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# Institutions investigate 'reactome' data

The Spanish research council (CSIC) is to coordinate an investigation at the laboratories involved in creating the first 'reactome array'. The research tool can be used for studying the metabolism of cells or communities of different cells such as marine bacteria.

Laboratories in Spain, Germany, the United Kingdom and Italy published their invention in the 9 October issue of *Science* (A. Beloqui *et al.* *Science* 326, 252–257; 2009). Many biologists were intrigued by the possibility of getting a snapshot of total enzyme activity, as well as identifying some of the individual active enzymes.

But on 17 December, Bruce Alberts, the journal's editor-in-chief, published an 'editorial expression of concern' (B. Alberts *Science* doi:10.1126/science.1186078; 2009) about the paper and called for an "evaluation of the original data and records by officials at the authors' institutions".

Organic chemists had raised questions about the methods used to synthesize the thousands of chemicals that serve as enzyme probes, tag them with a fluorescent dye and attach them to the arrays. The researchers complained to the journal that the schematic in the paper depicting the general methodology contained errors. They also found errors in the hundreds of pages of supplementary information about the chemical syntheses, which was not available when the paper was first published.

Manuel Ferrer, a chemist at the CSIC in Madrid and one of the paper's lead authors, admits an error in the schematic and a few "small errors" in the supplementary information, all now corrected, he says.

Ferrer says he has not received specific complaints about the chemical reactions in the paper, only general concerns that many of them must be 'impossible'. He is confident that the chemicals on the arrays

were synthesized correctly.

Frank Oliver Glöckner, a microbial genomicist at the Max Planck Institute for Marine Microbiology in Bremen, Germany, has used the array to study the metabolism of the marine bacterium *Rhodospirellula baltica*. He says that the array picked up extensive enzyme activity, implicating 300 genes of previously unknown function. But his team has not yet verified the results.

The CSIC's investigation, run by its ethics committee, has established a group of Spanish scientists to look into the matter. The group's chairman, CSIC cell biologist Pere Puigdomènech, says that the investigation will be complex because the labs involved are in several countries and the amount of data is enormous. "We don't know what happened," he says, "but we expect that the committee will be able to deliver a solid report within a couple of months." ■

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