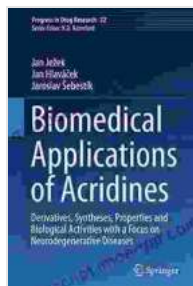


Derivatives Syntheses Properties And Biological Activities With Focus On



Biomedical Applications of Acridines: Derivatives, Syntheses, Properties and Biological Activities with a Focus on Neurodegenerative Diseases (Progress in Drug Research Book 72) by JoAnn Moser

★★★★☆ 4.6 out of 5

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Derivatives are compounds that are structurally related to a parent compound. They are typically synthesized by chemical reactions that modify the parent compound's functional groups or substituents. Derivatives can have a wide range of properties, depending on the nature of the modifications that have been made.

In recent years, there has been a growing interest in the synthesis and study of derivatives, particularly in the field of pharmaceuticals. This is because derivatives can often provide improved potency, selectivity, and bioavailability compared to the parent compounds.

This article provides a comprehensive overview of the synthesis, properties, and biological activities of derivatives. We will focus on

derivatives that have been synthesized with a focus on improving their biological activity.

Synthesis of Derivatives

There are a variety of methods that can be used to synthesize derivatives. The most common methods include:

* **Functional group modification:** This involves modifying the functional groups of the parent compound. For example, a hydroxyl group can be converted to an ester or an amide group. * **Substituent modification:** This involves modifying the substituents of the parent compound. For example, a methyl group can be replaced with a chlorine atom. * **Ring modification:** This involves modifying the ring structure of the parent compound. For example, a benzene ring can be converted to a pyridine ring.

The choice of synthesis method depends on the desired properties of the derivative. For example, if the desired derivative is to have improved potency, then the synthesis method should be chosen to maximize the number of functional groups that are available for interaction with the target receptor.

Properties of Derivatives

The properties of derivatives depend on the nature of the modifications that have been made to the parent compound. However, some general trends can be observed.

* Derivatives are typically more lipophilic than the parent compounds. This is because the modifications that are made to the parent compound often increase the number of carbon-carbon bonds. * Derivatives are typically

more stable than the parent compounds. This is because the modifications that are made to the parent compound often reduce the number of reactive functional groups. * Derivatives can have a wide range of biological activities. This is because the modifications that are made to the parent compound can change the way that the compound interacts with biological molecules.

Biological Activities of Derivatives

Derivatives have a wide range of biological activities. Some of the most common activities include:

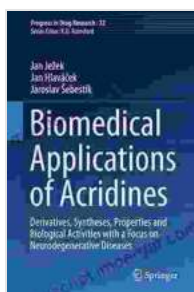
* **Antibacterial activity:** Derivatives have been synthesized that have activity against a wide range of bacteria. * **Antifungal activity:** Derivatives have been synthesized that have activity against a wide range of fungi. * **Anticancer activity:** Derivatives have been synthesized that have activity against a wide range of cancer cells. * **Anti-inflammatory activity:** Derivatives have been synthesized that have activity against a wide range of inflammatory conditions. * **Neuroprotective activity:** Derivatives have been synthesized that have activity against a wide range of neurodegenerative diseases.

The biological activities of derivatives are often related to the modifications that have been made to the parent compound. For example, the addition of a fluorine atom to a parent compound can often increase its antibacterial activity.

Derivatives are compounds that are structurally related to a parent compound. They can be synthesized by a variety of methods, and their properties and biological activities depend on the nature of the

modifications that have been made. Derivatives have a wide range of biological activities, and they are often used in the development of new pharmaceuticals.

This article has provided a comprehensive overview of the synthesis, properties, and biological activities of derivatives. We have focused on derivatives that have been synthesized with a focus on improving their biological activity. We hope that this article has been helpful and informative.



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