

# The magic of the guanidine 2-azabicycloalkane derivatives

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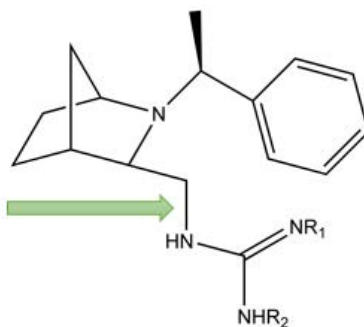
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Guanidines are extensively utilized across various domains, including as propellants in airbags [1], catalysts [2], ligands [3], molecular adhesives [4] in organic and metal-organic chemistry, sweeteners [5] in the food industry, and agents in polymerization processes. Their most significant application resides in medicinal chemistry [6], where they serve as integral components of numerous pharmaceutical agents.

Concurrently, derivatives of 2-azabicycloalkanes exhibit diverse biological activities; however, they have been comparatively less explored. Consequently, the integration of guanidine and 2-azabicycloalkane fragments presents a compelling and promising avenue for the development of novel therapeutic agents.

Despite their potential, the conformational flexibility inherent in guanidine-2-azabicycloalkane derivatives presents substantial challenges to their crystallization. This difficulty primarily arises from the bonding interactions between the 2-azabicycloalkane and guanidine moieties (Fig. 1). Additionally, the synthetic process may yield by-product that, unlike the target guanidine derivatives, tend to crystallize more readily.

In our investigation, we achieved partial success in crystallizing guanidine-2-azabicycloalkane derivatives. Notable, one of the synthetic pathway led to the unexpected formation of a crystallizable by-product.



**Figure 1.** Scheme of the studying guanidine 2-azabicycloalkane derivatives.

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