



Extract of Fermented Soybean (FSAE) as an Anti-inflammatory Diet

PATENT NO. PI 2022004982



BRIEF TECHNOLOGY

The present invention provides a method and scientific evidence for the prophylactic efficacy of FSAE on Pb-induced inflammation in late juvenile to adult stage zebrafish.

CURRENT ISSUES

Previous studies that were carried out using the zebrafish model are mainly focused on screening or analyzing the toxicity of Pb or the effect of an unfermented or fermented soybean diet on zebrafish.

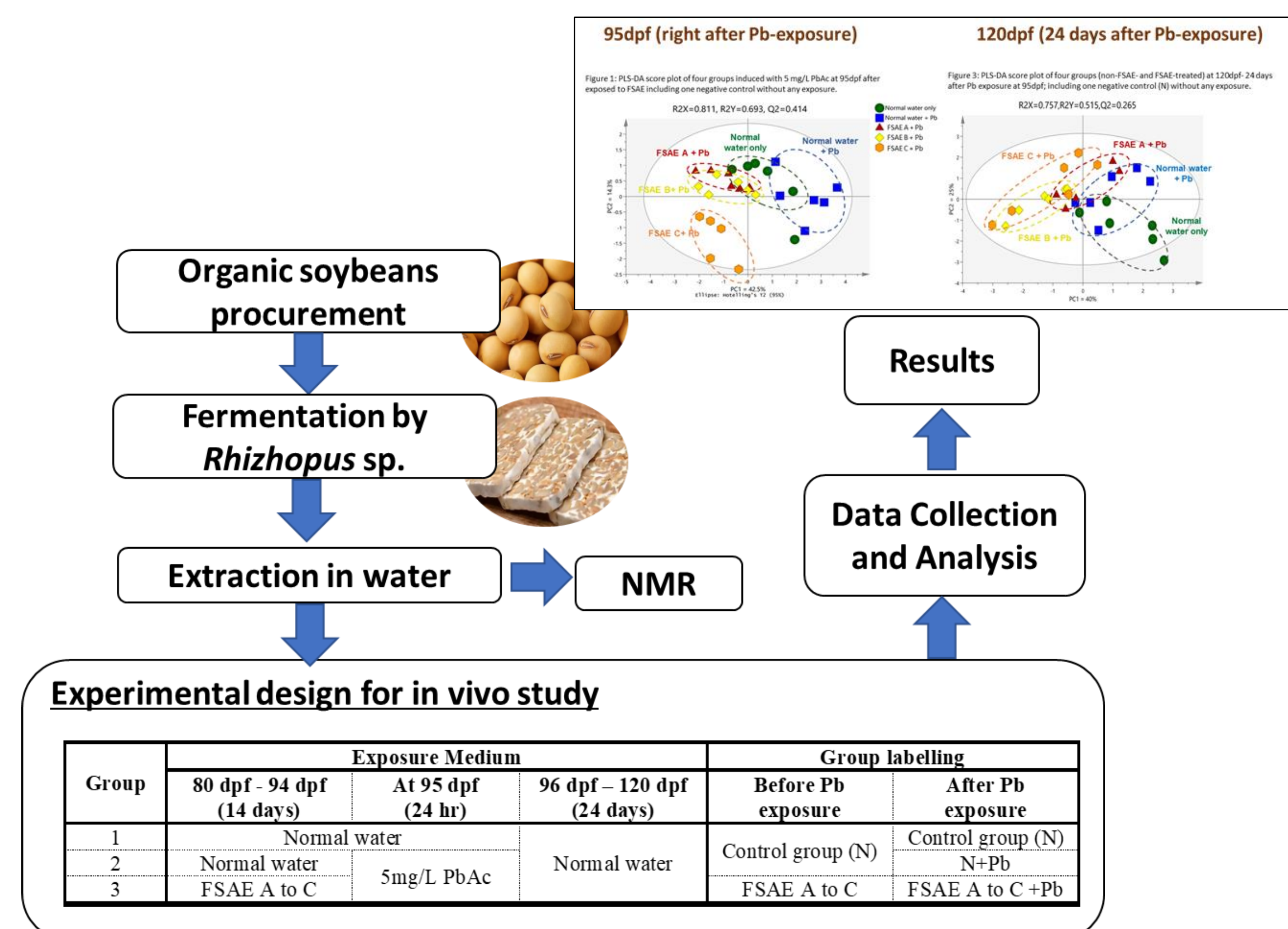
There is no study on the protective effect of a dietary strategy against toxicity of Pb-induced in zebrafish model. Also no report on the prophylactic mechanism mode of fermented soybean in the Pb-induced zebrafish model.

Zebrafish is easy to handle, have high fecundity, are cheap and fast-growing, and most importantly share almost 75% close similarity to human genes, which this discovery could be translated to human use. Using rodent limited the number of samples or replications due to the cost and space issue.

INVENTIVENESS & NOVELTY

This invention has novelty in the standardized extract of fermented soybean (tempeh) that responsible for the anti-inflammatory property through mitigation of Pb-toxicity effect.

The prophylactic protection of FSAE on Pb-induced inflammation is the first to be applied to the zebrafish model. The results could be possibly extrapolated for human use.



USEFULNESS & APPLICATION

FSAE at a given effective concentration can be included in the preparation of dietary supplement composition within an acceptable dosage regimen, including but not limited to powders, tablets, capsules, caplets, solutions, ready meals or drinks and pureed to achieve a desirable protective effect.

The extracts can also be formulated as a confection and pasta such as a pastry, noodles, flavoring ingredients, flour, etc. Lyophilized or oven-dried tempeh flour can be used in the manufacturing of vegan noodles, cookies, or biscuits, or the extracts can be formulated as a meat alternative and extenders like burger patties, sausages, nuggets, and the like. The extracts can also be formulated as tempeh-based foods for infants and the elderly such as weaning food, milk, and drinks.

IMPACT OF THE PRODUCT

Prophylactic exposure experiment (FSAE first, before induced with Pb); discloses the effective composition.

The exposure concentration provides protection by improving behavior and reducing the accumulation of inflammatory metabolites in the zebrafish.

MARKET POTENTIAL

Multi-level marketing corporation, nutraceutical, pharmaceutical, and life sciences company, etc.



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