

## Meeting the challenges of today's in pharmacology.

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### Introduction

Pharmacology is the science that studies the origin, actions and properties of the chemical substances on living organisms, verifying their mechanisms of action, including the beneficial or toxic effects to the individual. Pharmacology presents the most diverse applications, as diagnosis, prevention and disease treatment and also, prevent and prepare for side effects. In addition, it turns to discover new drugs that can act more specifically and more efficiently in the control and diseases treatment, improving the life quality of the population affected by such disorder.

Today, one of the challenges of pharmacology is to seek continuously the new aspects of production, marketing and use of medicines, so, a much larger number of people can benefit from medicines that are safe, more effective, and economically accessible, considering the sustainability production aspects. For commercial use the new drugs obtained, regardless of the source, should ensure that they will maintain their ability and power to act.

To explore and ensure that the drug will retain its properties new techniques, such as nanotechnology can be applied in the development of new medicines and used for specific drugs transport in the body [1].

Moreover, it should be considered that the drug mechanism action may be affected and degraded by several mechanisms that involve multiple reactions with others compounds. Thus, nanoparticles encapsulation for drug-delivery is extremely important to ensure drug protection and increase the permanence time in the organism, stability and decreasing toxicity. In addition, the effects of encapsulated drugs - in relation to free drug - suggest the need for continuous study in new material technologies for the development of new nanostructures to combat diseases [2].

New evidence in the field of nanotechnology, in addition to the development of more specific and effective drugs, led to a development of other areas and in parallel. Despite the high cost associated with it, nanotechnology, as well as all areas under development, its high performance and power to act on diseases stand out conventional products [3].

Despite the evident progress in nanotechnology area, caution is needed because there are few studies that explore the issues related to security of the nanocomposites application, both in humans and in environment. But we still do not know, the effect of the accumulation of these nanocomposites over time and their ability to react with other components present in the place where they meet.

Besides above mentioned challenges, there are many others to be resolved, however, none of these has currently been a strong barrier on growth of pharmacology science. In order to achieve a healthy growth on the pharmacological area, challenges must not be ignored. The people need to be treated with high quality medicines, and nanotechnology is apparently the way to support this expectation.

### References

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