

- SOP No:** AHP 84
- SUBJECT:** Induction of arthritis in SKG mice using Curdlan
- POLICY:** Only experienced operators are to perform this procedure
- PRECAUTIONS:** Gloves, mask, long-sleeve gown, closed in shoes, sharps containers.  
Monitor the mice closely when using a heat lamp
- EQUIPMENT:** Heat lamp  
Conical bench-top mouse restraint  
Masking tape  
Prepared Curdlan/OVA antigen  
25G needle  
1mL syringe
- PROCEDURE:**
- Inject mice at 4 weeks of age to induce the development of autoimmune arthritis. Injections can be performed using either the intra-peritoneal or subcutaneous routes.
- Intra-peritoneal**
1. Prepare the syringe and needle and draw up the required volume of prepared curdlan (dosage 3mg/mouse in a volume less than 200uL).
  2. Restrain the mouse by the neck scruff.
  3. Insert the needle gently into the mouse's abdomen and inject the curdlan.
- Sub-cutaneous**
- For some experiments involving recipient SKG mice that are cross-bred with DO11.10 T-cell receptor transgenic mice the curdlan may be combined with Ova antigen to stimulate T-cell receptors.
1. Secure the mouse restraint device to the bench top using masking tape.
  2. Prepare the syringe and needle and draw up the required volume of prepared curdlan or curdlan/Ova antigen.
  3. Place the mouse in the conical bench-top mouse restraint and hold the tail taut.
  4. Spray the base of tail area with 70% ethanol to sterilize the skin and push the fur up to expose the skin surface.

- 5. Insert the needle just under the skin at the base of tail and inject the curdlan or curdlan/Ova antigen**

**RECOMMENDATIONS:**

- 1. Injection volume must be no greater than 200uL.**
- 2. Monitor mice twice weekly for the development of arthritis after the injection. The clinical score-sheet is used to assess the general welfare of the mice. Any mouse scoring 10 or greater is to be immediately euthanased according to [SOP AHT 35](#) or [SOP AHT 36](#).**

**DATE ISSUED: 24.06.2009**

**REVISED:**

**REFERENCES**

- 1. Yoshitomi et al. (2005) A role for fungal {beta}-glucans and their receptor Dectin-1 in the induction of autoimmune arthritis in genetically susceptible mice. J Exp Med Mar 21;201(6):949-60.**

**SCORE SHEET FOR SCORING ARTHRITIC ENDPOINTS**

*Title of model or project:*

**Experimental/ Treatment Group:**

**Date**

**Time:**

**AEC Number:**

**Name of person scoring:**

**Name of Supervisor/Chief Investigator**

**Contact Telephone Number:**

**After Hours**

<i>Indicators</i>	<i>Scoring of each animal in group</i>					<i>Scoring of independent variables</i>
	1	2	3	4	5	
<b>Date:</b>						
<b>Bodyweight:</b>						0. Bodyweight is maintained or increased, normal consumption and excrements. 1. Uncertain, growth rate is not maintained or change in bodyweight is minor, less than 5% of initial pre-immunisation weight. 2. The animal is eating and drinking but food consumption is often reduced and water intake may be increased or decreased. Bodyweight loss is 5 to 15% of starting weight, faeces may be altered in amount or consistency. 3. No food or water being consumed. Total loss is greater than 20% of starting weight.
<b>Appearance:</b>						0. Normal, coat is smooth, lies flat and often has a sheen, eyes are clear and bright, nails healthy 1. Slightly ruffled coat but no other marked changes 2. Moderate ruffled coat, skin dry and nails 3. Very ruffled coat, external orifices ungroomed, abnormal posture, may look hunched up, eyes look pale and pupils enlarged
<b>Clinical Signs and behavior:</b>						0. Respiration appears normal and normal behaviour pattern 1. Small changes in above parameters 2. Respiration rapid and less mobile and less alert. Agitation at site of swelling 3. Respiration noisy, comatose, very restless or does not move at all. Signs of irritation and agitation at sites of swelling.
<b>Joint swelling:</b>						0. Normal, no signs of joint swelling, no signs of compromised mobility 1. Slight swelling of distal joints, no redness evident in the paws. 2. Signs of knee and ankle swelling. Slight redness in the paws. Mobility affected. 3. Knee and ankles swollen, All distal joints of the paws swollen and red. Hyperextension of the ankle and hyperpronation of the toes. Mobility compromised.
<b>Total score:</b>						0 to 4 Normal, 5 to 10 Monitor carefully, evidence of suffering, 10 and above ample evidence of severe pain, euthanase the animal One score of 3 in any of the criteria euthanase the animal immediately.