



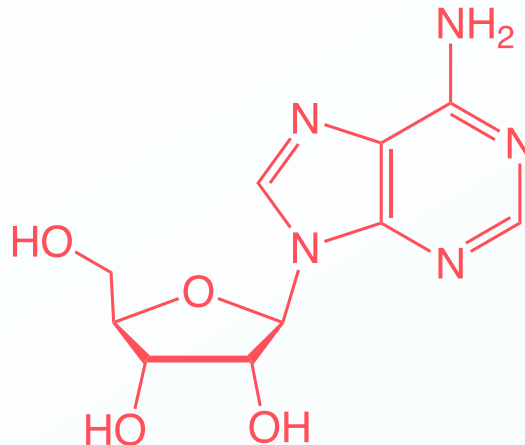
Biological Stress Discovery Panel

All organisms sense and respond to their environments. The culmination of these internal and external signals can be described as stressors, which are typically mediated by insults such as injury, toxic exposure, infection, and the general necessary perturbances caused by food consumption and metabolism. Responses to these stressors involve coordination between the circulatory, endocrine, nervous, and immune systems, as well as cellular-level responses to insults such as reactive oxygen species.

The Biological Stress Discovery Panel analyzes 114 key biological stress metabolites across seven metabolite classes, including inflammation and immunity, stress signaling, injury and circulation, oxidative stress, metabolism and glycemic stress, protein catabolism and decay, and vitamins.

Applications

- ▶ Nutrition
- ▶ Cardiovascular Disease
- ▶ Diabetes
- ▶ Inflammation
- ▶ Oncology
- ▶ Neuroscience



Metabolite List

| | | | |
|---|------------|---|-----------|
| Inflammation & Immunity | 39 | Oxidative Stress | 16 |
| Amino Acid-related Mediator | 5 | Amino Acid-related Mediators | 2 |
| 2-aminoadipate | | anserine | |
| gentisate | | carnosine | |
| kynurenine | | Cysteine/Glutathione-related | 10 |
| tryptophan | | cys-gly, oxidized | |
| xanthurenate | | cysteine | |
| Complement System | 1 | cysteine-glutathione disulfide | |
| HWESASXX* | | cysteinylglycine disulfide | |
| Lipid Mediator - Endocannabinoids | 6 | cystine | |
| 2-arachidonoylglycerol (20:4) | | glutathione, oxidized (GSSG) | |
| arachidonoyl ethanolamide | | glutathione, reduced (GSH) | |
| linoleoyl ethanolamide | | hypotaurine | |
| N-oleoylserine | | S-methylcysteine | |
| N-oleoyltaurine | | taurine | |
| oleoyl ethanolamide | | Nucleotide-related Mediators | 4 |
| Lipid Mediator - Hydroxy Fatty Acids | 2 | hypoxanthine | |
| 4-hydroxynonenal | | inosine | |
| 9-hydroxystearate | | urate | |
| Lipid Mediator - Oxylipins | 19 | xanthine | |
| (7R)-maresin 1 (7,14-dihydroxy-DHA) | | Protein Catabolism & Decay | 18 |
| 12,13-DiHOME | | BCAA catabolism | 9 |
| 12-HETE | | 2-hydroxy-3-methylvalerate | |
| 12-HHTrE | | 3-methyl-2-oxobutyrate | |
| 13-HODE + 9-HODE | | 3-methyl-2-oxovalerate | |
| 14-HDoHE/17-HDoHE | | 4-methyl-2-oxopentanoate | |
| 15-HETE | | alpha-hydroxyisocaproate | |
| 4-HDoHE | | alpha-hydroxyisovalerate | |
| 5-HEPE | | isoleucine | |
| 5-HETE | | leucine | |
| 5-KETE | | valine | |
| 9,10-DiHOME | | Nitrogen Metabolism & Polyamines | 5 |
| leukotriene B4 | | 5-methylthioadenosine (MTA) | |
| leukotriene B5 | | ornithine | |
| Prostaglandin E2 | | spermidine | |
| prostaglandin F2alpha | | spermine | |
| protectin D1 (10,17-dihydroxy-DHA) | | urea | |
| resolvin D1 (7,8,17-trihydroxy-DHA) | | Protein Turnover | 4 |
| thromboxane B2 | | 3-methylhistidine | |
| Lipid Mediator - PUFA | 6 | dimethylarginine (SDMA + ADMA) | |
| arachidonate (20:4n6) | | N6,N6,N6-trimethyllysine | |
| docosahexaenoate (DHA; 22:6n3) | | trans-4-hydroxyproline | |
| docosapentaenoate (n3 DPA; 22:5n3) | | Stress Signaling Molecules | 11 |
| docosapentaenoate (n6 DPA; 22:5n6) | | Adenosine | 2 |
| eicosapentaenoate (EPA; 20:5n3) | | adenosine | |
| linoleate (18:2n6) | | adenosine 3',5'-cyclic monophosphate (cAMP) | |
| Injury & Circulation | 12 | Corticosteroids | 3 |
| Bradykinin | 2 | corticosterone | |
| bradykinin | | cortisol | |
| bradykinin, des-arg(9) | | cortisone | |
| Fibrinogen | 5 | Histamine | 2 |
| Fibrinopeptide A | | histamine | |
| fibrinopeptide A, des-ala(1) | | histidine | |
| fibrinopeptide A, phosphono-ser(3) | | Sphingosine | 4 |
| fibrinopeptide B (1-12) | | sphinganine | |
| fibrinopeptide B (1-13) | | sphinganine 1-phosphate | |
| Heme Metabolism | 5 | sphingosine | |
| bilirubin (E,E) | | sphingosine 1-phosphate | |
| bilirubin (Z,Z) | | Vitamins | 11 |
| biliverdin | | B Vitamins | 4 |
| heme | | pyridoxal | |
| I-urobilinogen | | pyridoxate | |
| Metabolism & Glycemic Stress | 7 | riboflavin (Vitamin B2) | |
| Glucose Regulation | 6 | trigonelline (N ¹ -methylnicotinate) | |
| alpha-ketobutyrate | | Vitamin A | 2 |
| fructosyllysine | | beta-cryptoxanthin | |
| glucose | | retinol (Vitamin A) | |
| lactate | | Vitamin C | 2 |
| N6-carboxymethyllysine | | ascorbate (Vitamin C) | |
| pyruvate | | ascorbic acid 2-sulfate | |
| Ketogenesis | 1 | Vitamin E | 3 |
| 3-hydroxybutyrate (BHBA) | | alpha-tocopherol | |
| | | delta-tocopherol | |
| | | gamma-tocopherol/beta-tocopherol | |
| Total Number of Metabolites | 114 | | |

Sample Types and Required Amounts

| Sample Type | Sample Requirement |
|------------------|--------------------|
| Mammalian Serum | 200 µL |
| Mammalian Plasma | 200 µL |

Contact us to get started [metabolon.com](https://www.metabolon.com)

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