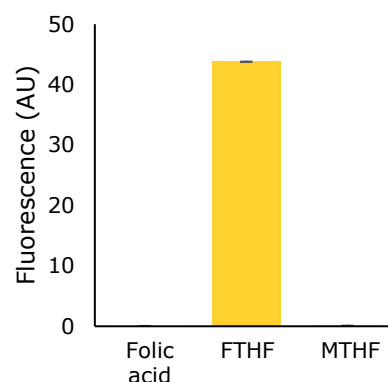


# Optimer<sup>®</sup> binder for 5-formyl-5,6,7,8-tetrahydrofolate

Validated Optimer<sup>®</sup> binder for the detection & quantification of folate

Target	5-formyl-5,6,7,8-tetrahydrofolate
Selectivity	Not cross-reactive with folic acid or 5-methyltetrahydrofolate.
Applications	ELISA-like assays
Optimer <sup>®</sup> size	61 nucleotides

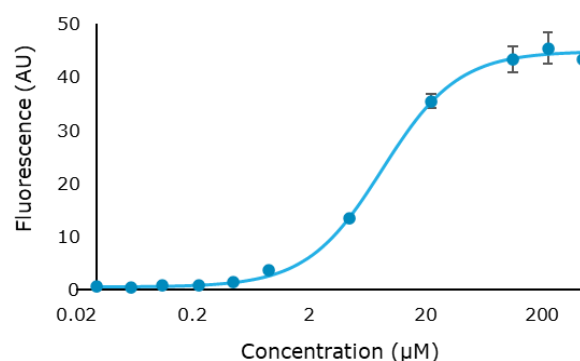


5-formyl-5,6,7,8-tetrahydrofolate Optimer<sup>®</sup> binders are highly selective as demonstrated using an Optimer<sup>®</sup>-based ELISA-like assay.

## Target information

5-formyl-5,6,7,8-tetrahydrofolate, also known as folinic acid or leucovorin, is naturally found in food and a member of the B-vitamin complex family. It is readily converted to the active form, tetrahydrofolate (THF) without requiring the action of the enzyme dihydrofolate reductase (DHFR), thus, its function as a vitamin is unaffected by drugs inhibiting this enzyme, such as methotrexate. THFA plays a key role in the synthesis of DNA, RNA, and proteins. Folic acid deficiency is associated with impairment of cell division, accumulation of possibly toxic metabolites such as homocysteine, and impairment of gene methylation reactions, thus increasing neoplastic risks. Folate deficiency can also lead to foetal neural tube defects and megaloblastic anaemia. Supplementation and fortification of foodstuffs with folate pathway metabolites is common to ensure sufficient intake.

## 5-formyl-5,6,7,8-tetrahydrofolate Optimer<sup>®</sup> allows sensitive and accurate target detection



Optimer<sup>®</sup> concentration curve for 5-formyl-5,6,7,8-tetrahydrofolate. All samples were tested in triplicate. Error bars show standard deviation from the mean.

### Formyltetrahydrofolate Optimer<sup>®</sup>

Quantifiable range	LLOQ	0.16 µM
	ULOQ	135 µM
Intra-assay precision	% CV	2.4 – 13.4
Recovery	%	90.9 – 107.4

Assay parameters for ELISA-like assay analysis of 5-formyl-5,6,7,8-tetrahydrofolate detection show broad dynamic range and good precision

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## Optimer® binders

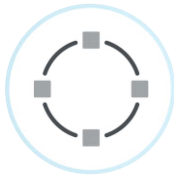
Optimer® binders are small oligonucleotide ligands (~15kDa) that bind to target molecules with comparable specificity and affinity to that of antibodies. These synthetic affinity ligands are designed to mimic the molecular recognition characteristics of monoclonal antibodies in different applications.

Intended for research use only. Not to be used for any other purpose, which includes but is not limited to, unauthorized commercial uses, *in vitro* diagnostic uses, *ex vivo* or *in vivo* therapeutic uses or any type of consumption or application to humans or animals.

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## The Optimer® advantage

Optimer® binders are oligonucleotide affinity ligands that offer several key benefits over traditional protein-based affinity reagents.



Batch consistent  
manufacture



Rapid discovery  
& development



Animal-free discovery,  
development & manufacture



Highly stable with  
long shelf life



Security of supply  
from defined  
Optimer® sequence



Small size for improved  
signal:noise & tissue  
penetration

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## Flexible functionalisation for assay compatibility

Optimer® binders can be modified with a wide variety of functional groups for simple platform integration. Please enquire for more information.

For custom modifications specific for your research, or more details about how Optimer® binders can be utilized in your research, please get in touch via email at [info@aptamergroup.com](mailto:info@aptamergroup.com).

