

## INTISARI

### PENGARUH PENAMBAHAN *Insulin-Transferin Selenium* (ITS) PADA MEDIA KULTUR PEMATANGAN OOSIT SAPI POTONG SECARA *IN VITRO*

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Penelitian ini bertujuan untuk mengetahui pengaruh *Insulin-Transferin Selenium* (ITS) pada pematangan oosit sapi potong secara in vitro. Oosit sapi potong dikoleksi dari Rumah Potong Hewan (RPH) Kota Yogyakarta dan diletakkan dalam termos berisi air hangat 37° C sebanyak 454 ml dengan diberi 0,88% NaCl dan 0,11% *Amoxicillin* lalu dilakukan perlakuan di Laboratorium IVF, Rumah Sakit Gladiol Magelang. Isi folikel pada oosit termaksud *cumulus-oocytes complexes* (COC's), yang dikoleksi dengan aspirasi pada antrum follikel kecil yang terlihat (diameter sekitar 2-6 mm) menggunakan jarum suntik 10 ml dengan *needle* berukuran 18 *Gauge*. Oosit dikultur pada dua media, yang pertama media kultur yang berisi 1000 µl DMEM, 10% Serum FBS sebanyak 10 µl, 5% FSH sebanyak 5 µl, pemicilin 600 IU/ml, Streptomycin 100 mg/ml selaku kontrol dan untuk media kultur sebagai perlakuan ditambahkan dari bahan tadi 1% ITS sebanyak 1 µl pada *media culture* selama minimal 24 jam pada suhu 37° C di inkubator 5 % Co<sub>2</sub>. Pengamatan dilakukan dengan mikroskop stereo dan mikromanipulator system dilakukan pengamatan polar body dan ekspansi cumulus pada oosit pasca inkubasi.

Hasil penelitian ini diuji secara statistika menggunakan  $\chi^2$ , menunjukkan adanya asosiasi penambahan *Insulin-Transferin Selenium* (ITS) pada media kultur pematangan oosit sapi potong secara *In Vitro Maturation* terhadap tingkat kematangannya ( $\chi^2 = 5,523$ ; P = 0,019; OR = 0,475). Tingkat kematangan Oosit sapi potong pada media kultur dengan penambahan ITS 2,1 kali lebih tinggi tingkat kematangannya. Pengulangan sebanyak 4 kali menunjukkan pada media kultur menggunakan ITS presentase kematangannya 88,2 %; 50 %; 100 %; 51,85% dan media kultur tanpa ITS 86,67 %; 20 %; 72,73 %; 39,74 %. Kesimpulannya, pemberian *Insulin-Transferin Selenium* (ITS) memiliki pengaruh terhadap peningkatan angka kematangan oosit pada media kultur secara *In Vitro*.

**Kata kunci :** *Oosit, Sapi, In Vitro Maturation, Insulin Transferin Selenium, Media*

## ABSTRACT

### EFFECT OF *INSULIN-TRANSFERIN SELENIUM* (ITS) IN MEDIA CULTURE OF CATTLE OOCYTE ON MATURATION IN VITRO

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The aim of the present study was to evaluate the effect of Insulin-Transferin Selenium (ITS) in media culture of cattle oocyte on maturation in vitro. Cattle ovary were collected at a local slaughterhouse in Yogyakarta and put in thermos bottle contain warm water with 37° C of temperature and be given inside it 4 gr of NaCl ; 500 mg Amoxillin and the treatment of this research we do in IVF laboratory, Gladiol Hospital of Magelang. The follicular content including cumulus-oocyte complexes (COC's), were collected by aspirating the visible small antral follicles (around 2-6 mm diameter) with 10 ml syringe equipped with an 18 gauge needle. Oocytes were cultured in two medium, first culture medium is contain 1000  $\mu$  DMEM, 10% FBS 10  $\mu$ l, 5% FSH 5  $\mu$ l, pennicilin 600 IU/ml, Streptomycin 100 mg/ml as control and for the second culture medium as Treatment same as control medium but adding 1% of ITS 1  $\mu$ l then incubation minimum for 24-hours at 37° C on 5% CO<sub>2</sub> incubator. The observation with mikroskop stereo equipment and system manipulator equipment for observe the polar body and expanded of cumulus in oocyte after inkubated.

The result in statistics test that using  $\chi^2$  showed there is association in adding *Insulin-Transferrin Selenium* (ITS) maturation culture media in vitro toward of oocyte mature level ( $\chi^2= 5,523$ ; P= 0,019; OR= 0,475). Level of cattle oocyte mature media with ITS 2,1 more high in mature level. This research that do with 4 replication showed in culture medium that using ITS have maturation percentage are 88,2 %; 50 %; 100 %; 51,85% and for culture medium without ITS the maturation percentage are 86,67 %; 20 %; 72,73 %; 39,74 %. The conclusion, adding *Insulin-Transferrin Selenium* (ITS) in culture media of oocyte in IVM could effect increase a number mature of oocyte.

**Keywords :** Oocyte, Cattle, In Vitro Maturation, Insulin Transferin Selenium, Media