

Mail Stop 6010

June 22, 2006

By U.S. Mail and Facsimile to (858) 202-4545

Mr. Christian O. Henry
Vice President and Chief Financial Officer
Illumina, Inc.
9885 Towne Centre Drive
San Diego, CA 92121

**RE: Illumina, Inc.
Form 10-K for the year ended January 1, 2006
Form 10-Q for the quarter ended April 2, 2006
Form 8-K filed April 18, 2006
File No. 0-30361**

Dear Mr. Henry:

We have reviewed your filing and have the following comments. We have limited our review of your filing to those issues we have addressed in our comments. Where indicated, we think you should revise your future documents in response to these comments. If you disagree, we will consider your explanation as to why our comment is inapplicable or a revision is unnecessary. Please be as detailed as necessary in your explanation. In some of our comments, we may ask you to provide us with information so we may better understand your disclosure. After reviewing this information, we may raise additional comments.

Please understand that the purpose of our review process is to assist you in your compliance with the applicable disclosure requirements and to enhance the overall disclosure in your filing. We look forward to working with you in these respects. We welcome any questions you may have about our comments or any other aspect of our review. Feel free to call us at the telephone numbers listed at the end of this letter.

Form 10-K for the year ended January 1, 2006

Controls and Procedures

1. We note your disclosure that management has concluded that your disclosure controls and procedures were effective "to ensure that information required to be disclosed by us in reports that we file under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the Securities and Exchange Commission rules and forms." The language that is currently included after the word "effective" in your disclosure appears to be superfluous, since the meaning of "disclosure controls and procedures" is established by Rule 13a-15(e) of the Exchange Act. However, if you do not wish to eliminate this language, please revise future filings so that the language that appears after the word "effective" is substantially similar in all material respects to the language that appears in the entire two-sentence definition of "disclosure controls and procedures" set forth in Rule 13a-15(e).

2. Additionally we note your disclosures that "Our management does not expect that our disclosure controls or our internal controls will prevent all error and all fraud...." Please revise future filings to state clearly, if true, that your disclosure controls and procedures are designed to provide reasonable assurance of achieving their objectives and that your principal executive officer and principal financial officer concluded that your disclosure controls and procedures are effective at that reasonable assurance level. In the alternative, please remove the reference to the level of assurance of your disclosure controls and procedures. Please refer to Section II.F.4 of Management's Reports on Internal Control Over Financial Reporting and Certification of Disclosure in Exchange Act Periodic Reports, SEC Release No. 33-8238, available on our website at [<http://www.sec.gov/rules/final/33-8238.htm>](http://www.sec.gov/rules/final/33-8238.htm).

Form 10-Q for the quarter ended April 2, 2006

Note 12. Investment in Genizon BioScience Inc., page 16

3. We see that you are deferring revenue related to Genizon product shipments. Please tell us and revise future filings to disclose the significant terms and conditions of your sales agreement with Genizon. Additionally please clarify at what point you will recognize your deferred revenue under this agreement, citing any authoritative literature upon which you are relying.

Form 8-K filed April 18, 2006

4. We see that you present a non-GAAP statement of operations. This format may be confusing to investors as it also reflects other non-GAAP measures, including non-GAAP cost of revenue and non-GAAP income (loss) from operations. In fact, it appears that management does not use these non-GAAP measures but they are shown here as a result of the presentation format. Please note that Instruction 2 to Item 2.02 of Form 8-K requires that when furnishing information under this item you must provide all the disclosures required by paragraph (e)(1)(i) of Item 10 of Regulation S-K, including a reconciliation to the directly comparable GAAP measure for **each** non-GAAP measure presented and explain why you believe the measures provide useful information to investors.

- To eliminate investor confusion, please remove the non-GAAP statement of operations from all future filings and instead disclose only those non-GAAP measures used by management that you wish to highlight for investors, with the appropriate reconciliations.
- Please note that in the event that your Form 8-K is incorporated by reference into a 33 Act registration statement, we may have additional questions relating to the appropriateness of this information being included in a document filed with, and not just furnished to, the Commission. At that time, we may request an amendment to the Form 8-K.

As appropriate, please respond to these comments within 10 business days or tell us when you will provide us with a response. Please furnish a cover letter that keys your responses to our comments and provides any requested information. Detailed cover letters greatly facilitate our review. Please understand that we may have additional comments after reviewing your responses to our comments.

We urge all persons who are responsible for the accuracy and adequacy of the disclosure in the filing to be certain that the filing includes all information required under the Securities Exchange Act of 1934 and that they have provided all information investors require for an informed decision. Since the company and its management are in possession of all facts relating to a company's disclosure, they are responsible for the accuracy and adequacy of the disclosures they have made.

In connection with responding to our comments, please provide, in writing, a statement from the company acknowledging that:

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- the company is responsible for the adequacy and accuracy of the disclosure in the filing;
- staff comments or changes to disclosure in response to staff comments do not foreclose the Commission from taking any action with respect to the filing; and
- the company may not assert staff comments as a defense in any proceeding initiated by the Commission or any person under the federal securities laws of the United States.

In addition, please be advised that the Division of Enforcement has access to all information you provide to the staff of the Division of Corporation Finance in our review of your filing or in response to our comments on your filing.

You may contact Eric Atallah, Staff Accountant at (202) 551-3663 or me at (202) 551-3554 regarding comments on the financial statements and related matters. In this regard, do not hesitate to contact Martin James, Senior Assistant Chief Accountant, at (202) 551-3671 with any other questions.

Sincerely,

Angela Crane
Branch Chief