# Article information:

In situ Synthesis of DNA Microarray on Functionalized Cyclic Olefin Copolymer Substrate | ACS Applied Materials & Interfaces
<https://pubs.acs.org/doi/10.1021/am900884b>

# Article summary:

1. This article describes a new method for in situ synthesis of DNA oligonucleotide microarrays on cyclic-olefin copolymer (COC) substrates.

2. The method involves the pre-patterning of a SiO2 thin film array on the inert and hydrophobic COC surface, followed by precision delivery of phosphoramidite chemistry using an inkjet DNA synthesizer.

3. The in situ SiO2−COC DNA microarray demonstrated superior quality and stability in hybridization assays and thermal cycling reactions, and can be used to construct DNA origami nanostructures.

# Article rating:

Appears well balanced: The article presents the information in a reliable and balanced way, without biases and prejudices. The claims made in the article are well supported and, where applicable, all sides of the argument are given opportunity to present their point of view. The article appears trustworthy and reliable.

# Article analysis:

This article is generally reliable and trustworthy, as it provides detailed information about the methods used to create the in situ SiO2−COC DNA microarray, as well as evidence of its superior quality and stability in hybridization assays and thermal cycling reactions. Furthermore, it provides evidence that pools of high-quality mixed-oligos can be cleaved off the SiO2−COC microarrays and used directly for construction of DNA origami nanostructures.

The article does not appear to have any potential biases or one-sided reporting, as it presents both sides equally with no promotional content or partiality. It also does not appear to have any unsupported claims or missing points of consideration, as all claims are supported by evidence from experiments conducted by the authors. Additionally, there are no unexplored counterarguments or missing evidence for the claims made in the article.

The only potential issue with this article is that it does not mention any possible risks associated with using this method for creating DNA microarrays on COC substrates. However, this is likely due to the fact that this is a research paper rather than a safety assessment document, so this omission is understandable.

# Topics for further research:

* DNA microarray safety assessment
* DNA origami nanostructure risks
* COC substrate toxicity
* Thermal cycling reaction hazards
* Hybridization assay safety
* SiO2−COC DNA microarray applications

# Report location:

<https://www.fullpicture.app/item/c94dcd306253e24c1396212f4b3b7625>