(Okayama, 24 March 2016) **Okayama University researchers** in collaboration with colleagues in India have developed inactivated vaccines a promising candidate for the production and commercialization of a low cost
oral dysentery vaccine
for use in developing countries.

Shin-ichi Miyoshi at the Okayama University Graduate School of Medicine and Dentistry and colleagues orally administered a mixture of the six major Shigella serotypes of heat-killed bacteria sample preparations to laboratory animals in order to study the possibility of developing inactivated vaccines. The researchers conducted experiments using both passive and active immunization experimental systems and observed protective effect against infections with sufficient immunity-inducing effect.

Furthermore, in tests using human cultured cells, the researchers did not find toxicity to the cells and observed strong production inducing immunity factors such as cytokines. This sample preparation has proved to be a promising candidate for oral dysentery vaccine. These sample preparations have proved to a promising candidate for the production and commercialization of a low cost oral dysentery vaccine. In the future, using the rhesus monkeys (natural host of Shigella), the researchers plan to study the protective and immunity-inducing effects as well as conducting clinical studies in Kolkata, India.

Background and expected outcome
Okayama University was selected by MEXT as the center for emerging and re-emerging infectious diseases research base formation program and in 2007 the university established the "Okayama University India Infection Joint Research Centre to contribute to the control of the many deaths due diarrhea (cholera, dysentery) in India. One of the research projects is on the development of inexpensive oral dysentery vaccine because of the lack of dysentery vaccines for practical use.

Dysentery destroys intestinal tissue because it is a diarrheal disease with severe bleeding with deaths in developing countries such as India, reaching 600 thousand people annually. For this reason, the World Health Organization has designated the development of dysentery vaccine to be one of the most urgent research areas. Today, drug resistant Shigella is spreading fast

and its treatment and the control of dysentery is becoming increasingly difficult.
The results of this research are expected to lead to the development and commercialization of low-cost dysentery vaccines before the control of dysentery becomes extremely difficult.

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Advertisement
The companies or research organizations, which cooperate to develop the low cost oral dysentery vaccines, are advertising widely.

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