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This Week's Citation Classic

Yam L T, Li C Y & Crosby W H. Cytochemical identification of monocytes and granulocytes. *Amer. J. Clin. Pathol.* **55**:283-90, 1971.
[Blood Res. Lab., New England Med. Ctr. Hosps., and Dept. Med., Tufts Univ. Sch. Med., Boston, MA]

Several cytochemical methods were developed to identify the monocytes and the granulocytes. These methods are simple, sensitive, easily reproducible, and can be used either singly or in combination. They may be used as objective means for accurate identification of the human blood cells. [The *SCI*® indicates that this paper has been cited over 615 times since 1971.]

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"Accurate identification of blood cells is important for diagnosis and management of patients with blood diseases. It is essential for the studies involving functions, interactions, and immunity of various types of cells. Cell identification is usually based on morphologic observation. This method is not objective, but rather an 'art' and not a 'science.'

"In 1967, while working as staff members in the cytology laboratory of the hematology service under the direction of William H. Crosby, we were detailed the responsibility of cytodiagnosis for all patients with blood diseases. We were also charged with assisting researchers in identifying various types of cells in human subjects and experimental animals. These assignments proved to be difficult due to frequent encounters with unusual and exotic clinical cases. In addition, the variety of animals and experimental conditions used by our colleagues also complicated our job. We told Crosby our problems and with his blessings began searching for a more objective and specific method of cell identification. Our research approach was often met with cynicism. It wasn't uncommon to hear comments doubting our competency in cytodiagnosis. We soon found useful cytochemical markers for blood cell identification and established techniques for our procedures, yet we were reluctant to publish our observations. The mounting skepticism expressed by others undermined our own confidence.

"In the fall of 1969, we attended a meeting on lymphocyte cultures in New Hampshire. We also took our families along to enjoy the area. The meeting consisted of two grueling days and left little time for our loved ones. At the close of the meeting, as the exhausted participants were preparing to leave, one member of the group shocked us awake with a final question: 'Are you guys sure you're studying the lymphocytes? What is a lymphocyte anyway?' We shyly mentioned our work on the cytochemical markers but again met with little enthusiasm or interest.

"While returning to our motel, we began discussing our experience in cell identification and our moods changed from despair and frustration to that of anger and rage. We decided to report our observation and begin this paper before our emotions cooled. At the motel, using paper towels, we sat on the front lawn amid happy shouts of our playing children and protests from our wives, and laid down the essential ground-work of our paper in less than one hour. We insisted on inviting Crosby to be a coauthor because of his indispensable support and encouragement to us on this work and he should not go unrecognized.

"Our paper is cited often because the several methods for objective cell identification described are simple, practical, and indispensable both in patient care and cell research. We are, however, rather amused that this 'quickie' has withstood the test of time and has been useful to many, including those working in automation of the leukocyte differential count, and that it has helped to curtail comments regarding our competency in cytodiagnosis."