Analyzing Antibody Repertoires for Disease Specific Epitope Identification Rafael Smith, Joel Bozekowski, Michael Paul, Patrick Daugherty Daugherty Group, University of California, Santa Barbara

Hypothesis

Antibody Repertoire Analysis

You have a unique antibody repertoire that updates as immune responses occur

Allergens

Immune factors



Pathogens



Environmental

By comparing patient's serums, antibodies can be isolated as disease specific Diseased



Potential Biomarkers:







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Using bioinformatics to determine disease specific motifs

Use pattern recognition programing to cluster the epitopes into motifs

> QRHK**EQP**LPLVM ASPQEPFPSTFC FASLKJPEQLTP

Significant Patterns

Assess the data by organizing patients into groups and comparing groups for unique sequences

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Search an antibody repertoire database for disease specific motifs Enrichment = Observed/Expected Motif 1

