mRNA: what is the best purification method?

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Although the potential of mRNA in therapies is seemingly endless, obtaining the quantities of synthetic mRNA needed for clinical treatment remains a bottleneck in large-scale manufacturing. Traditionally, purification of mRNA is achieved by a variety of methods – but what is the right method for your process? We sum up the pros and cons of five common methods below.

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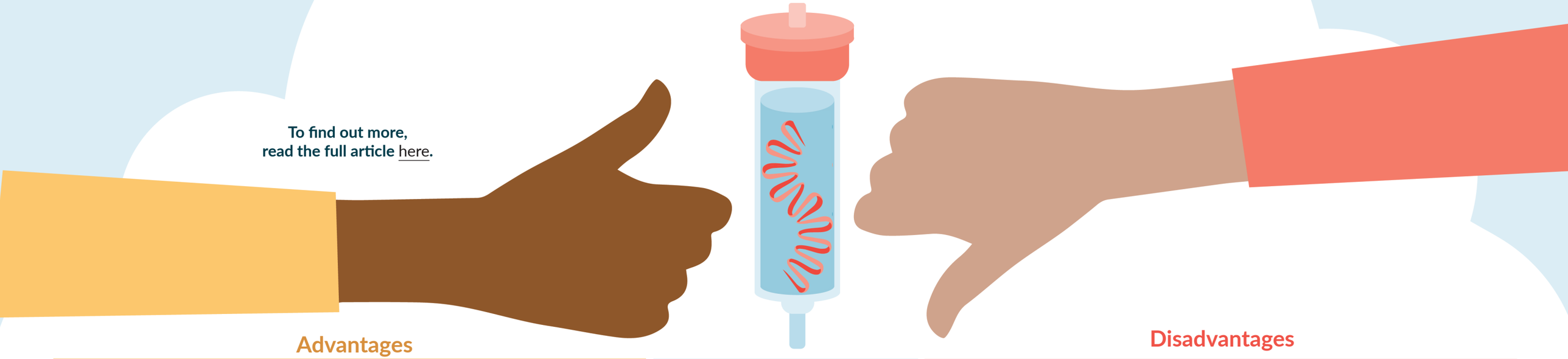
To find out more, read the full article here.



Advantages		Disadvantages
High resolution Some selectivity for product impurities	**Reversed phase**	Limited column capacity Use of expensive/flammable/toxic chemicals Column fouling impacts resolution
Native purification possible Scalable	**Ion exchange chromatography**	Column capacity and recovery (HPLC) May need toxic chemicals for denaturation Purified product can contain traces of elution salts
Native purification possible	**Size exclusion chromatography**	Separation efficiency affected by alternative folding Flow limited
Native purification possible Scalable Replacement for reversed phase	**HIC**	Non-selective
Native purification possible Scalable Platform solution for wide range mRNA molecule sizes – selective to polyA	**Affinity chromatography**	Requires additional polishing step to remove product-related impurities