

Treatment of Canine Papillomatosis

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www.petoftheday.com/talk/picture.php?albumid





<http://www.lab-retriever.net/board/dog-warts-should-t7305198.html?>





Treatment of Canine Papillomatosis

- Spontaneous Regression
- Surgical Excision
 - Cryosurgery : with liquid nitrogen
 - Electrodesiccation and curettage
- Immunotherapy
 - Autogenous formalin inactivate vaccine
 - Immunoenhancers
- Miscellaneous treatment
 - 40% salicylic acid
 - 30-50% lactic acid
 - Antibiotic

Treatment of Canine Papillomatosis

- Canine mucous membrane papillomatosis
 - Presence on oral mucous membrane from lips to esophagus and on conjunctival mucous membrane : young dog
 - (*Canine Oral Papilloma*)
- Canine Cutaneous Papillomatosis
 - Presence on intracutaneous epithelium : old dog



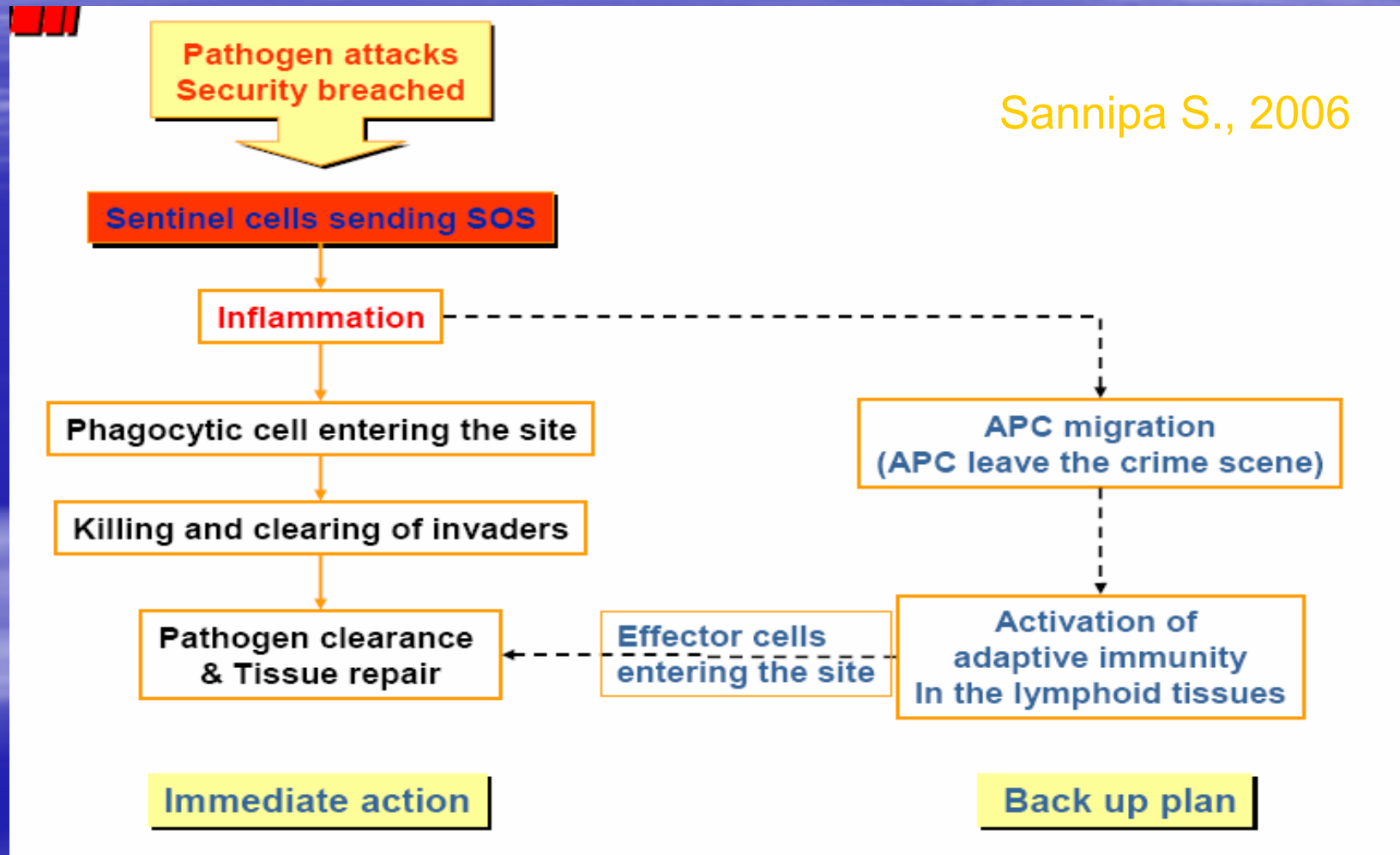
Treatment of Canine Papillomatosis

Spontaneous Regression in case canine oral papillomas

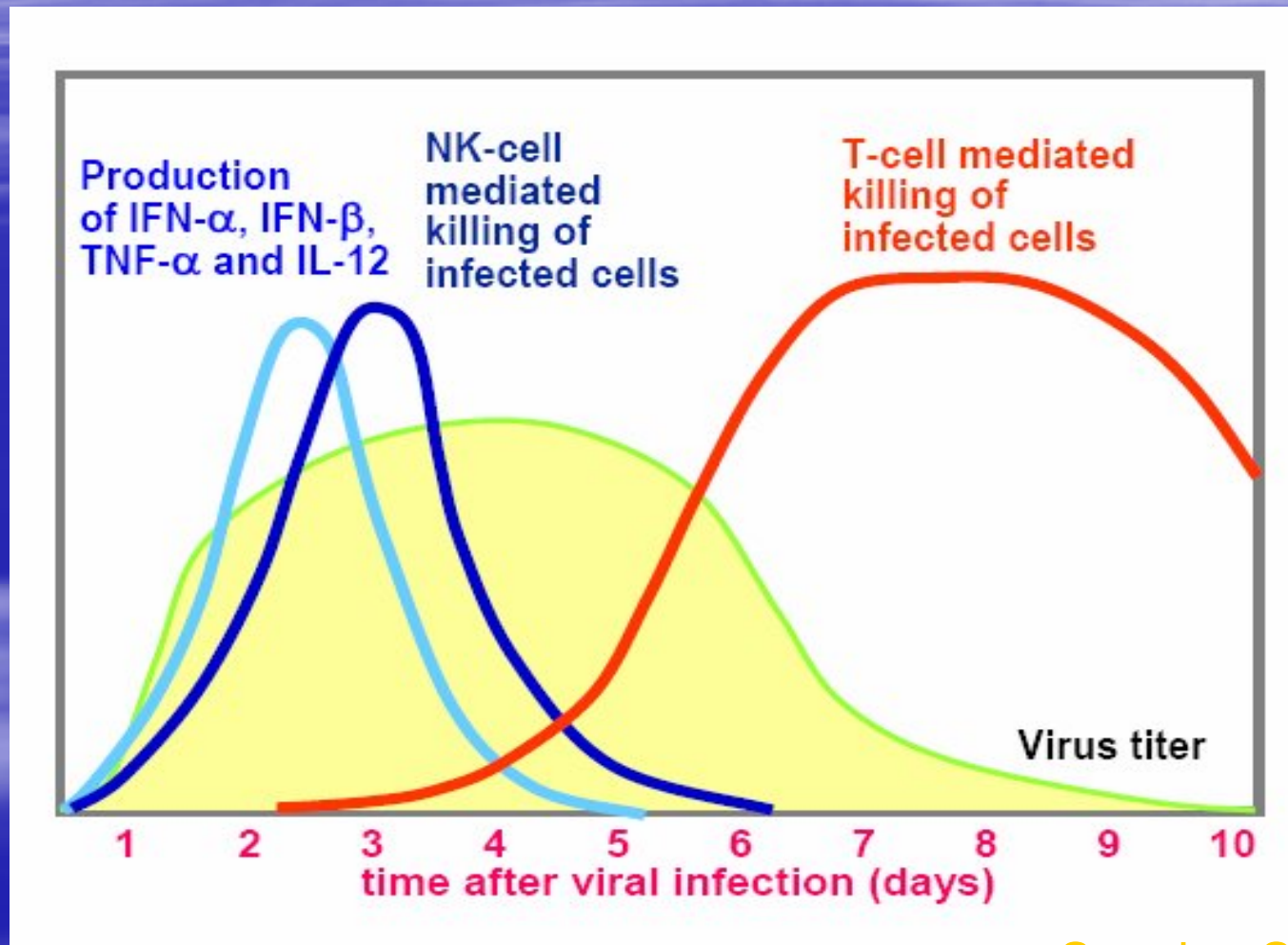
- Warts usually regress spontaneously in several months.
(1-6 months)
- The immune response to papillomaviruses associated with the spontaneous regression of warts and is mediated by both cellular and humoral immune responses.

How we fight the intruders

Sannipa S., 2006



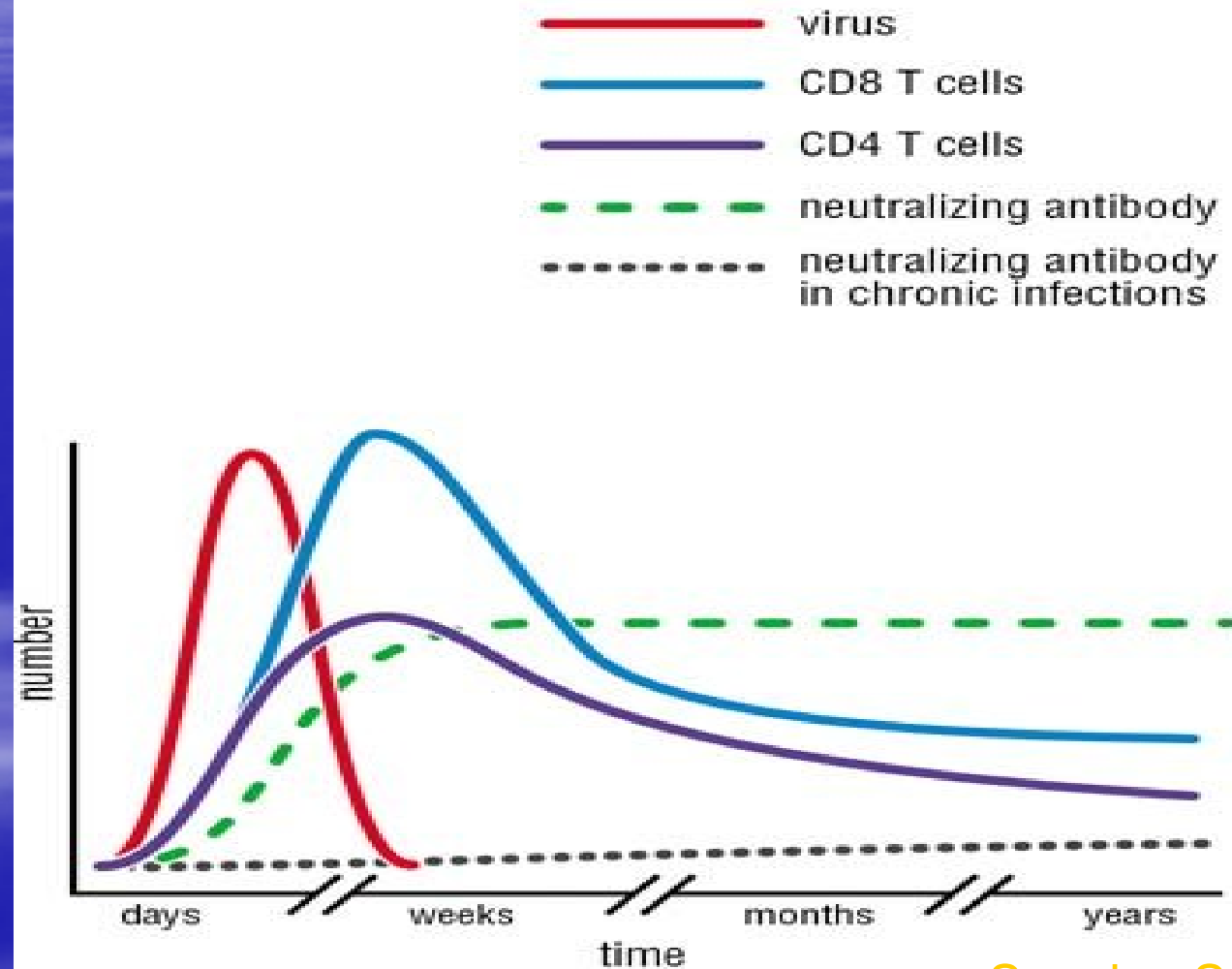
Host response to viral infection



Sannipa S., 2006

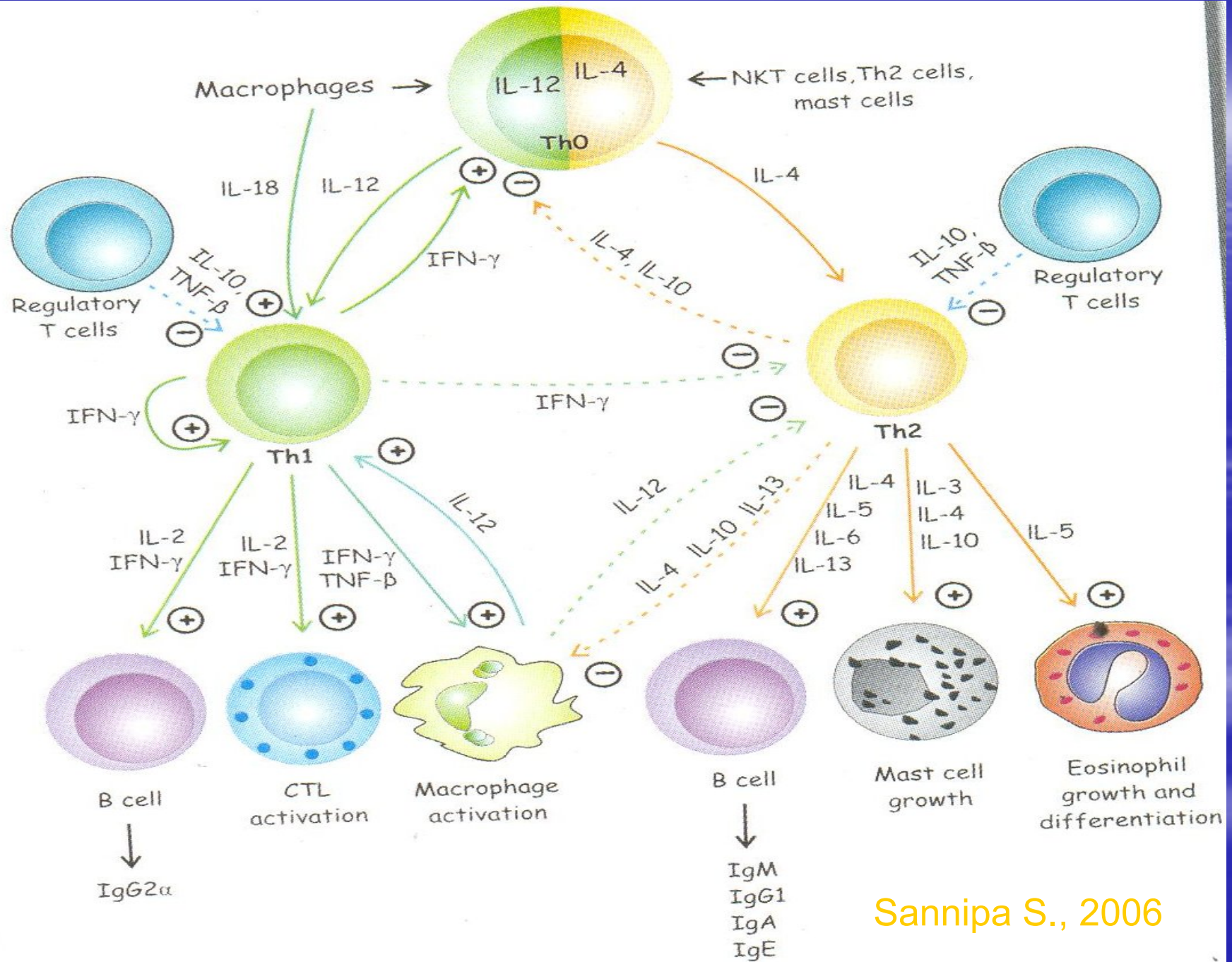
From **Immunity: The Immune Response in Infectious and Inflammatory Disease**

by DeFranco, Locksley and Robertson



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Sannipa S., 2006



Sannipa S., 2006

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Spontaneously Regressing Oral Papillomas Induce Systemic Antibodies That Neutralize Canine Oral Papillomavirus¹

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TABLE 1

Passive Immunization of Groups of Beagle Dogs That Received Purified Normal IgG (Group 1) or Hyperimmune Total Immunoglobulin (Group 2) or IgG Fractionated and Purified by Protein A (Group 3)

| Group | Antibody (mg/kg wt) | Donor of sera | Dog with warts/ dog challenged |
|---------|-------------------------|---------------|-----------------------------------|
| Group 1 | Purified IgG (28 mg/kg) | Naive | 4/4 |
| Group 2 | Total Ig (150 mg/kg) | Regressor | 0/4 |
| Group 3 | Purified IgG (20 mg/kg) | Regressor | 0/4 |



Regression of Canine Oral Papillomas Is Associated with Infiltration of CD4⁺ and CD8⁺ Lymphocytes

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Canine oral papillomavirus (COPV) infection is used in vaccine development against mucosal papillomaviruses. The predictable, spontaneous regression of the papillomas makes this an attractive system for analysis of cellular immunity. Immunohistochemical analysis of the timing and phenotype of immune cell infiltration revealed a marked influx of leukocytes during wart regression, including abundant CD4⁺ and CD8⁺ cells, with CD4⁺ cells being most numerous. Comparison of these findings, and those of immunohistochemistry using TCR $\alpha\beta$ -, TCR $\gamma\delta$ -, CD1a-, CD1c-, CD11a-, CD11b-, CD11c-, CD18-, CD21-, and CD49d-specific monoclonal antibodies, with previously published work in the human, ox, and rabbit models revealed important differences between these systems. Unlike bovine papillomavirus lesions, those of COPV do not have a significant gamma/delta T-cell infiltrate. Furthermore, COPV lesions had numerous CD4⁺ cells, unlike cottontail rabbit papillomavirus lesions. The lymphocyte infiltrate in the dog resembled that in human papillomavirus lesions, indicating that COPV is an appropriate model for human papillomavirus immunity. © 2001 Academic Press

Key Words: HPV; COPV; immunity; animal models; immunohistochemistry.

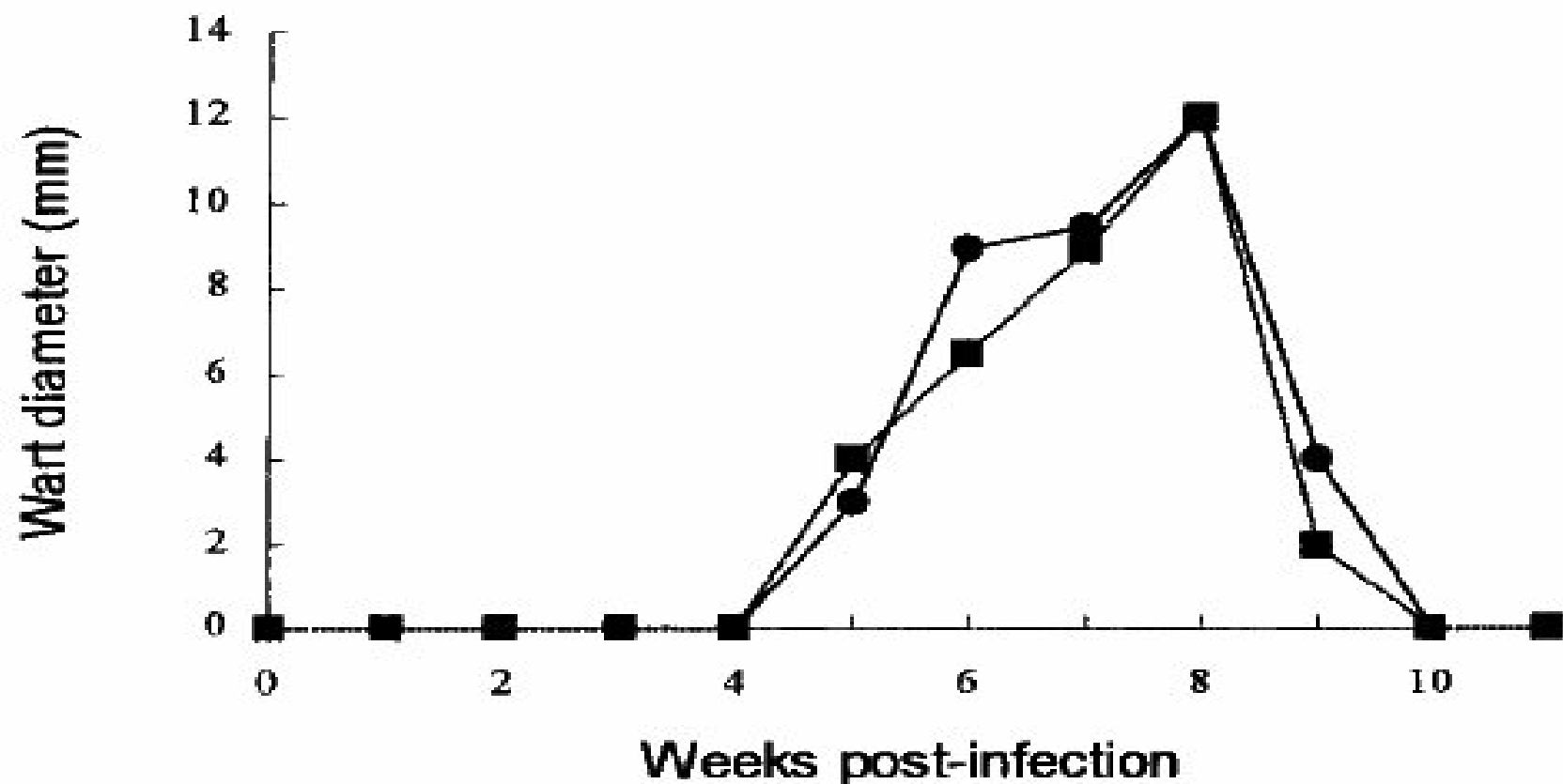
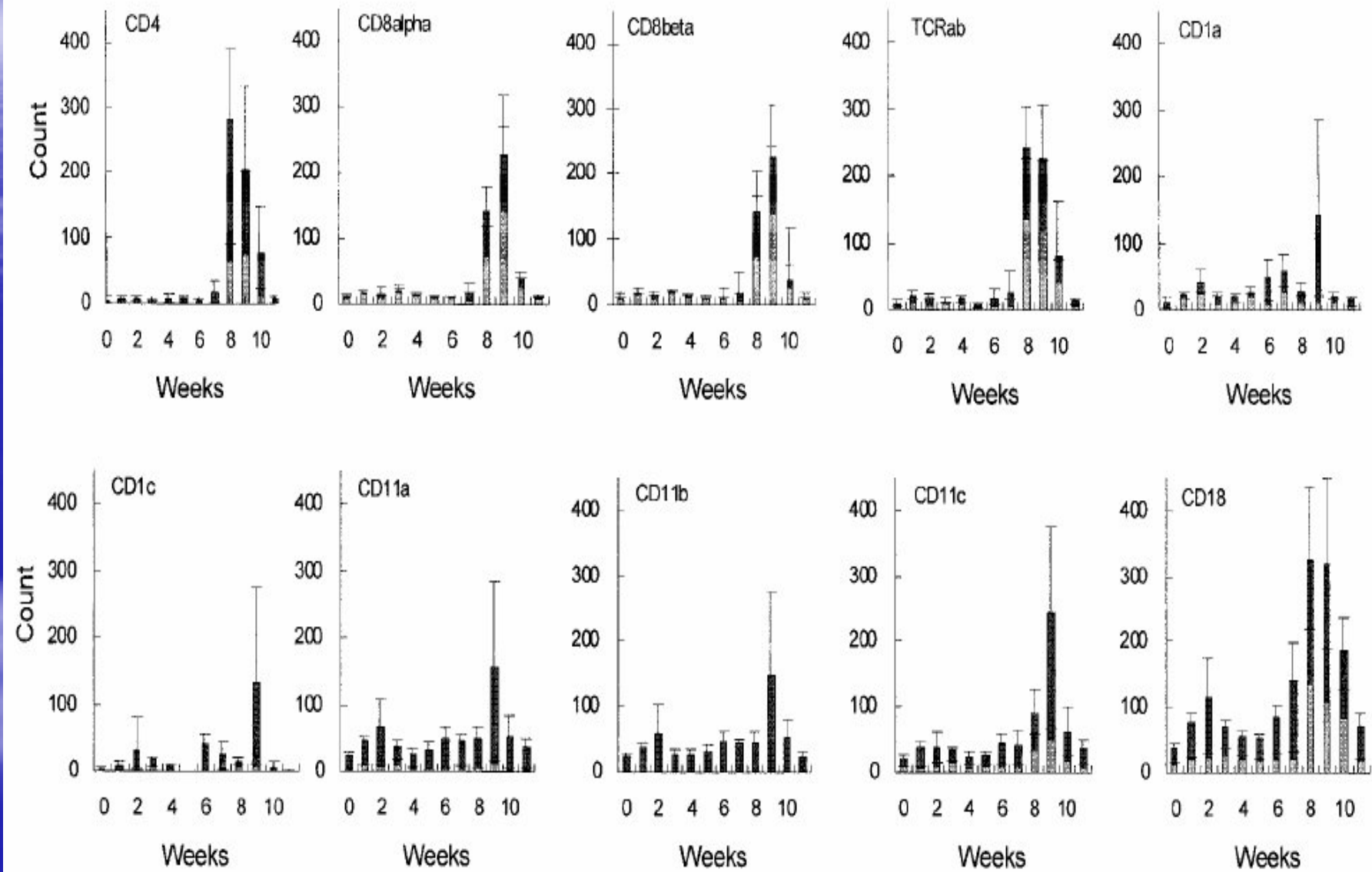


FIG. 1. Wart progression and regression after experimental infection. Infections in both animals showed a similar growth pattern. The maximum wart diameter was measured each week. Warts were visible 5 weeks after infection and grew rapidly to reach their greatest diameter at 8 weeks. Regression was rapid, with the lesions disappearing by 10 weeks postinfection. Infections in both animals showed a similar growth pattern.



Surgical Excision



Surgical Excision

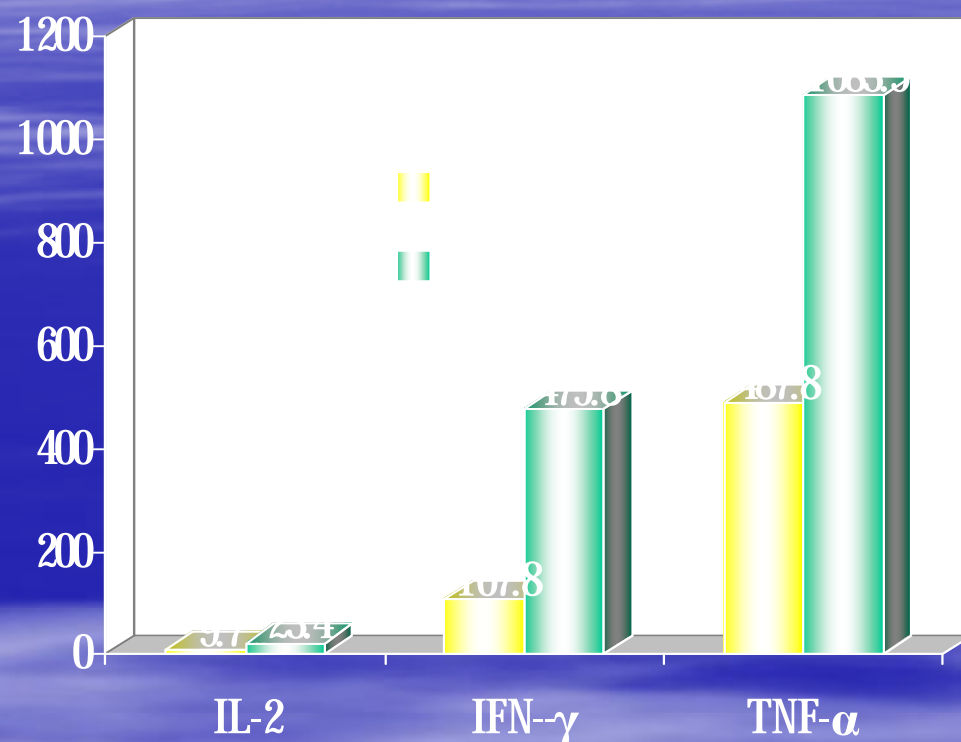
- Surgical removal is recommended if the wart are sufficiently, however because surgery in early growing stage of warts may lead to recurrence and stimulation of growth, the warts should be removed when near the maximum size or when regressing. (from The Merck Veterinary Manual)
 - The other technique :
 - Cryosurgery is the preferred treatment, two freeze-thaw cycles are used.

Immunotherapy

- Autogenous formalin-inactivated wart vaccines
 - Autogenous warts vaccine are considered of questionable value in treatment
 - Favorite in Cow (farm management)
 - Principle method :
 - Using 10-20% warts suspension in normal saline and inactivate virus by 40% formalin
 - Repeat dose are recommended.

Immunoenhancer

Effects of oral administration Beta Glucan on cytokines



| Cytokine | Control | WGP Beta Glucan |
|----------|----------------------|------------------------|
| IL-2 | 9.7+/- 0.5 pg/ml | 23.4 +/- 2.1 pg/ml* |
| IFN-γ | 107.8 +/- 8.4 pg/ml | 475.8 +/- 42.3 pg/ml* |
| TNF-α | 487.8 +/- 58.2 pg/ml | 1083.5 +/- 44.6 pg/ml* |

| Cytokines | Producing Cell | Target Cell | Function |
|-----------|-----------------------------------|---------------------------------|-----------------------------------|
| IL-2 | Th1 cells | Activated T & B cells, NK cells | Growth, proliferation, activation |
| IFN-γ | Th1 cells, Tc cells, NK cells | various | Viral replication |
| TNF-α | Macrophages, mast cells, NK cells | Tumor cells | Cell death |

Autogenous formalin-inactivated wart vaccines

เวชสารสัตวแพทย์ ปีที่ ๑ ฉบับที่ ๑ มีนาคม ๒๐๒๒

การใช้วัคซีนหูดรักษาโรคหูดในปากสุนัข

* ปราณี ตันตวินิช สพ.บ., M.S.

บทย่อ

รายงานการทดลองใช้วัคซีนที่ทำจากเนื้อเยื่อของตัวเอง (autogenous tissue vaccine) และชนิดที่ไม่ได้ทำจากเนื้อเยื่อของตัวเอง (non-autogenous tissue vaccine) เพื่อรักษาโรคหูดในปากสุนัข 10 ตัว ผลจากการทดลองปรากฏว่าถ้าใช้วัคซีนชนิดที่ทำจากเนื้อเยื่อของตัวเองจะได้ผลในการรักษา 100% แต่ถ้าใช้วัคซีนชนิดที่ไม่ได้ทำจากเนื้อเยื่อของตัวเองจะได้ผลในการรักษาเพียง 85% เท่านั้น

Autogenous formalin-inactivated wart vaccines

ตารางแสดงการใช้วัคซีนชนิดที่ไม่ได้ทำจากเนื้อเยื่อของตัวเอง

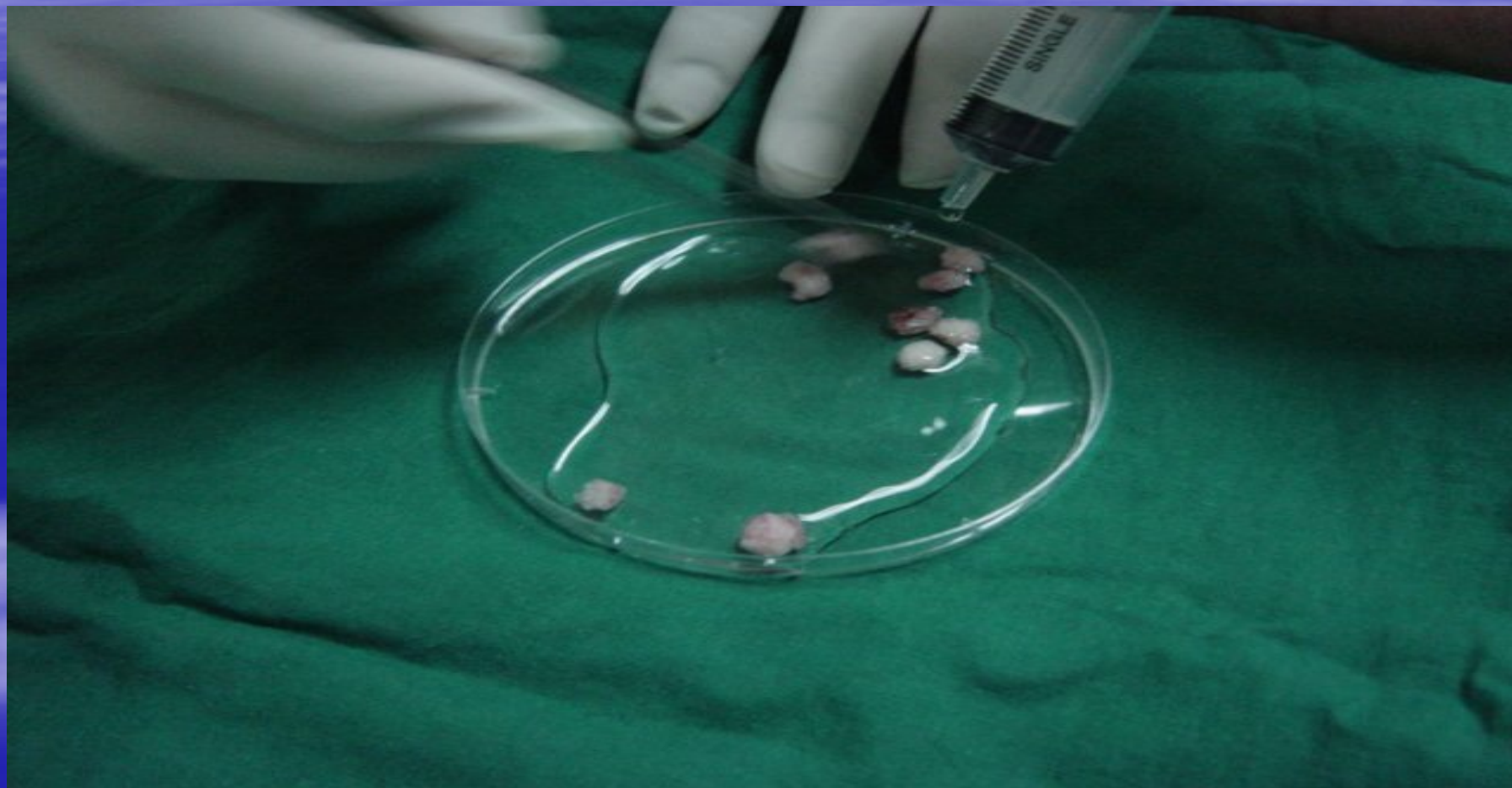
| วัคซีนชุดที่ 1. | | | | | วัคซีนชุดที่ 2. | | | | | |
|-----------------|--|-----|-----|---|-----------------|--|-----|-----|-----|---|
| สุนัข | ขนาดของทูต (ซม) เมื่อฉีดวัคซีนครั้งที่ | | | | สุนัข | ขนาดของทูต (ซม) เมื่อฉีดวัคซีนครั้งที่ | | | | |
| | 1 | 2 | 3 | 4 | | 1 | 2 | 3 | 4 | 5 |
| 1 | 0.3 | 0.4 | - | - | 1 | 0.5 | 0.5 | 0.5 | - | |
| 2 | 0.5 | 0.4 | 0.2 | 0 | 2 | 1.5 | - | - | - | |
| 3 | 0.5 | 0.5 | 0 | 0 | 3 | 0.6 | 0.8 | 1.2 | - | |
| 4 | 1.5 | 0.5 | 0 | 0 | 4 | 0.6 | 0.6 | 0.5 | 0.2 | 0 |
| 5 | 1.5 | 1.0 | 0 | 0 | 5 | 0.5 | 0.6 | 0.2 | 0 | |

- = ไม่มารับการรักษซ้ำ

0 = สัตว์หายจากโรค

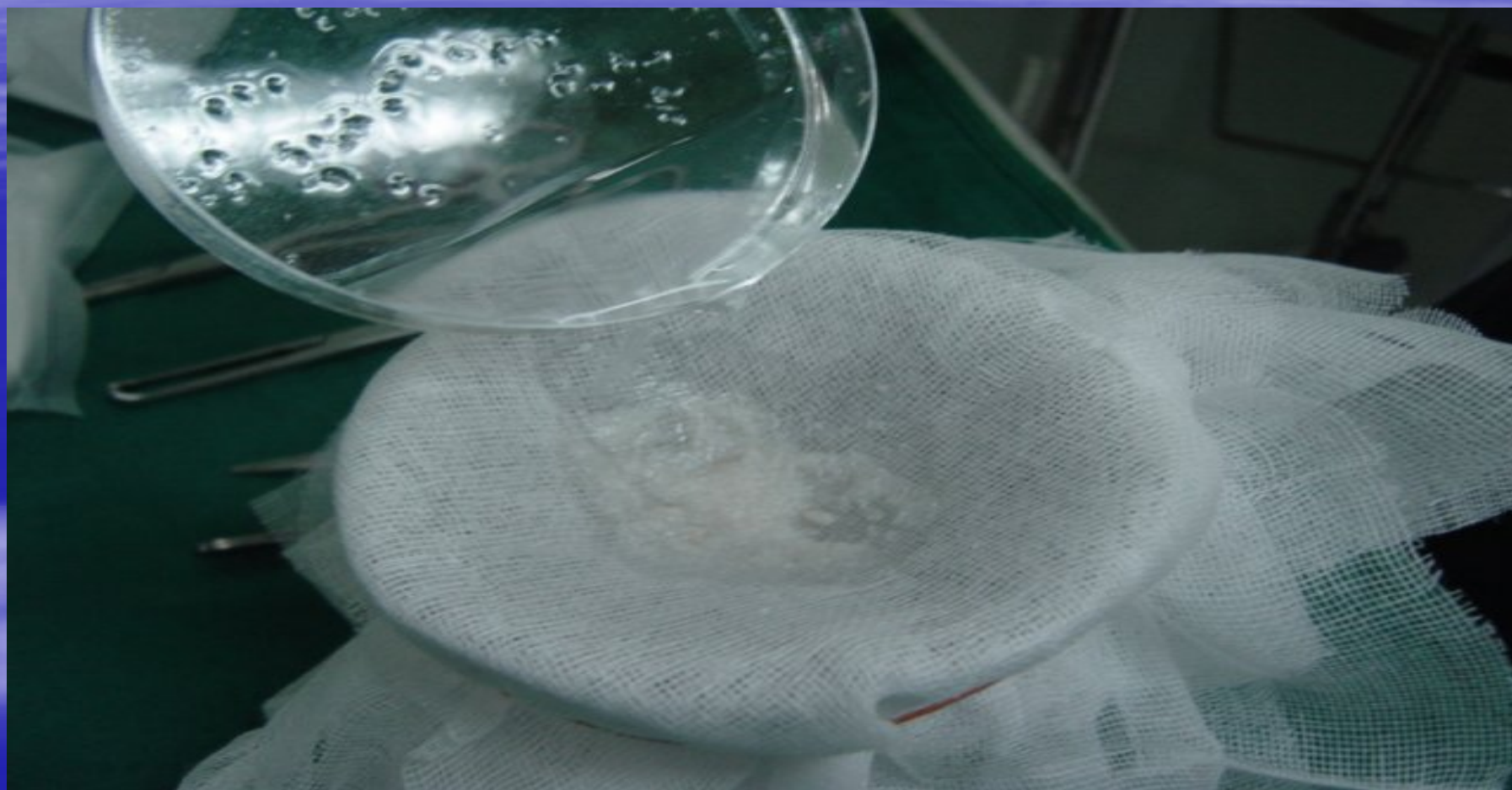
















At week 1



At week 1



At week 2



At week 3



At week 4



ขอขอบคุณ

- นายแบบบีเกิ้ลสุดหล่อ
- คณะสัตวแพทยศาสตร์ มหาวิทยาลัยเทคโนโลยีมหานคร
- สุนัขทาโร่ ที่เป็นแรงบันดาลใจเสมอมา

Thank you for you attention

