# Article information:

3-MCPD and glycidol coexposure induces systemic toxicity and synergistic nephrotoxicity via NLRP3 inflammasome activation, necroptosis, and autophagic cell death - ScienceDirect
<https://www.sciencedirect.com/science/article/pii/S0304389420322317>

# Article summary:

1. This is the first study to investigate the toxicity mechanisms of coexposure to food contaminants 3-MCPD and glycidol.

2. Coexposure conditions induced a more toxic response in the organs including kidney, lung, testis, and heart.

3. NLRP3 inflammasome activation, necroptosis, and autophagic cell death contributed to synergistic nephrotoxicity caused by 3-MCPD and glycidol coexposure.

# 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 “3-MCPD and Glycidol Coexposure Induces Systemic Toxicity and Synergistic Nephrotoxicity via NLRP3 Inflammasome Activation, Necroptosis, and Autophagic Cell Death” is an informative piece of research that provides insight into the potential health risks associated with exposure to 3-MCPD and glycidol. The authors provide evidence from both in vitro and in vivo models as well as next-generation sequencing (NGS) analysis to support their claims that coexposure to these two food contaminants can lead to systemic toxicity effects as well as synergistic nephrotoxicity.

The article is generally reliable in its reporting of the findings from the research conducted; however, there are some potential biases that should be noted. For example, while the authors do mention that EFSA has established a tolerable daily intake (TDI) for 3-MCPD and 3-MCPDEs, they do not mention any TDI for glycidol or GEs which could lead readers to believe that these substances are safe at any level of exposure when this may not be true. Additionally, while the authors do note that high concentrations of GEs have been found particularly in oils and fats as well as foods containing these substances such as infant formula, they do not explore any potential health risks associated with this type of exposure which could be important for readers to consider when making decisions about their diet or lifestyle choices.

In conclusion, while this article does provide valuable information about the potential health risks associated with exposure to 3-MCPD and glycidol coexposure it does have some potential biases which should be taken into consideration when evaluating its trustworthiness and reliability.

# Topics for further research:

* Tolerable daily intake (TDI) for glycidol
* Health risks associated with 3-MCPD and glycidol coexposure
* Health risks associated with high concentrations of GEs
* Infant formula and 3-MCPD and glycidol coexposure
* Oils and fats and 3-MCPD and glycidol coexposure
* Autophagic cell death and 3-MCPD and glycidol coexposure

# Report location:

<https://www.fullpicture.app/item/16d03c1f1f11182b715f7299b142b4c6>