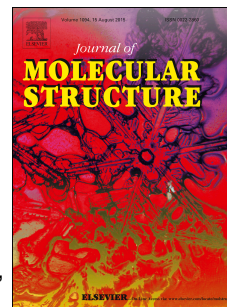


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Synthesis and Crystal Structure of Quinolinium Salt: Assignment on Nonsteroidal Anti-inflammatory Activity and DNA Cleavage Activity

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Abstract: To develop new anti-inflammatory and DNA cleavage agent with improved pharmaceutical profile, five quinolinium salt based compounds have been synthesized and x-ray characterization of these quinolinium salts have been reported here. These quinolinium salts have potential to show the better anti-inflammatory activity as well as DNA cleavage activity. The anti-inflammatory activities of quinolinium salts **1-5** have been evaluated by complete Freund's adjuvant (CFA) induced rat paw edema method. The DNA cleavage activities of quinolinium salts **1-5** were analyzed by using plasmid pBR322. The crystal structure of quinolinium salt **1, 2** and **3** have shown the intermolecular non-covalent interactions such as cation $\cdots\pi$, $\pi\cdots\pi$, C-H $\cdots\pi$, C-H \cdots X (X= I and Br) and C-H \cdots N interactions.

Keyword: Quinolinium salts, Non-covalent interactions, Anti-inflammatory activity, DNA cleavage activity, Docking studies.

INTRODUCTION: The major biological action of nonsteroidal anti-inflammatory drugs (NSAIDs) is the inhibition of cyclooxygenase (COX) mediated production of pro-inflammatory prostaglandins and thromboxanes.[1] Further, inflammations may implicated in causing cancer therefore nonsteroidal anti-inflammatory drugs (NSAIDS) may be an important target for cancer prevention strategy.[2] At the beginning of the 1990s two COX isoforms were discovered: one (COX-1) constitutively present in many tissues such as stomach, kidney, and

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