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Research duo say that far too many preclinical cancer study results are just plain wrong

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(Medical Xpress) -- C. Glenn Begley, formerly head of cancer research at pharmaceutical giant Amgen and Lee M. Ellis a cancer researcher at the University of Texas, have published a paper together in *Nature* that is sure to cause a storm of controversy in the cancer research community. They say they have found that more than ninety percent of papers published in science journals describing "landmark" breakthroughs in preclinical cancer research, describe work that is not reproducible, and are thus, just plain wrong.

In their paper the two describe the dismal success rate Amgen had in reproducing results from research papers, while Begley was still head of cancer research there. They say that out of fifty three “landmark” papers researched, only six described results that were reproducible, which is just about 11%. Another paper last year described how German giant Bayer AG, was only able to duplicate results described in 25% of preclinical cancer research papers it looked at.

Preclinical trials are those that are done on mice or other animals or with cells in a Petri dish in the lab, thus none of the results discussed in this new report reference human trials or outcomes.

The two say that there are various reasons for work appearing in science journals that is wrong, and suggest very few of them are related to outright fraud. They propose that instead it has more to do with the high-

pressure research environment that forces researchers to publish or die. Such an environment they say, can lead to researchers leaving out data in their studies that doesn't support their conclusions, massaging results or to interpret findings based more on gut feelings than actual science. The two also point the finger at science journals that seek out papers that will create the most buzz, rather than those that are found to actually lead to helping doctors help patients. Another problem they say is that very few true success stories are out there compared to the number of researchers working on cancer research, which makes the competition for publication that much harder, and which is unsettling when considering the huge amount of money that goes into cancer research.

To fix the situation, the two suggest basic changes be made to the research community. Specifically, they say researchers must be more willing to report negative findings in their papers and that research facilities, mainly at universities, should change their policies regarding publishing and of course ask that science journals take a hard look at their paper acceptance policies.

More information: Drug development: Raise standards for preclinical cancer research, *Nature* 483, 531–533 (29 March 2012) doi:10.1038/483531a