## **Proteomics Course**

# LECTURE-37 Surface Plasmon Resonance: Biacore SPR and data analysis



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## **Today's lecture**

- Discussion on Surface Plasmon Resonance
- BIAcore technology
- Data analysis

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Surface Plasmon Resonance
Biacore SPR

## **Discussion**

• Discussion with Mr. Lalith Kishore, GE Healthcare on BIAcore technology

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## **Conclusions**

#### **Summary**

- Biomolecular interactions and Surface Plasmon Resonance
  - BIAcore technology
- Challenges associated with SPR technology

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#### **REFERENCES**

- Cooper MA. 2002. Nature Reviews Drug Discovery 1, 515-528
- Hamdan MH. 2006. Cancer Biomarkers: Analytical Techniques for Discovery. DOI: 10.1002/9780470113127.ch2
- Cooper MA. 2003. Current Opinion in Pharmacology. Volume 3, Issue 5, October 2003, Pages 557–562
- Homola J. 2003. Analytical and Bioanalytical Chemistry. Volume 377, Issue 3, pp 528-539
- Ramachandran, N., Larson, D. N., Stark, P. R., Hainsworth, E., LaBaer, J., Emerging tools for real-time label-free detection of interactions on functional protein microarrays. FEBS J. 2005, 272, 5412–5425.
- Navratilova et al. 2007 Thermodynamic benchmark study using Biacore technology. Analytical Biochemistry 364 (2007) 67–77

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#### REFERENCES

- Lausted et al. 2008. Quantitative Serum Proteomics from Surface Plasmon Resonance Imaging. M800121-MCP200
- Yu et al. 2006. Label-free detection methods for protein microarrays. Proteomics, 6, 5493–5503.
- Campbell and Kim. 2007. SPR microscopy and its applications to high-throughput analyses of biomolecular binding events and their kinetics. Biomaterials 28, 2380–2392.
- Wassaf et al. 2006. High-throughput affinity ranking of antibodies using surface Plasmon resonance microarrays. Analytical Biochemistry 351 (2006) 241–253
- Rich and Myszka 2007. Higher-throughput, label-free, real-time molecular interaction analysis. Analytical Biochemistry 361 (2007) 1–6
- Ray et al. 2010. Label-free detection techniques for protein microarrays: Prospects, merits and challenges. Proteomics 2010, 10, 731–748

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