Biocompare
The Buyer's Guide for Life Scientists

Editorial Preview: November 2014

Nov. 4: Viral expression systems (due 10/28/14)
When they need to express exogenous genes in eukaryotic cells, researchers can use transfection to deliver nucleic acids, or viruses. This article will discuss the rationale for using viral expression systems vs traditional transfection, applications of viral expression systems, different kinds of viral systems, and the pros and cons of the approach (such as biosafety concerns, need for helper viruses, more complicated cloning, etc.)

Nov. 6: Working with human clinical samples (due 10/30/14)
Tissue biopsies for sectioning and immunohistochemistry analysis can be archived one of two ways: They can be formalin-fixed and paraffin-embedded (FFPE), or frozen. This article compares the pros and cons of the two options, applications in which each approach makes sense, and the tools required to perform them

Nov. 11: Next-gen sequencing update (due 11/4/14)
Biocompare's semi-annual look at what's new in the fast-paced world of next-generation DNA sequencing (updating our previous article: http://www.biocompare.com/Editorial-Articles/155411-Next-Gen-Sequencing-2014-Update/). The article will focus on new instruments, chemistries, applications and trends in the NGS space.

Nov. 13: Long non-coding RNA analysis (due 11/6/14)
Biocompare last covered tools for lncRNA analysis in 2013, focusing on protein-RNA interactions. (http://www.biocompare.com/Editorial-Articles/150507-Probe-Noncoding-RNA-Biology-with-Protein-lncRNA-Interaction-Tools/) This article will examine bioinformatics tools for studying lncRNA – from lncRNA databases to sequence-analysis algorithms to tools to predict function.

Nov. 18: Neuroscience imaging (due 11/11/14)
In 2013 researchers in Karl Deisseroth's lab at Stanford University unveiled a new method offering brain imaging with unprecedented clarity. It was called CLARITY (http://www.leica-microsystems.com/science-lab/map-the-brain-with-clarity/), and it has proven to be a sensation in the neuroscience community. This article will examine the tools required to perform CLARITY, as well as what the technique offers, technical variations, and pros and cons.

Nov. 20: Neuronal cell culture (due 11/13/14)

Neurons are among the most challenging cells to culture, and primary cells are even more difficult. This article will consider tools and reagents for preparing and culturing primary neurons.

Nov. 25: Ion channel screening (due 11/18/14)
Ion channel drug testing requires electrophysiological assays, most commonly patch clamping. It also requires cells expressing the ion channel of interest. This article examines premade cell lines, membrane preparations and services that provide these reagents. Specifically, the article will examine available options, what to look for in selecting a cell (eg, does genetic background matter? Expression level?, customization options, cost, and so on).

Nov. 27: Phosphoprotein analysis (due 11/20/14)
When it comes to the phosphoproteome, researchers can either enrich phosphorylated proteins or peptides. This article will discuss the rationale for the two approaches, tools required for each workflow, and the applications and pros and cons of isolating phosphoproteins vs. phosphopeptides.