Report: cancer studies used wrong cells

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More than 100 published studies and two clinical trials involving esophageal cancer are based partly or wholly on research that mistakenly used cells from other types of cancer, a report claims.

Its authors suggest the findings may reflect a wider problem in cancer research—that cells thought to be from one type of cancer actually come from a totally different type.

The report, by Winand N.M. Dinjens of Erasmus University Medical Center in the Netherlands and colleagues, appears Jan. 14 online in the *Journal of the National Cancer Institute*. In the case of esophageal cancer, the authors said, their investigation revealed that three often-used cell lineages were actually from colon, lung or gastric cancer. The lineages were thought to be tumor cells from esophageal adenocarcinoma, one of two main types of esophageal cancer.

More generally, among lineages of tumor cells used in basic cancer research, "it has been estimated that up to one-third… have an origin other than that supposed," they wrote. The report appears Jan. 14 in the *Journal of the National Cancer Institute*. "In the past, the scientific community has recognized this problem, but decisive action has not been taken," they continued. The report attributed the mistakes to "cross-contamination between cell lines and mislabeling of cultures."

"Widespread use of contaminated cell lines threatens the development of treatment strategies for [esophageal adenocarcinoma]," the authors wrote. They also noted that 11 patents to date are based on the erroneous studies.

Two clinical trials in the United States are partly or wholly thrown into question by the findings, they added.

The first, a University of Chicago trial entitled The Effects of Sorafenib on

Molecular Barrett's Esophagus Cancer, is currently recruiting patients, with a goal of obtaining 15 volunteers. The second seeks to enroll 85 patients, but other types of cancer are also included. The study, sponsored by Geron Corp., is entitled Safety and Dose Study of GRN163L Administered to Patients With Refractory or Relapsed Solid Tumor Malignancies.

The first of these trials should be "reconsidered," Dinjens and colleagues wrote.

But Robert Shoemaker, a scientist at the National Cancer Institute at Frederick, Md., disagreed. He said that the rationale behind the University of Chicago study is based on a chemical pathway common to many tumor types. Thus it doesn't necessarily depend on a specific type of cancer cell having been used in the original studies.

Moreover, because even a single tumor contains different cell types, "one might question the rationale for any therapeutic maneuver that is based on studies conducted on a single cell line," he wrote, in an editorial accompanying Dinjens' report in the journal.