



## **Top European scientists demonstrate CYTOO's technology increases sensitivity and speed in cell analysis**

### **Nature Methods article describes results from Institut Curie study highlighting advantages of cellular normalization using adhesive micropatterning**

**Grenoble, France, June 15, 2010** – CYTOO SA, a developer and marketer of innovative enabling technologies and products for high content cell analysis (HCA), today announced the first results from the Institut Curie confirming a major advance in cell analysis made possible by adhesive micropatterns, a technology for which Cytoo holds an exclusive worldwide license.

The Institut Curie team demonstrated that a rigorous quantification of the cell-wide internal organization could be obtained using adhesive micropatterns. Adhesive micropatterns control internal cell organization. In addition, they could decipher a protein re-distribution upon a drug treatment that was previously undetectable in conventional cell culture conditions. The scientific team, led by Dr. Bruno Goud, research director of the subcellular structure and cellular dynamics laboratory, was also able to obtain significant results by analyzing only 12 to 20 cells, compared to the hundreds or thousands usually needed in traditional cell culture conditions.

"With this study, we have now unequivocally demonstrated that controlling cell adhesion is going to be critical in all fields involving Quantitative Cell analysis," commented Michel Bornens, CSO at Cytoo and co-author of the article entitled: "Probabilistic density maps to study global endomembrane organization" published in Nature Methods (online publication, May 31, 2010).

The results of the study, also named "Probabilistic density maps to study global endomembrane organization", indicates that the use of adhesive micropatterns will benefit research by offering increased insight, sensitivity and relevance in deciphering protein functions and cell mechanics.

Cytoo believes that for those involved in drug discovery, such results would translate into significantly more hits and more meaningful data in cell-based screening, while requiring analysis of significantly fewer cells per condition. It would also enable biologists to detect effects at much lower doses.

"We are extremely encouraged by the Institut Curie results using adhesive micropatterns," says Alexandra Fuchs, co-CEO at Cytoo. "We want to bring to the attention of the market that leading centers in the world are now using our products and that this technology is enabling them to detect and analyze cell functions that were previously impossible to detect and analyze. We believe that our technology will have a huge impact in the drug discovery world by increasing assay sensitivity, generating statistically relevant data, and accelerating analysis."

More than one hundred researchers in private laboratories and leading research centers around the world, such as the National Institutes of Health (NIH), the European Molecular Biology Laboratory (EMBL), Harvard University, and Dana Farber Cancer

Center, have adopted Cytoo's HCA products. Cytoo expects more results of this kind to be published.

Cytoo addresses critical needs in pharma and biotech drug discovery as cell based assays and high content screening (HCS) are among the most dynamic fields in life science research markets (Sources: "Worldwide Cell Based Screening & Analysis Market for Bio-Pharma Drug Discovery", Fuji Keizai 2007 and "High Content Analysis: Technologies, Applications, Market Analysis", Insight Pharma Reports 2007). However, quantitative cell analysis for drug discovery has been hampered by the huge variability in cell shape and behavior when using common cell culture ware such as standard well plates and petri dishes. Even with huge cohorts of cells and sophisticated image algorithms, expected effects are too often buried in the noise, thus hampering sensitivity, throughput and reliability of the screens, according to Fuchs.

Results published in the Nature Methods article also highlight the advantages of cellular normalization using micropatterning and show differences in the results in the same statistical tests that were performed on non-patterned cells.

The Institut Curie team found that for strong phenotypes (an observable characteristic or trait of an organism), such as Golgi-dispersion after nocodazole-treatment, significant differences were detected, although eight times more cells were needed. On the other hand, subtle differences, such as those seen in the treatment with cytochalasin D, were not detectable in non-patterned cells. They concluded that micropatterning in combination with computational analysis provides a powerful tool to detect subtle changes in steady-state endomembranous organization.

Cytoo presented results of the study in an "Advances in Assay Technology" poster session at the recent Society for Biomolecular Sciences Conference in Arizona (April 11-15, 2010), showing that effects of blebbistatin (a model drug) could be detected at a concentration rate 500 times lower than had previously been used while analyzing ten times fewer cells. The study was conducted using a straightforward easy analysis algorithm on Cytoo's L adhesive micropatterns.

### **About CYTOO SA**

CYTOO SA develops, manufactures and markets innovative enabling technologies and products destined for high content cell analysis, cell based assays and cell screening applications. Its products control internal cell organization, making analysis more reliable for cell biology researchers and organizations (pharma, biotech, CRO and academic core facilities) involved in High Content Screening for drug discovery and high content cell analysis applications.

CYTOO holds an exclusive worldwide license from the Institut Curie and the CNRS (The French national scientific research center) for the adhesive micropattern patent portfolio, as well as license agreements with Harvard University (USA) and CEA, the largest government-funded technological research organization in France. The Company's first products, CYTOOchips™, are currently being used by more than 100 private and public laboratories around the world.

CYTOO is headquartered in Grenoble, France. Its US subsidiary, CYTOO Inc., is located in Framingham, MA.