

CHAPTER VII

CONCLUSION

The results of this investigation indicated that most types of fermented pigmented rice were safe and might have a health benefit to consumers because they could counteract the mutagenicity of urethane. Fermented black glutinous rice has the highest summed score concerning antioxidant activities, total phenolic and anthocyanin contents and antimutagenicity. Therefore, it was selected as an ingredient for developing a healthy cereal bar. It was successful in creating a new functional food product using Khao-Mak made of fermented black glutinous rice as an ingredient. This research was the first attempt to develop a food product designed to protect the consumer from the hazard of *in vivo* formed free radical and some mutagens that have similar bio-characteristics to urethane. The cereal bar containing 14.75% dried fermented black glutinous rice was accepted by panelists. It contained higher amount of antioxidant activities, total phenolic and anthocyanin contents, antimutagenicity and total dietary fiber than those of the control cereal bar and they did not change during 90-day storage in vacuum-sealed laminated aluminum foil bags at room temperature (28°C). Further evaluation using *in vitro* cell culture systems on the antiproliferation of cancer cells of the product should be done.