Healthy vs Infected – Proteomics

SERPINA3

LRG1 is expressed during granulocyte differentiation.

**CLEC3B = Tetranecin = secreted by neutrophils, monocytes.**

**TF = transferrins, bind iron tightly = innate immue system. Iron withholding**

APOA2 = apolipopriten A-11, second most abundant protein of the high density lipoprotein particles.

**LBP = lipopolysaccharide binding protein = innare immune system.**

ENO1 = ENO-1 is a metalloenzyme that is mainly known for its involvement in glycolysis, where it catalyzes the interconversion of 2-phosphoglycerate to phosphoenolpyruvic acid. However, ENO-1 is also known to exhibit other activities that strongly depend on its intra- or extracellular localization.[3](javascript:void(0);" \t "_self) Qiao *et al*.[4](javascript:void(0);" \t "_self) have recently characterized ENO-1 as a “moonlighting protein”; a justified characterization when one considers that ENO-1 can also display an array of DNA-binding capacity-related activities (resulting in the regulation of gene expression) as well as a critical role in plasmin-mediated pericellular proteolysis (when ENO-1 is anchored on the cellular membrane).[3](javascript:void(0);" \t "_self) In fact, the cell surface-associated ENO-1 is known to play an important role in the regulation of pericellular proteolysis through the enhancement of plasmin formation; a role that has been well studied in the context of cancer cell migration and invasion

GSN -> reduced in infection.= gelsolin = actin binding protein. Helps the body recover from disease and injury that leaks cellular actin into the blood. Additionally plays important roles in host inate immunity, activates macrophages and localizes inflammation

SERPINA5

FGA

Healthy vs Infected – Metabolomics

n6−threonylcarbamoyladenosine

3−keto−9z,11e−octadecadienoic acid

13-oxo-9Z,11E-ODE is an oxooctadecadienoic acid that consists of 9Z,11E-octadecadienoic acid bearing an additional 13-keto substituent. In addtion it has been found as a natural product found in Carthamus oxyacantha. It has a role as a metabolite and a mouse metabolite. It is functionally related to a 13-HODE. It is a conjugate acid of a 13-oxo-9Z,11E-ODE(1-)

phthalic anhydride ]

Exposure to phthalic anhydride may occur during its use as a chemical intermediate in the plastics industry. The acute (short-term) effects from exposure to phthalic anhydride in humans consists of irritation to the eyes, respiratory tract, and skin, but no permanent injury is observed. Chronic (long-term) effects observed in workers exposed to phthalic anhydride included conjunctivitis, rhinitis, rhinoconjunctivitis, bronchitis, and irritation of the skin and mucous membranes of the respiratory tract. Animal studies indicate that chronic exposure to phthalic anhydride vapor causes congestion, irritation, and injury to lung cells. No studies are available on the reproductive, developmental, or carcinogenic effects of phthalic anhydride in humans. EPA has not classified phthalic anhydride for carcinogenicity.

9−oxootre

9-OxoOTrE is produced by the oxidation of 9-HpOTrE.{14394} 9-OxoOTrE exhibits antimicrobial activity against plant pathogenic microorganisms including bacteria and fungi.

tris(2−butoxyethyl) phosphate

Tris(2-butoxyethyl) phosphate is a trialkyl phosphate in which the alkyl group specified is 2-butoxyethyl. It has a role as an environmental contaminant and a flame retardant.

putative lys−c7

bis(2−ethylhexyl) phthalate

Bis(2-ethylhexyl) phthalate (di-2-ethylhexyl phthalate, diethylhexyl phthalate, diisooctyl phthalate, DEHP; incorrectly — dioctyl phthalate, DIOP) is an organic compound with the formula C6H4(CO2C8H17)2. DEHP is the most common member of the class of phthalates, which are used as plasticizers.

taurocholic acid

a bile acid taurine conjugate of cholic acid that usually occurs as the sodium salt of bile in mammals. It has a role as a human metabolite. It is an amino sulfonic acid and a bile acid taurine conjugate. It is functionally related to a cholic acid.

cyclo(l−phe−d−pro)

Cyclo(L-Phe-D-Pro) is a small peptide with potential bioactive properties. It can exhibit various biological activities and can interact with biological targets such as enzymes, receptors, or transporters

decynediol, tetramethyl, di(2−hydroxyethyl) ether

Faecium vs Faecalis – Proteomics

IGKV2-30 – increased in faecalis

V region of the variable domain of immunoglobulin light chains that participates in the antigen recognition

PCYOX1 – increased in faecium

Prenylcysteine oxidase that cleaves the thioether bond of prenyl-L-cysteines, such as farnesylcysteine and geranylgeranylcysteine

SERPINC1 – increased in faecium

Serine protease inhibitor

APOC3 – increased in faecium

**Apolipoprotein C-III** also known as **apo-CIII**, and **apolipoprotein C3**, is a [protein](https://en.wikipedia.org/wiki/Protein) that in humans is encoded by the *APOC3* [gene](https://en.wikipedia.org/wiki/Gene). Apo-CIII is secreted by the liver as well as the small intestine, and is found on triglyceride-rich lipoproteins such as [chylomicrons](https://en.wikipedia.org/wiki/Chylomicron), [very low density lipoprotein](https://en.wikipedia.org/wiki/Very_low_density_lipoprotein) (VLDL), and [remnant cholesterol](https://en.wikipedia.org/wiki/Remnant_cholesterol).[[3]](https://en.wikipedia.org/wiki/Apolipoprotein_C-III#cite_note-pmid28825717-3)

PROC – increased in faecium

This gene encodes a vitamin K-dependent plasma glycoprotein. The encoded protein is cleaved to its activated form by the thrombin-thrombomodulin complex. This activated form contains a serine protease domain and functions in degradation of the activated forms of coagulation factors V and VIII. Mutations in this gene have been associated with thrombophilia due to protein C deficiency, neonatal purpura fulminans, and recurrent venous thrombosis.[provided by RefSeq, Dec 2009]

IGHV6-1 – increased in faecalis

V region of the variable domain of immunoglobulin heavy chains that participates in the antigen recognition

RBP4 – increased in faecium

Retinol binding protein 4, also known as RBP4, is a transporter protein for retinol.

IGHV3-7 – increased in faecalis

V region of the variable domain of immunoglobulin heavy chains that participates in the antigen recognition

IGLV1-47 – increased in faecalis

AXGP1 – increased in faecium

This gene expresses a soluble [protein](https://en.wikipedia.org/wiki/Protein) that stimulates [lipolysis](https://en.wikipedia.org/wiki/Lipolysis), induces a reduction in [body fat](https://en.wikipedia.org/wiki/Body_fat) in [mice](https://en.wikipedia.org/wiki/Mouse), is associated with the [cachexia](https://en.wikipedia.org/wiki/Cachexia) related to [cancer](https://en.wikipedia.org/wiki/Cancer), and is known to be expressed in secretory cells of [lung](https://en.wikipedia.org/wiki/Lung) [epithelium](https://en.wikipedia.org/wiki/Epithelium).[[7]](https://en.wikipedia.org/wiki/AZGP1#cite_note-smoking-7) In 2009, it was found that [smoking](https://en.wikipedia.org/wiki/Smoking) increases expression of this gene, which is why [smoking cessation](https://en.wikipedia.org/wiki/Smoking_cessation) leads to weight gain.

Faecium vs Faecalis – Metabolomics

Retinol – vitamin A1. Fat soluble vitamin. Involved in immune function. – decreased in faecalis.

C24h49n1o7p1 – increased in faecium.

Cortisol- Cortisol is a steroid hormone that is produced by your 2 adrenal glands, which sit on top of each kidney. Increased in faecalis

C25h51n107p1- decreased in faecalis

Mycophenolic acid- **Mycophenolic acid** is an [immunosuppressant medication](https://en.wikipedia.org/wiki/Immunosuppression) used to prevent [rejection](https://en.wikipedia.org/wiki/Transplant_rejection) following [organ transplantation](https://en.wikipedia.org/wiki/Organ_transplant) and to treat [autoimmune conditions](https://en.wikipedia.org/wiki/Autoimmune_disease) such as [Crohn's disease](https://en.wikipedia.org/wiki/Crohn%27s_disease) and [lupus](https://en.wikipedia.org/wiki/Lupus). **Increased in faecium**

Lyso pc – ns different

C21h43n107p1 – increased in faecium

Desferrioxamine H- **Deferoxamine** (**DFOA**), also known as **desferrioxamine** and sold under the brand name **Desferal**, is a medication that binds [iron](https://en.wikipedia.org/wiki/Iron) and [aluminium](https://en.wikipedia.org/wiki/Aluminium" \o "Aluminium) – decreased in faecalis.

Lyso-paf c-18 – decreased in faecium

1-arachidoyl-3-hydroxy-sn-glyercol-3-phosphocholine – increased in faecalis.