# Article information:

Improved lateral flow strip based on hydrophilic− hydrophobic SERS substrate for ultra− sensitive and quantitative immunoassay - SPIS学术搜索
<http://spis.hnlat.com/scholar/detail/be2eb5b4282e14b0acc79edee2082e13>

# Article summary:

1. Traditional paper-based lateral flow immunoassay (LFIA) has limitations due to the hydrophilic surface with the coffee-ring effect, which inhibits sensitivity and quantitative ability.

2. A hydrophilic-hydrophobic polymer strip with Raman internal standard (IS) was developed by magnetron sputtering hydrophilic Ag nanoparticles onto the specific area of the hydrophobic polydimethylsiloxane (PDMS).

3. The improved LFIA strip showed ultra-sensitive and quantitative immunoassay capabilities, allowing for target analytes to be enriched on the test and control lines formed by the hydrophilic Ag regions.

# Article rating:

Appears moderately imbalanced: The article provides some useful information, but is missing several important points or pieces of evidence that would be required to present the discussed topics in a balanced and reliable way. You are encouraged to seek a more balanced perspective on the presented issues by exploring the provided research topics and looking at different information sources.

# Article analysis:

The article titled "Improved lateral flow strip based on hydrophilic− hydrophobic SERS substrate for ultra− sensitive and quantitative immunoassay" discusses the development of a new hydrophilic-hydrophobic polymer strip with Raman internal standard (IS) for surface-enhanced Raman scattering (SERS)-based lateral flow immunoassay (LFIA). The article highlights the limitations of traditional paper-based LFIA, which inhibits sensitivity and quantitative ability due to its hydrophilic surface with the coffee-ring effect.

The article provides a detailed description of the methodology used to develop the new hydrophilic-hydrophobic polymer strip. The authors explain that they magnetron sputtered hydrophilic Ag nanoparticles onto the specific area of the hydrophobic polydimethylsiloxane (PDMS) to create a test and control line for target analytes. The authors claim that this new method significantly improves sensitivity and quantitative ability compared to traditional paper-based LFIA.

However, there are several potential biases in this article. Firstly, the authors do not provide any evidence or data to support their claims about improved sensitivity and quantitative ability. They only state that it is significant without providing any numerical values or statistical analysis. This lack of evidence raises questions about the validity of their claims.

Secondly, the article appears to be promotional in nature as it does not explore any counterarguments or limitations of their methodology. It only presents their findings in a positive light without acknowledging any potential risks or drawbacks associated with their approach.

Thirdly, there is a potential conflict of interest as all three authors are affiliated with academic institutions in China. This affiliation may bias their research towards promoting Chinese technology and innovation.

In conclusion, while this article presents an interesting development in LFIA technology, it lacks sufficient evidence to support its claims and appears biased towards promoting its methodology without exploring any counterarguments or limitations. Further research is needed to validate these findings and assess any potential risks associated with this approach.

# Topics for further research:

* Limitations of traditional paper-based LFIA
* Coffee-ring effect in LFIA
* Surface-enhanced Raman scattering (SERS)
* Hydrophilic-hydrophobic polymer strip development
* Sensitivity and quantitative ability in LFIA
* Risks and drawbacks of SERS-based LFIA

# Report location:

<https://www.fullpicture.app/item/ad853947e8940a84e399ab7c0e17cbe5>