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大學部：小動物外科學及實習，小動物外科診療實習、臨床討論、獸醫腫瘤學、小動物生檢技術與判讀、獸醫細胞診斷學

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### 簡要學經歷及重要榮譽

- 國立中興大學獸醫學學士、通過國家獸醫師檢覈考試 1990
- 國立中興大學獸醫學碩士 1990~1992
- 國立中興大學附設獸醫教學醫院小動物科獸醫師 1994~1995
- 國立中興大學獸醫學系助教 1995~2000
- 國立中興大學附設獸醫教學醫院小動物外科主治獸醫師 1995~2000
- 國立中興大學獸醫學院獸醫學系講師 2000~2007
- 國立中興大學獸醫學院附設獸醫教學醫院小動物外科主任 2000-2004, 2006-2014
- 國立中興大學獸醫學院獸醫學系博士 2003-2007
- 日本東京大學農學部農學生命科學研究科特任准教授 2009August-October
- 國立中興大學獸醫學院獸醫學系副教授 2007-2011
- 國立中興大學獸醫學院獸醫學系教授 2011—
- 國立中興大學獸醫學院附設獸醫教學醫院 院長 2015—2018
- 國立中興大學獸醫學院附設獸醫教學醫院臨床腫瘤科主任 2015—

### 研究興趣及成果簡述

研究興趣：小動物臨床腫瘤學、小動物癌症治療模式、小動物外科學。

近期研究成果：

Mammary carcinoma is the most common malignant neoplasm in female dogs, with surgical removal being the most common treatment for dogs with most types of mammary tumors. Tumor stage, tumor size, and OHE status were significant prognostic factors associated with survival 2 years after surgery in dogs with malignant mammary tumors. Further, either dogs with tumors  $\geq 5$  cm in diameter or dogs with tumors present for  $> 6$  months, prior to surgery had a higher risk of having lymph node metastases. Percentages of estrogen receptor- (ER)  $\alpha$  and progesterone receptor (PR) positivities were higher in tumors that less than 5cm, clinical stage I, II or III, and without lymph node or distant metastasis. PR expression in tumor cells was significantly associated with one-year survival in dogs after surgical removal. Moreover, comparing to the dogs with ER $\alpha$ + / PR- malignant tumors, dogs with ER $\alpha$ + / PR+ malignant tumors had significantly higher survival rate. HER-2 protein overexpression was found in 30% of canine malignant mammary tumors. Dogs with HER-2- overexpressing malignant mammary tumors tended to have a higher survival rate than those which expressed a normal level of HER-2 within 2 years after surgery. The BRCA-2 protein interacts via the BRC (BRest Cancer) domain with RAD51. Exon 11 is the largest exon of the *BRCA2* gene and contains the region encoding eight repeats of the BRC domain. A single nucleotide polymorphism resulting in a lysine to an arginine substitution was identified in normal mammary glands. When compared with normal mammary gland, 19 sporadically distributed point

mutations were found in mammary tumors, including 68 % of missense and 32 % of silent mutations. High frequency of genetic variations in two codons was identified in 50% of cases, and two missense mutations were located at the fourth repeat of the BRC domains.

#### 代表著作

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2. **Chang, S-C.**, J-W. Liao, M-L. Wong, Y-S. Lai and C-I. Liu. **2007**. Mammary carcinoma with sebaceous differentiation in a dog. *Vet Pathol*, 44: 525-527. (SCI)
3. Hsu W-L, Huang H-M, Liao J-W, Wong M-L and **Chang S-C\***. **2009**. Increased survival in dogs with malignant mammary tumours overexpressing HER-2 protein and detection of a silent single nucleotide polymorphism in the canine *HER-2* gene. *Vet J*, 180: 116-123. (SCI) (Corresponding author)
4. Chang C-C, Tsai M-H, Liao J-W, Chan J P-W, Wong M-L and **Chang S-C\***. **2009**. Evaluation of hormone receptor expression for use in predicting survival of female dogs with malignant mammary gland tumors. *J Am Vet Med Assoc*, 235: 391-396. (SCI) (Corresponding author) (has been selected for inclusion in AVMA Ed for CE credit)
5. Hsu W-L, Huang Y-H, Chang T-J, Wong M-L, **Chang S-C\***. **2010**. Single nucleotide variation in exon 11 of canine BRCA2 in healthy and cancerous mammary tissue. *Vet J*, 184: 351-356. (SCI) (Corresponding author)
6. **Chang S-C**, Chen H-F, Chou M-H, Wang H-C, Su H-Y, Wong M-L\*. **2010**. Hemoglobin in normal and neoplastic canine mammary glands. *Vet Comp Oncol*, 8: 302-309. (SCI)
7. Hsu W-L, Lin H-Y, Chiou Shyan-Song, Chang C-C, Wang S-P, Lin K-H, Chulakasian S, Wong M-L, **Chang S-C\***. **2010**. Mouse mammary tumor virus-like nucleotide sequences in canine and feline mammary tumors. *J Clin Microbiol*, 48: 4354-4362. (SCI) (Corresponding author)
8. **Chang S-C\***, Liao J-W, Shyu C-L, Hsu W-L Hsu, Wong M-L. **2011**. Dermatophytic pseudo-mycetomas in four cats. *Vet Dermatol*, 22: 181-187. (SCI) (Corresponding author)
9. **Chang S-C**, Hsuan S-L, Lin C-C, Lee W-C, Chien M-S, Chen L-C, Wu J-H, Cheng S-J, Chen C-L, Liao J-W. Probable Blastomyces dermatitidis infection in a young rat. *Vet Pathol* 50: 343-246, 2013. (SCI)
10. Teng S-P, Hsu W-L, Chiu C-Y, Wong M-L, **Chang S-C\***. Overexpression of P-glycoprotein, STAT3, phospho-STAT3 and KIT in spontaneous canine cutaneous mast cell tumours before and after prednisolone treatment. *Vet J* 193: 551-556, **2012**. (SCI) (Corresponding author)
11. Chen Y-C, Hsu W-L, Chiu C-Y, Liao J-W, Chang C-C, **Chang S-C\***. Expression of MAGE-A restricted to testis and ovary or to various cancers in dogs. *Vet Immunol Immunop* 153: 26-34, 2013. (SCI) (Corresponding author)
12. Hung Y-P, Yang Y-P, Wang H-C, Liao J-W, Hsu W-L, Chang C-C, **Chang S-C\***. Bovine lactoferrin and piroxicam as an adjunct treatment for lymphocytic-plasmacytic gingivitis stomatitis in cats. *Vet J* 202 (1): 76-82, 2014. (SCI) (Corresponding author)
13. Feng Y-C, Chen K-S, **Chang S-C\***. Reconstruction with latissimus dorsi, external abdominal oblique and cranial sartorius muscle flaps for a large defect of abdominal wall in a dog after surgical removal of infiltrative lipoma. *J Vet Med Sci* 78 (11): 637-640, 2016 November. (SCI) (Corresponding author)
14. Chen Y-C, Liao J-W, Hsu W-L\*, **Chang S-C\***. Identification of the two KIT isoforms and their expression status in canine hemangiosarcomas. *BMC Veterinary Research* 12: 142-149, 2016 July (SCI) (Corresponding author)
15. Chen Y-C, Chen Y-Y, Liao J-W, **Chang S-C\***. Expression and prognostic value of c-met in canine mammary tumors. *Vet Comp Oncol* 16: 670-676, 2018. (SCI) (Corresponding author)