

# Tryptophan metabolism assay

Metabolomics at the intersection of immunity, neuronal function, and gut homeostasis

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# Tryptophan metabolism assay

Three pathways, one solution

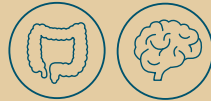
## Kynurenine

The kynurenine pathway plays a major role in inflammatory signaling. Metabolite ratios from this pathway enable insights into enzyme activities and immune activation.



## Serotonin

The serotonin pathway and its metabolites are crucial in gut-brain axis communication. The metabolite serotonin itself is involved in learning, mood regulation, and sleep.



## Indole

Indole derivatives are direct signaling molecules used by the microbiome in communication with the host, with a broad impact on inflammatory pathways.



## Covered metabolites

| Analyte                             | LLOQ* [ $\mu\text{M}$ ] in plasma   serum |                     |
|-------------------------------------|---|---------------------|
| Tryptophan                          | 0.1                                       |                     |
| 5-Hydroxyindoleacetic acid (5-HIAA) | 0.002                                     | Serotonin pathway   |
| 5-Hydroxytryptophan                 | 0.001                                     |                     |
| Serotonin                           | 0.005                                     |                     |
| Anthranilic acid                    | 0.001                                     |                     |
| 3-Hydroxyanthranilic acid           | 0.002                                     | Kynurenine pathway  |
| 3-Hydroxykynurenine                 | 0.002                                     |                     |
| Kynurenic acid                      | 0.0002                                    |                     |
| Kynurenine                          | 0.01                                      |                     |
| Picolinic acid                      | 0.002                                     |                     |
| Quinaldic acid                      | 0.001                                     |                     |
| Quinolinic acid                     | 0.1                                       |                     |
| Xanthurenic acid                    | 0.001                                     |                     |
| Nicotinamide                        | 0.001                                     | Indole pathway      |
| Nicotinic acid                      | 0.002                                     |                     |
| 3-Indolepropionic acid (IPA)        | 0.01                                      |                     |
| Neopterin                           | 0.001                                     | Related metabolites |

Quantify up to 17 metabolites and 19 metabolism indicators

Standardized, quality-controlled assay with absolute quantification, and comprehensive coverage of the tryptophan pathway in a single assay.

### Analytical details

- LC-MS-based assay
- Robust 7-point calibration
- 3 levels of quality controls

### Sample requirements

- 120  $\mu\text{L}$  plasma/serum (assay volume: 100  $\mu\text{L}$ )
- 100 mg tissue
- 200 – 500 mg feces, wet weight
- 120  $\mu\text{L}$  urine
- For other matrices, please contact us (<https://biocrates.com/contact>)

\* Lower limit of quantification

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