the use of natural products to develop procedures that demonstrate the effectiveness of the product. So that, following the already proven pharmaceutical procedures can be obtained more favorable results regarding the use of natural medicine.

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