in conjunction with our results, demonstrate that in certain *H. pylori* strains, CagA plays an essential role in the activation of NF- κ B.

We acknowledge in our article that CagA may not be the only component that *H. pylori* uses to activate inflammation. Compelling evidence exists that under some circumstances other *H. pylori* factors can induce an inflammatory response. For example, CagA clearly does not seem to be essential for activation of NF- κ B in HEK293 cells or macrophages (Maeda *et al*, 2001; Viala *et al*, 2004). Previous studies have also convincingly demonstrated that among populations of *H. pylori* cagA-positive strains, the ability of CagA to activate NF- κ B is strain-specific (Brandt *et al*, 2005). Thus, the accompanying remarks from Schweitzer *et al* underscore the importance of considering the experimental model when studying *H. pylori*-mediated inflammation. The goal of our work was to decipher the molecular mechanism for the activation of NF- κ B by *H. pylori*. In that

context, our study provides new insight into the pathogen-effector-induced activation of the inflammatory response.

CONFLICT OF INTEREST

The authors declare that they have no conflict of interest

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The Bronze Age of science in Spain

In 2008, the Spanish government promised a new Silver Age of science that would comprise the creation of a new Ministry of Science together with major, long-awaited investments in research and development (Editorial, 2008). Unfortunately, those expectations have not translated into reality. The recently tabled 2010 national budget proposes that funding for the Ministry of Science should be cut by more than 15%, thus returning to 2006 levels. In fact, the situation will be even more serious given that the new Ministry also comprises the Health Institutes, which were previously the oversight of the Ministry of Health. Only the funding of fellowships for education at all levels will be retained. Unlike the somewhat positive outlook that Michela Bertero described in her recent *EMBO reports* article about science in Spain (Bertero, 2009), the reality is likely to be rather different, at least for the next few years.

The Ministry of Science is the main source of funding for research in Spain, as there is very little investment available from private sources or foundations. The rationale behind the serious decrease in public funds is a programme of austerity in response to the financial crisis. The Ministry of Education, which is responsible for universities and

their research, has already declared that it will reduce funding for the maintenance of laboratories and for attracting young scientists from abroad (Díez & Riviera, 2009). As an example of what is to come next year, the Spanish Research Council (www.csic.es), which depends on funding from the Ministry of Science, has reduced posts by more than 50% compared with 2008, whereas the CNRS (www.cnrs.fr)—the French equivalent—has continued to offer a large number of positions during this year. The president and former presidents of the Spanish Society of Molecular Biology have signed a manifesto to protest against this massive decrease in funding. At the same time, the Spanish Prime Minister, José Luis Rodríguez Zapatero, has claimed that the economic crisis will force Spain to develop a more competitive and innovative economy based on knowledge, so that Spain, like other European countries, can emerge from the financial turmoil stronger and better prepared for future crises.

Spain has long lagged behind similar European countries in terms of scientific research. With the exception of a few scientists from the Spanish Golden Age from the fifteenth to seventeenth centuries, and a handful from the eighteenth century, Spain lacks the long and fertile

scientific tradition evident in much of central Europe. Even in the twentieth century, the only well-known Spanish scientist was Nobel laureate Santiago Ramón y Cajal. Some historians attribute this lack of Spanish scientific pedigree to the influence that the Catholic Church exercised during the past centuries, while others note the lack of a true democratic Spanish society until the second half of the twentieth century (Sagan, 1995). Yet others, including a number of renowned Spanish philosophers, think that science is simply a strange concept to many Spaniards; the scientific method is five centuries old and was developed in countries that tended to be the enemies of Spain—essentially it ‘hasn’t caught on’ in Spanish society. Nevertheless, the Spanish people cannot afford for their government to waste more opportunities to invest in science.

In times of crisis and economic difficulty, the best strategy for recovery is to bolster investment in research and education—an area where Spain is also at the bottom of the rankings of West European countries—without leaving more basic social necessities unattended. Japan, Finland and South Korea invested heavily in science during the 1990s when their economies were floundering, and the US administration has committed an extraordinary amount of money to basic research with the argument that scientists

are solving national problems (Editorial, 2009a, 2009b). Other European countries including Ireland, Germany, Sweden and Greece are following suit (Editorial, 2009c; News in brief, 2009). After decades of scientific and cultural paucity in Spain, it has taken many years and considerable effort for Spanish research to catch up with the 'knowledge-train'. Now, the political focus on the short-term, even in a time of crisis, could once again relegate Spain to the last wagons. Such ill-conceived policies will mean that future Spanish generations will have had their financial and intellectual

wealth sold short by today's generation, who were unable to see the need to invest in science for long-term prosperity and national wellbeing.

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The authors have no conflict of interest.

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