Reading the repertoire.

Over the last 10 years advanced tools to sequence B and T cell repertoires were developed. However, we are still lacking methods to read this repertoires in order to understand their relation to the host history and to the development of the immune response.

We present here a few examples of advanced methods to relate the repertoire to the development stages of B and T cells, as well as methods to relate the repetoire to the disease history of the host. These results shed new light on the mechanisms driving selection and development of the repertoire.

and for questions:

What is the optimal representation of B and T cell sequences to infer their relations with antigens?

How much of the repertoire is random and how much is actually related to some response.

What are the main check points in repertoire development.

Reading:

Evidence for shaping of light chain repertoire by structural selection. A Toledano, Y Elhanati, JIC Benichou, AM Walczak, T Mora, Y Louzoun. Frontiers in immunology

Converging evolution leads to near maximal junction diversity through parallel mechanisms in B and T cell receptors

JIC Benichou, JWJ van Heijst, J Glanville, Y Louzoun. Physical biology 14 (4), 045003