Antigen Identification using Randomized Peptide Libraries

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http://condor-csep.cnsi.ucsb.edu/
Antibodies Are Like Molecular Post-It Notes
Immune System

Autoimmune Diseases

Bacteria trying to avoid the immune system

Intruder! DESTROY!

Wh-what?!

But I'm one of you!!

Don't listen to her lies.
Generating a Peptide Library

Antigen

Epitope

Antibody

Random Peptide Library

Single *E. coli* cell

Epitope-mimicking peptide

Peptide Sequence

Plasmid DNA
Using Flow Cytometry in Sorting Cells

Particle given charge if within selected range of fluorescence
Increasing Fluorescent Cell Population

1st Sort

2nd Sort

3rd Sort

Intensifying Fluorescence
The Antibody Binds to HER2 Receptor

KDPPFCVA
lys-asp-pro-pro-phe-cys-val-ala

DEEGACQPCP
asp-glu-glu-gly-ala-cys-gln-pro-cys-pro

EADQCV
glu-al-asp-gln-cys-val

Antibodies can be Effectively Used in Cancer Therapies
Summary

- Connection antibody/antigen to immune system
- Use of flow cytometry with the peptide libraries
- Discover disease-causing agents
Acknowledgements