Genomic and biochemical potential in transporter biofilter technology

Placeholder title[a,*], Dylan Lawless[a,*]

[a]*Global Health Institute, School of Life Sciences, École Polytechnique Fédérale de Lausanne, Lausanne, 1015, Switzerland*

Abstract

Abstract

Abbreviations

1. Introduction

2. Screening complexity

Whitelists, blacklists, and subject-specific definition.

3. Genomic screen

Tolerated genomic sequences. A benign microbe may acquire pathogenic sequences, plasmids.

4. Peptide screen

What is the number of unique proteins and peptide encoded by host genome. What is the number of commensal organisms.

[*] Addresses for correspondence
Email address: Dylan(dot)Lawless(at)epfl(dot)ch (Dylan Lawless)

5. Immonogenic tolerance filter

The distance between foreign peptide and host petides may indicate MHC presentation. MHC presented unknown peptides may ilicite a flag - do not want to impede the normal host immune response. If flagged peptide producer can be identified it can be filtered as pathogen. If not then send for further screen.

If peptides are too far from host cell or component then foreign material may be flagged.

How do we define commensal organisms. A subject specific immune profile should be recorded - HLA and somatic recombination matrix. We can predict the expected binding potential based on germline and somatic recombination of the HLA.

6. Decision tracing patter

A fixed decission tree allows for learned patterns.

7. Parasitic commensals

Some organisms may be more paracitic than commensal, however, these apparent pathogens may infact provide beneficial compouds, hormones, or keep more damaging pathogens in check - commensal antibiotic. What criteria would save these organisms when all others would flag them for filtering?

Obligate parasites may need to be transferred to a synthetic host before assessing for extermination. The rules for sentience must be applied.

8. Conclusion

Authorship Contributions

Filler content.

Conflict of Interest

The authors declare no conflict of interest.

References

9. Supplemental