# Article information:

Oxidation towards enrofloxacin degradation over nanoscale zero-valent copper: mechanism and products | SpringerLink
<https://link.springer.com/article/10.1007/s11356-022-24984-5>

# Article summary:

1. Enrofloxacin (ENR) is a widely used animal-specific fluoroquinolone antibiotic in livestock and poultry breeding, and its consumption is expected to increase by 67% by 2030.

2. Traditional technologies for eliminating antibiotics, such as biodegradation, membrane separation, and adsorption, are not extensively employed due to poor removal efficiency, long processing times, and higher cost effectiveness.

3. Advanced oxidation processes, such as Fenton oxidation, ferrate(VI), ozone oxidation, activated persulfate oxidation, electrochemical oxidation, and photocatalytic oxidation are effective methods for removing emerging contaminants like ENR. Metal catalysis using zero-valent metals like copper is considered an economical and convenient way to activate molecular oxygen for contaminant degradation.

# Article rating:

Appears strongly imbalanced: The article is written in a biased or one-sided way, and the information it provides is not trustworthy enough to be considered a reliable source. You should consult other sources to find reliable information on the presented issues.

# Article analysis:

该文章主要介绍了一种利用纳米零价铜氧化降解恩诺沙星的方法及其机理和产物。然而，该文章存在以下问题：

1. 偏见来源：该文章没有提到抗生素在畜牧业中的使用可能导致抗药性菌株的出现，这是一个严重的公共卫生问题。此外，该文章没有探讨使用抗生素对动物健康和福利的影响。

2. 片面报道：该文章只介绍了高级氧化过程作为处理抗生素污染的有效方法，但并未提及其他技术如生物降解、膜分离和吸附等方法。这些传统技术虽然效率较低，但仍然有其应用价值。

3. 无根据主张：该文章声称全球食品动物生产中抗生素消耗量预计将在2030年增加67％，但未提供相关数据或研究支持此观点。

4. 缺失考虑点：该文章没有考虑到纳米零价铜本身可能对环境和人类健康造成潜在风险。此外，该方法是否可扩展到大规模应用也需要进一步研究。

5. 主张缺失证据：该文章声称高级氧化过程可以将抗生素降解为小分子，提高其生物可降解性和消除率，但未提供相关实验数据或文献支持此观点。

6. 未探索反驳：该文章没有探讨其他学者对高级氧化过程的争议和质疑。例如，一些学者认为这些方法可能会产生有毒副产物，并且需要更多的研究来评估其环境和健康风险。

7. 宣传内容：该文章强调了纳米零价铜氧化降解恩诺沙星的优势，但未提及任何潜在缺点或限制。此外，该文章没有平等地呈现双方观点，而是只关注了一种处理方法。

综上所述，该文章存在一些问题，需要更全面、客观地考虑抗生素污染问题及其处理方法的优缺点和潜在风险。

# Topics for further research:

* Antibiotic resistance in animal agriculture
* Other methods for treating antibiotic pollution
* Evidence for projected increase in antibiotic consumption
* Potential risks of nanoscale zero-valent copper
* Evidence for improved biodegradability and elimination rates
* Controversies and limitations of advanced oxidation processes

# Report location:

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