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performing computer analysis of the results, the investigators could correlate the existence of both fluors in the same space—that is, attached to the same molecule. To measure a fragmentation reaction, they just looked for loss of the correlated signal. It is easy to see then that the reverse reaction (ligation) could also be recorded as the increase in correlated signal.

In an accompanying paper (2), the group went on to show that the FCS technique could be done fast and in small volumes. Amazingly, they were able to create conditions in which a sample volume as small as 1 fl (the size of the bacterium *Escherichia coli*) could be measured. The entire assay took only 1 s to complete.

Obviously, many uses of FCS in assembly and fragmentation reactions are possible. The only limitations seem to be attachment of the fluor groups and ensuring that they do not interfere with the reaction being measured. With current technology, it should be possible to measure 10^5 samples in a single day. Nonenzymatic assays, such as DNA-DNA or DNA-RNA hybridization would also lend themselves to FCS methodology, potentially paving the way for high-volume genotyping or sequencing applications.

–Robert Sikorski and Richard Peters

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Virtual Meetings

NET TIPS

Every successful scientist today relies on the timely exchange of information. Scientific meetings in particular have traditionally offered a forum to swap ideas, contacts, or stories with one's peers. With the explosion of the Internet, a number of online collaboration tools have been developed that could make many physical meetings all but obsolete in the near future. This brief review looks at one such Web-based collaboration product called NetMeeting from Microsoft. We focus on NetMeeting for two reasons: first, it is free, and second, it has consistently been rated as one of the best collaboration tools available. For instance, NetMeeting was one of the finalists in a review of Web communication applications performed by *PC Computing* magazine (January 1998 issue). Perhaps the major drawback about NetMeeting, however, is that it only runs on PCs that operate with Windows95. So far, there is no Macintosh version.

Application sharing is clearly one of the product's best features. You can use the NetMeeting World Wide Web interface to share the use of an entire application on your PC over the Internet with others, even if they do not have the application installed on their machine. There are two operating modes in NetMeeting: sharing and collaboration. In the sharing mode, you control the application while others watch over the Internet. In the collaboration mode, others can take control of the application over the Internet (or your LAN). You can also draw on a shared whiteboard, send text messages (chat), and transfer files among the group. The shared clipboard function lets you copy information (text or graphics) from a local document and paste its contents as part of a group collaboration. Finally, the latest version of NetMeeting has added a videoconferencing capability, which allows users to communicate with someone running another standards-based videoconferencing product such as Intel's Internet VideoPhone. If you do not have a camera to display images, you can still use the software as an Internet phone.

NetMeeting participants actually "meet" at a remote server somewhere on the Internet. By default, the meeting is automatically hosted on one of Microsoft's remote servers, which they call Internet Locator Servers. You can, however, choose another meeting place as well. A list of third-party servers capable of supporting such meetings is available at http://ils.microsoft.com/.

Although the company claims that the product can be used with modem connections as slow as 14.4 kb/s, it is generally advised that users dial-up with a connection at least as fast as an ISDN line, especially if you will be exchanging audio data. The majority of scientists have fast Internet access provided by their institutions, so this should not be a big issue. At the moment, the product is only available through Microsoft's Web site, where it can be downloaded free of charge (www.microsoft.com/netmeeting/); NetMeeting is not available on floppy disks or CDs. Microsoft has stated that NetMeeting will become an integrated component in the future operating system release, Windows98, along with Internet Explorer 4.0.

Overall, NetMeeting is an early version of a very neatly designed collaboration tool that is worth looking into. Given its early-stage release, it may not be for the faint of heart just yet, but there is little doubt that these types of tools will be applied to science soon.

For more info on NetMeeting check out www.cnet.com/Content/Reviews/JustIn/Items/0,118,33,00.html or www.medsitenavigator.com/tips.

–Richard Peters and Robert Sikorski

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Yeast Sites on the Net

SITE FINDER

A wealth of information useful to the yeast molecular biologist can now be found online. The yeast community has clearly extended their open and sharing culture to the Internet. Here are a few of the many sites on the Web:

Saccharomyces Genome Database
http://genome-www.stanford.edu/Saccharomyces/
This site at Stanford is a major access point for genomic information about this particular yeast. Resources here include the entire yeast sequence, detailed chromosome maps, sequence analysis software, and links to major yeast Web sites.

XREF Database
www.ncbi.nlm.nih.gov/XREFdb/
This online database is designed to find matches between human genes and those found in yeast. You can send your query sequence directly or sign up for an online account that will keep track of your favorite gene as the database is updated.

The Definitive Yeast Transformation Homepage
www.umanitoba.ca/faculties/medicine/human_genetics/gietz/Trafo.html
The title says it all. In fact, this site does a great job collecting protocols and tips for rapid introduction of DNA into yeast.

Gottschling Lab Home Page
www.fhcrc.org/~gottschling/homepage.html
This site has a nice collection of core yeast protocols with links to other yeast lab sites. By visiting a few of these lab home pages, you can find many useful technical tips.

–Robert Sikorski and Richard Peters

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