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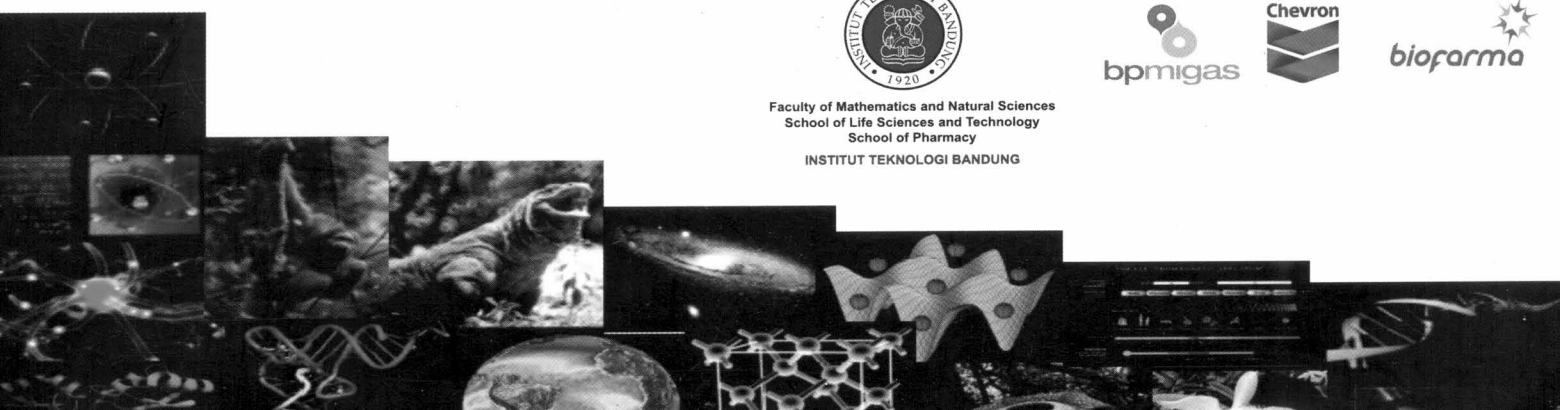
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P1-11
DENGUE HEMORRHAGIC FEVER
(DHF) EPIDEMICS:
EARLY WARNING AND PROTECTION

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A three-month in advance warning system for upcoming DHF epidemics is developed. The system uses a simple predictive model based on past and present DHF cases, climate and meteorological observations as inputs to predict future DHF cases. Using Peirce score as a measure of prediction skill, the model successfully predicts a moderately-severe epidemic at lead times of up to 6 months. In addition, the economic benefit of using the model's output to protect a family from an epidemic is also demonstrated. It is shown that families who are implementing such a prediction into their decision making process gain more benefit than those with un-informed decisions.

P1-12
Evaluation of Neuroprotective Effect of
Gotukola (*Centella asiatica* (L.) Urban)
Extract in Cerebral Ischemic Rat Model

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Cerebral ischemia, which causes neuronal damage, is one of the contributing factors leading to stroke. Inhibition of neuronal damage, therefore, will be important in reducing the risk of stroke. Traditionally, *Centella asiatica* (L.) Urban, also known as gotukola, has been known to maintain memory integrity at the central nervous system level. The objective of this research is to evaluate the neuroprotective properties of gotukola (*Centella asiatica* (L.) Urban) extract. The evaluations of inhibitory effect of neural damage of gotukola extract were done in rats made stroke by single common carotid artery occlusion (CCAO). The rats were randomly assigned to the following groups: control (sham operated), CCAO, CCAO + 100 mg/kg extract, and CCAO + 320 mg/kg extract. Examinations were done before the surgery and continued every day until 8 days after the operation. Evaluation parameters included: exploratory distance and number of rearing in open field apparatus; the width of the opening of the *ptotic* eye; the number of head dip on the platform; hanging, reestablishment, and neurological scores; and the percentage of neuronal damage.

The results revealed that the extract improved the number of rearing as well as exploratory distance in open field; hanging, reestablishment, and neurological scores; and the width of the opening of the *ptotic* eye, compared to those observed in CCAO group. The percentage of neuronal damage found in group treated with CCAO + 100 mg/kg extract, CCAO + 320 mg/kg extract and CCAO was $16.33 \pm 2.96\%$, $22.75 \pm 2.93\%$, and $35.50 \pm 4.09\%$ respectively. Taken together, the results showed that gotukola (*Centella asiatica* (L.) Urban) extract inhibited the neuronal damage induced by cerebral ischemia, and further indicated the potential use of the extract in preventing neuronal damage in stroke.

KEYWORDS: *Centella asiatica*, cerebral ischemia, neuroprotective effect.

P1-13
A CANDIDATE GENETIC VARIANT
OF HUMAN NONINSULIN
DEPENDENT (TYPE 2) DIABETES
MELLITUS IN ONE LINEAGE

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Mitochondria organelle play an integral role in energy production in cells and are involved in glucose metabolism and insulin secretion. It was suggesting that variants in the mitochondrial genome may contribute to diabetes susceptibility. Despite it caused by environmental factors such as obesity, noninsulin-dependent Diabetes Mellitus (NIDDM) can also be caused by some mutations in mitochondrial DNA (mtDNA). Therefore, this research is conducted to determine the genetic variant of human mtDNA D-loop that trigger NIDDM in a single maternal lineage. Based on a comparison between primary data, secondary data of diabetic and non-diabetic variant to revised Cambridge Reference Sequence (rCRS) was obtained two kinds of mutations that have the highest frequency, namely mutation of T16311C and T16362C. In addition, the sample DM 13 and DM 14 T16189C mutation was also found that form a poly cytosine stretch [14C] at nucleotide positions 16184-16197 and T16172C mutations located in mitochondrial area Termination Associated Sequence. The four types of mutations are thought to be a candidate genetic variant HVI region of mtDNA D-loop that can trigger the occurrence of type 2 diabetes in a maternal lineage. The results showed the candidate genetic markers causes type 2 diabetes in a maternal lineage. Hence, the data were expected to give a contribution to database of human mtDNA genetic variants associated with disease, which can be utilized in various fields, especially in medical.