# Article information:

Excited state intramolecular proton transfer in 1,4-dihydroxyanthraquinone - ScienceDirect
<https://www.sciencedirect.com/science/article/pii/S0301010422003366>

# Article summary:

1. The excited state intramolecular proton transfer process of 1,4-dihydroxyanthraquinone in acetonitrile was investigated by steady-state spectroscopy, transient absorption spectroscopy and density functional theory (DFT) calculations.

2. It was demonstrated that 1,4-dihydroxyanthraquinone has three different structures in acetonitrile: the original structure, the single proton transfer structure and the double proton transfer structure.

3. The results of theoretical calculations as well as experimental results of ultraviolet (UV)-visible absorption and emission spectroscopy indicate that the intramolecular excited state proton transfer process exists in the single proton transfer structure.

# Article rating:

May be slightly imbalanced: The article presents the information in a generally reliable way, but there are minor points of consideration that could be explored further or claims that are not fully backed by appropriate evidence. Some perspectives may also be omitted, and you are encouraged to use the research topics section to explore the topic further.

# Article analysis:

The article is overall reliable and trustworthy due to its use of multiple sources of evidence such as steady-state spectroscopy, transient absorption spectroscopy and density functional theory (DFT) calculations to support its claims. Furthermore, it provides a comprehensive overview of the research conducted on 1,4-dihydroxyanthraquinone's ESIPT process with detailed explanations for each step taken. The article also presents both sides of the argument regarding whether or not this molecule undergoes an ESIPT process fairly without any bias towards one side or another.

However, there are some potential biases present in the article which could be addressed further. For example, while it does mention possible applications for 1,4-dihydroxyanthraquinone such as dye-sensitized solar cells and photocatalysis, it does not provide any evidence to back up these claims or explore any potential risks associated with them. Additionally, while it does provide a comprehensive overview of the research conducted on this molecule's ESIPT process, it does not explore any unexplored counterarguments or missing points of consideration which could be addressed further in future research.

# Topics for further research:

* 1,4-dihydroxyanthraquinone applications
* 1,4-dihydroxyanthraquinone risks
* 1,4-dihydroxyanthraquinone ESIPT counterarguments
* 1,4-dihydroxyanthraquinone unexplored points
* steady-state spectroscopy applications
* transient absorption spectroscopy applications

# Report location:

<https://www.fullpicture.app/item/f9f8e88eb14bcba694474b7bbb657736>