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	STANDARD OPERATING PROCEDURE (SOP)	Document Num.: S-020
		Release date: 31 May 2019
		Effective date: 31 May 2019
	Induction of Diabetes by Streptozotocin in Rats	Version: 1
First draft: THCT		
Approved by:		

Materials / Equipment:

1. Lab coat
2. Freezer
3. Refrigerator
4. Glucose meter
5. Digital balance
6. Scissors

Solutions / Media:

1. ddH₂O sterile
2. Streptozotocin (STZ) (Selleckchem, USA cat #S1312) 500 mg
3. Glucose solution 5%
4. Insulin Injection (Lantus Solostar)

Consumables:

1. Nitrile gloves
2. 70 % ethanol spray
3. Syringe 1cc
4. Alcohol Swab
5. Glucose strips
6. Micropipette and filtered tips

Work sheet: **Induction of Diabetes by Streptozotocin in Rats**

Personnel :

- Sprague Dawley (SD) rats weighing 180-200 gr will be rendered diabetic by single dose intraperitoneal injection of Streptozotocin (STZ) (50 mg/kg BW; Selleck chemicals, USA)

A. Preparation (Pre-injection)

- Outbred male SD rats are obtained from National Agency of Drug and Food Control (BPOM), Jakarta
- The rats are allowed free access to standard laboratory food and water and housed socially in cages in a controlled environment (23°C ± 3°C, 30-70% humidity, and a 12:12 h light:dark cycle)
- Aliquot the STZ powder into cryotubes according to the dosage (10 mg/200 gr BW); to anticipate the STZ lost during the dilution and injection process, the STZ is weighed 12 mg in each tube
- One day before the injection, check the non-fasting blood glucose of the animals. Blood samples are obtained from tail vein of the animals for glucose assay (by cutting the tail end). **Blood Glucose:**_____ mg/dl

B. Injection Day (Date:_____)

- On the day of injection, **FRESHLY** dissolved the STZ with sterile ddH₂O (200 µL)
- Weigh the animal. **Body Weight:**_____ gr
- Hold the animal; prick the tail end to collect blood for blood glucose test.
Blood Glucose:_____ mg/dl
- Inject the STZ solution intraperitoneal using 1cc syringe

C. Post-Injection

- Blood glucose and body weight will be checked daily (in the morning, before meal)
- Rats are considered diabetic if after 3 days post-STZ injection, the blood glucose is >200 mg/dl and presented with at least 3 days of persistent hyperglycaemia.
Notes: STZ injection may induce secondary hypoglycaemia due to insulin release associated with acute beta cell destruction to below the expected level, or cause death of the animal. Rats will be maintained by administration of glucose solution (5%) when their blood glucose is below 100 mg/dL, or by insulin administration (1-2 units) subcutaneous (Lantus Solostar) when the blood glucose is above 400 mg/dL
- Animal that failed to be diabetic will be reinject with STZ with the same dose, one week after the first injection
- The rat will be eliminated if hyperglycaemia is still not achieved after 2 times injection

D. Daily Observation

- The rats were allowed free access to standard laboratory food and water *ad libitum*
- Bedding will be changed every 2 days



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SURAT PENCATATAN CIPTAAN

Dalam rangka perlindungan ciptaan di bidang ilmu pengetahuan, seni dan sastra berdasarkan Undang-Undang Nomor 28 Tahun 2014 tentang Hak Cipta. dengan ini menerangkan:

Nomor dan tanggal permohonan : EC00201944409, 1 Juli 2019

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Kewarganegaraan : Indonesia

Jenis Ciptaan : **Buku Panduan/Petunjuk**

Judul Ciptaan : **Induction Of Diabetes By Streptozotocin In Rats**

Tanggal dan tempat diumumkan untuk pertama kali di wilayah Indonesia atau di luar wilayah Indonesia : 31 Mei 2019, di Jakarta Barat

Jangka waktu perlindungan : Berlaku selama hidup Pencipta dan terus berlangsung selama 70 (tujuh puluh) tahun setelah Pencipta meninggal dunia, terhitung mulai tanggal 1 Januari tahun berikutnya.

Nomor pencatatan : 000145756

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