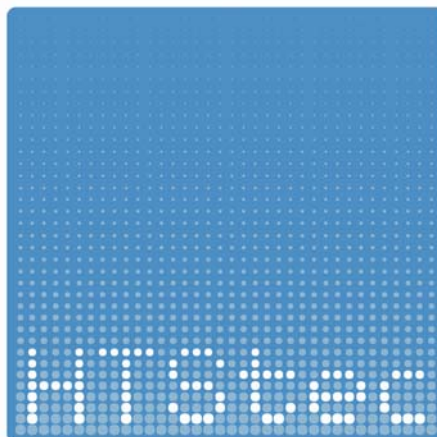


High Content Screening Trends 2005



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Executive Summary (1)

- This market report summarizes the results of a comprehensive global Pharma/Biotech and University/Research Institute web-based survey on high content screening (HCS) trends carried out in February 2005.
- The main survey looked at the extent to which HCS instruments have been deployed; interest to acquire new HCS systems; which research groups are planning to use HCS; where and for which applications HCS is currently being applied in drug discovery; instrumentation preferences for HCS; live-cell imaging requirements; HCS informatics; future trends, limitations and unmet needs in HCS. In addition, a survey supplement documents user perceptions of HCS instrument manufacturers and HCS purchasing preferences/decision factors.
- The main survey collected 75 responses (66 complete and 9 partially filled out) from 42 different Pharma/Biotech/CRO companies and 20 University/Research Institutes. The survey supplement collected 47 responses from 32 different Pharma/Biotech/CRO companies and 10 University/Research Institutes.
- Responses from Pharma/Biotech/CRO were split geographically 57% North America and 43% Europe. Responses from University/Research Institutes were split geographically 95% North America and 5% Europe.
- Survey respondents were either existing users of HCS systems or persons interested in applying HCS/purchasing HCS systems, and were drawn from 23 Large Pharma, 29 Small Pharma/Biotechs, 2 CROs and 20 University/Research Institute Labs. The job role/position of the majority of survey respondents was either Senior Scientist, Principal Investigator or Director.
- Survey respondents represented 30 assay development & primary screening (HTS) labs, 6 therapeutic area labs, 5 secondary screening labs, 3 hits-to-leads (lead optimization) labs, 4 compound profiling labs, 2 leads-to-candidate labs, 4 other Pharma & Biotech lab functions and 21 University or Research labs.
- Survey results were expressed as an average of all survey respondents. In addition, the data was fully reanalyzed after sub-division into the following survey groups: 1) Large Pharma; 2) Small Pharma/Biotech; 3) University/Research Institutes; 4) HCS Users; and 5) HCS Non-Users.
- 51 HCS user labs (40 Pharma/Biotech/CRO and 11 University/Research Institutes) responded to the survey and a total of 72 HCS instrument purchases (up to the end of 2004) were identified (53 units in Pharma/Biotech/CRO and 19 units in University/Research Institutes). Cellomics ArrayScan® HCS reader was the most common instrument purchased.
- 40 labs, many new to HCS (representing 31 Pharma/Biotech/CRO and 9 University/Research Institutes) indicated they had budgeted or had plans to acquire an HCS instrument over the coming 3 years (2005 to 2007). Interest in the different HCS system brands was documented.
- A model predicting the growth of instrument sales to the Pharma Market was developed. The model predicts sales of around 50 HCS systems/year in 2005 and 2006.
- The breakdown of the HCS users operating budgets (excluding Capex purchases) was analyzed with bulk reagents (fluorescent probes and antibodies) representing the largest single item purchased.
- On average labs involved in HCS plan 6.1 different HCS assays in 2005, with greatest interest from Oncology and Neurobiology research groups.

Executive Summary (2)

- In drug discovery interest in applying HCS is currently highest in therapeutic area groups, followed in descending order by secondary screening, hits-to-leads, compound profiling, primary screening and finally leads-to-candidate groups.
- Respondent's rated signalling pathway analysis as the most relevant application for HCS today.
- Respondent's specific feedback on the applications they are using HCS for today and plans for the future are documented.
- The microplate most preferred for HCS by all respondents has 96 wells, is plastic and is non-coated.
- The mean throughput required for HCS by respondents was 200 x 96-well plates/day.
- The majority of respondents intend to use/buy/license off-the-shelf assay kits.
- Most respondents would be interested in collaborating with vendors on HCS assay development, if their concerns over the costs were adequately addressed.
- 41% of respondents currently have licenses to fluorescent proteins, probes or alternative technologies, the majority of these licenses are for GFP.
- 88% of respondents indicated that a live cell imaging capability was important in their HCS purchasing decision.
- The median time respondents wish to keep cells live during imaging is 2-8 hours.
- As a percentage of all the assay types performed by respondents 71% were cell-based and of these 44% were live-cell assays.
- The majority of respondents want to store all types of HCS data (raw images, processed images and numerical data derived from images). Respondents expect numerical data to be available simultaneous with imaging.
- The majority of respondents use Microsoft Excel/ExcelFit for some of their analysis of HCS data. Other 3rd party tools (particularly SpotFire DecisionSite, Graphpad Prism and Activity Base) were used to a lesser extent by respondents.
- Respondent's feedback on the need for an open source software that handles HCS images and interfaces with other software are documented.
- Respondents expect the greatest changes in HCS over the next 2-3 years will be in the importance of novel reagents and probes and pathway analysis.
- Assay development and costs are seen as the limitations which are most restrictive when using HCS.
- Respondent's feedback on the unmet needs that exist in HCS today are documented.
- The survey supplement was focused on user perceptions of HCS instrument manufacturers and HCS purchasing preferences and was completed by 47 respondents. Among the issues addressed were: respondent opinion on the HCS instrument manufacturer they consider the leader in the HCS field; how many different systems they evaluated before making purchasing decisions: the most important factors in selecting an HCS instrument; reasons not for choosing a specific manufacturer/instrument; familiarity with HCS instruments and demonstrations received; interest in purchasing a low cost/low resolution imaging system; which HCS instrument manufacturer they associate with various product attributes; interest in outsourced HCS; on-line resources used; journals/trade publications read; and tradeshow they consider important for learning about cell-based assays.
- Some interesting differences between the survey groups were observed, particularly between the Large Pharma and the University/Research Institute Groups.

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- HTStec's reports owe their origins to the need by developers and vendors of new enabling technologies in drug discovery to get up-to-date relevant market metrics on which to base informed business decisions.
- Typically focused on a specific market niche or segment, in many cases overlooked or frequently misunderstood by broader market studies.
- Investigations are only initiated in response to a sponsors specific requests.
- HTStec's extensive experience of the market, both as a Pharma End-User and working for a major Life Science Tool Provider ensures the industry relevance of the market research collected.
- Based entirely on web-based feedback from potential customers drawn mainly from Pharma and Biotechs.
- Produced extremely rapidly and typically published within 3 weeks of starting the collection phase.
- Reports are short, concise and focused on giving readers the basic data, analyzed in several different ways.
- Limited to reporting the main findings alone, without exhaustive discussion on the relevance of the results.
- Full details on the derivation of market estimates are given so readers can apply their own factors and easily make alternative estimates.
- Owing to the sensitivity of some of the data collected, all reference to the origin of participating companies is removed, data is pooled to get an industry average and **the anonymity of all respondents fully preserved and guaranteed.**
- Critically HTStec's Trends reports have generated much interest and acclaim amongst survey respondents, to whom they are made available free of charge, so they can benchmark their internal processes.
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