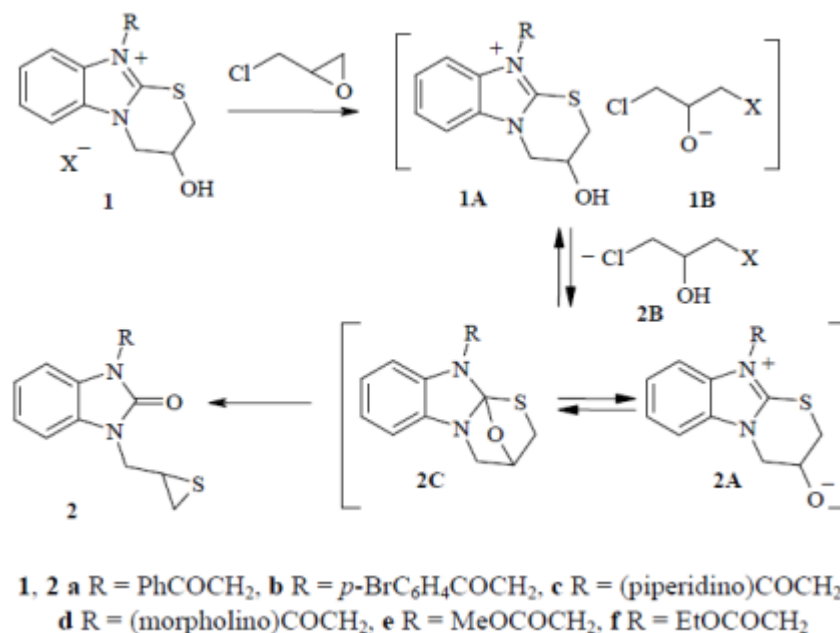


MECHANISM OF BENZIMIDAZO[2,1-*b*]THIAZANIUM SALTS RECYCLIZATION UNDER THE ACTION OF EPICHLOROHYDRIN

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In our previous works we have found the elegant way of thiazanium salts **1** transformation under the action of epichlorohydrin into thiirane derivatives **2**. The mechanism of this unusual reaction is very interesting and its analysis can give a new information about possible driving force of recyclization processes.



The conversion of compounds **1** → **2** is caused by the fact that epichlorohydrin is able to bind halide anions forming the alkoxide anion of glycerin dihalohydrin **1B** which is rapidly protonated as a result of the hydroxyl group of thiazanium salt **1**, assisting the irreversible course of recyclization of the latter to thiirane through the oxidothiazanium zwitterion **2A** and its covalent form **2C**. The synchronous occurrence of a reaction with addition of chloride ion to the oxirane with cleavage of proton from the thiazanium salt is also possible. If the OH group is protected by acylation then recyclization does not occur, which is caused by the impossibility of carrying out the stage of forming intermediate **2A**. It is interesting that with perchlorate salts of **1**, the reaction also does not proceed due to the low nucleophilicity of this anion.