

## INTISARI

**Latar Belakang:** Ikan Tuna merupakan jenis ikan yang banyak ditemukan di Indonesia, dengan salah satu produk olahan berupa minyak ikan (MI). Minyak ikan dapat dibuat dari hasil *by-product*, salah satunya jeroan (*viscera*). Komponen yang banyak dikandung dalam minyak *viscera* ikan Tuna adalah asam lemak omega-3, terutama EPA dan DHA. Komponen tersebut dapat meningkatkan fungsi sistem imun, salah satunya menginduksi proliferasi splenosit.

**Tujuan Penelitian:** Mengetahui pengaruh pemberian minyak ikan dari *viscera* ikan Tuna terhadap proliferasi splenosit dan indeks stimulasi proliferasi splenosit, serta mengetahui hubungan antara kenaikan konsentrasi minyak ikan terhadap proliferasi splenosit dan indeks stimulasi proliferasi splenosit.

**Metode:** Penelitian ini menggunakan metode MTT (*Microtetrazolium*) dengan sampel minyak *viscera* ikan Tuna (MVIT) dan minyak ikan komersial (MIK) sebagai pembanding, yang dibagi menjadi 6 varian konsentrasi berbeda (3,125, 6,25, 12,5, 25, 50, 100 µg/ml) tanpa dan dengan penambahan Con-A. Suspensi ditera menggunakan ELISA reader (OD595), yang hasilnya dimasukkan ke rumus.

**Hasil:** Hasil analisis *two-way* MANOVA dan DMRT menunjukkan adanya pengaruh pemberian MVIT terhadap proliferasi splenosit ( $p < 0,05$ ), dengan konsentrasi terbaik 100 µg/ml. Hasil analisis *two-way* ANOVA menunjukkan adanya pengaruh pemberian MVIT terhadap indeks stimulasi proliferasi splenosit ( $p < 0,05$ ). Sedangkan, hasil analisis korelasi *Pearson* menunjukkan adanya hubungan positif antara kenaikan konsentrasi MI dengan proliferasi splenosit, kecuali pada kelompok yang diberi MVIT dengan penambahan Con-A menunjukkan hasil tidak signifikan. Hasil analisis korelasi *Pearson* juga tidak menunjukkan adanya hubungan antara kenaikan konsentrasi dengan indeks stimulasi proliferasi splenosit ( $p > 0,05$ ).

**Kesimpulan:** Terdapat pengaruh dalam pemberian MVIT terhadap proliferasi splenosit dan indeks stimulasi proliferasi splenosit. Terdapat hubungan positif antara kenaikan konsentrasi MI dengan proliferasi splenosit secara umum, tetapi tidak terdapat hubungan antara kenaikan konsentrasi MI dengan indeks stimulasi proliferasi splenosit.

**Kata kunci:** minyak *viscera* ikan Tuna, EPA, DHA, proliferasi splenosit, indeks stimulasi proliferasi splenosit.

## ABSTRACT

**Background:** Tuna is a species of fish which is widely produced in Indonesia, with one of its products being processed foods like fish oil. Fish oil can be made from the by-products of fish, such as its internal organs (*viscera*). A component that is abundant in fish viscera is Omega-3 fatty acids, especially EPA and DHA. Those components can be useful for boosting immune system by inducing splenocyte proliferation as an example.

**Purpose:** To evaluate the effects of fish oil from Tuna viscera on splenocyte proliferation and splenocyte proliferation stimulation index. Also, to examine the correlation between the increase of fish oil from Tuna viscera concentration on splenocyte proliferation and splenocyte proliferation stimulation index.

**Method:** The research used MTT assay, using samples in the form of tuna viscera oil (TVO) and commercial fish oil (CFO) as control with various concentration (3,125, 6,25, 12,5, 25, 50, 100 µg/ml) with and without addition of Con-A. The suspension analyzed using ELISA reader (OD595), and the results of which would be entered to the formula.

**Results:** The results of two-way MANOVA dan DMRT showed that there was a significant effect of TVO on splenocyte proliferation, with its best concentration to which is 100 µg/ml ( $p < 0,05$ ). The results of two-way ANOVA showed that there was a significant effect of TVO on splenocyte proliferation stimulation index ( $p < 0,05$ ). Meanwhile, the results of Pearson correlation test showed that there was a positive correlation between the increase of fish oil concentration and splenocyte proliferation ( $p < 0,05$ ), except for the groups that added with TVO and Con-A. The Pearson correlation test also showed that there was no correlation between the increase of fish oil concentration and splenocyte proliferation stimulation index ( $p > 0,05$ ).

**Conclusion:** There was an effect of TVO on splenocyte proliferation and splenocyte proliferation stimulation index. Also, there was a positive correlation between the increase of fish oil concentration on splenocyte proliferation on overall results, while there was no correlation between the increase of fish oil concentration on splenocyte proliferation stimulation index.

**Keywords:** Tuna viscera oil, EPA, DHA, splenocyte proliferation, splenocyte proliferation stimulation index.