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Multigeneration reproductive-developmental toxicity study of genetically modified foods in rats

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Identification of potential reproductive toxicity for novel proteins produced by GM crops is a difficult task. Because of a specific characteristics of food, low level chronic exposure, we designed a four generation animal study. In each generation, rats were fed with solid pellet containing 5% GM potato(*bar* gene) and non-GM potato for 10 weeks prior to mating to assess the potential reproductive and developmental toxic effects. In multigeneration study, no GMO related changes were observed in body weight, food consumption, reproductive performance, organ weight and hormone concentrations. In addition, to investigate the possibility of gene persistence in organ tissues after long term exposure of low level of GM feed, PCR was done using extracted genomic DNA. In each generation, the gene responsible for *bar* was not found in reproductive organs of GM potato treated male and female rats. And the litter related indexes did not show any GMO related changes. The data suggested that genetically modified potato have no adverse effects on reproductive ability.

Keyword : GM-potato, multigeneration, reproductive-developmental toxicity, *bar* gene