

各科使用手術室之次數及計畫名稱

科別	次數	手術或實驗名稱	使用動物
外科	20	評估 Fe ₃ O ₄ -PLGA Polymersomes 載體於小鼠 PAOD 模式的治療效果 Assessing therapeutic effect of Fe ₃ O ₄ -PLGA Polymersomes in mice PAOD model	小鼠
	4	探討 Tamoxifen 抗性在乳癌中的分子機制 Investigation about molecular mechanism of Tamoxifen resistance in breast cancer	小鼠
	211	住院醫師訓練-大鼠股動脈股靜脈顯微接合技術訓練	大鼠
	5	低溫療法對腦血管保護作用之機制探討:溫度如何調控 transient receptor potential 通道及鈣離子平衡而影響腦血管內皮細胞 A mechanistic study on the protective effects of hypothermia in cerebral vessels: how temperature affects cerebral endothelial cells through the regulations on transient receptor potential channels and calcium dynamics	大鼠
	7	低溫療法導致腦血管擴張之機制探討:溫度如何調控交感神經系統及腦血管內皮細胞引起之過極化反應 The effect of temperature on the transient receptor potential channels and calcium dynamics of cerebral endothelial cells	小鼠
	8	國產頂級人工骨之跨醫學中心/教學醫院推廣計畫 Domestically developed top-performance synthetic bone promotion program among MOHW-accredited medical centers/teaching hospitals	豬、兔
醫工所	12	The effect of after mechanical compression on the subsynovial connective tissue (SSCT) and median nerve within the rat's carpal tunnel	大鼠
	168	建構與評估非接觸式低頻超音波及防水奈米敷材對傷口癒合之功效 Develop and Evaluate the Effects of Noncontact Low-frequency combined nano-based wound dressing in Wound Healing application	大鼠
	7	發展具有診療合一多功能鐵鉑高分子複合奈米粒子及 2A3 抗體於癌症治療上的應用 Development Theranostic Multifunctional FePt-polymer Nanoparticle and 2A3 antibody in Cancer Therapeutic Application	小鼠
	100	The impact of shoulder continuous exercise on biceps long head tendon in rotator cuff tear –an animal model	大鼠
	46	中醫應用正骨紫金丹治療與促進骨折癒合之應用探討 Application of Traditional Chinese Medicine - Zheng Gu Zi Jin Dan Extract Powder - to Treat and Promote Fracture Healing	小鼠

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化工所	88	微針貼片施用輔助器之設計與開發 Design and development of microneedle applicators	小鼠、大鼠
	35	γ -聚麩胺酸微針應用於治療異位性皮膚炎之免疫調節機制及可行性評估 Immunomodulatory Mechanism and Feasibility of using Poly- γ -Glutamic Acid Microneedles for Treatment of Atopic Dermatitis.	小鼠、大鼠
	122	探討 NO 對於骨代謝的影響並開發可經皮緩釋 NO donor 之微針系統應用於雌激素缺乏之骨質疏鬆症治療	小鼠
	7	以微針傳遞具有光動力、光熱與化療藥物的微米粒子應用於表層皮膚癌的治療 Investigation on the differential cytotoxicity of a novel iron-core gold-shell nanoparticle towards osteosarcoma and its potential clinical application	小鼠
化學所	63	奈米囊泡模組控制釋放一氧化氮(nitric oxide)運用於心血管疾病治療-製備內含有 GSNO 與金奈米顆粒包埋的聚合物囊泡	小鼠
	78	藉由表面修飾啟動 Janus 奈米粒子不同面間的應答動作進行癌症細胞顯影及光動力治療的驅動 Surface modification exerts communication between two phases on Janus particles to light up cancer cells and activate photodynamic therapy	小鼠
	3	X 射線誘發螢光奈米材料治療深層胰臟癌 Nanoparticle Enhanced X-ray Therapy: Nano-Scintillation in Deep Seated Pancreatic Tumor	小鼠
生化所	25	多面向評估腫瘤代謝與微環境之重設在胰臟癌致病機轉與標靶治療藥物發展之角色 Multifaceted Evaluations of Tumor Metabolism and Microenvironment Reprogramming in the Pathogenesis and Development of Targeted Therapy in Pancreatic Cancer	小鼠
	17	標靶血行性癌細胞表面纖維蛋白之抗轉移疫苗 Anti-Metastatic Vaccines Targeting Pericellular Fibronectin on Circulating Tumor Cells	小鼠
	2	發展治療癌症之專一性組合蛋白藥物 Development of integrins-specific drug for cancer	小鼠
	38	Rab37 蛋白在肺癌轉移動物模式中之抑制角色	小鼠
	1	幹細胞在免疫調控環境下對眼表面黏膜血管新生及上皮細胞鱗狀化變性之作用	小鼠
	3	探討介白素二十調控軟骨細胞分化及在發炎性骨頭疾病中的角色 Study the role of IL-20 in regulating chondrocyte differentiation and inflammatory joint disease	小鼠

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	1	針對樹突狀細胞及腫瘤微環境誘發免疫性細胞死亡 Induce immunologic cell death through targeting dendritic cell and tumor microenvironment	小鼠
生理所	97	以人體試驗及小鼠模式探討調控心理壓力對於乳癌進展的影響及機制 Control of Psychological Stress on Breast Tumor Progress in Females	小鼠
	5	以小鼠探討雌激素對小鼠焦慮行為之影響 Control of estrogen on anxiety-like behavior in mice	小鼠
	8	雙特异性去磷酸酶 2 調控胰臟癌轉移及癌幹細胞增生之機制 Regulation of metastasis and cancer stemness by dual specificity phosphatase-2 in pancreatic cancer	小鼠
細胞解剖所	1	蟲草素調節小鼠萊氏腫瘤細胞凋亡過程與自噬作用中的機制研究	小鼠
	177	微型核糖核酸調節脂肪幹細胞之內皮與神經分化細胞的交互作用治療新生兒腦中風之新穎機制 Micro RNA Mediation of ASC-derived Endothelial-Neural Lineage Cell Interaction in Neonatal Hypoxic-Ischemic Brain injury	大鼠、小鼠
	115	新型不沾黏敷料於傷口癒合之研究 Testing anti-adhesive wound dressings using an in vitro wound model	小鼠、兔
	106	探討類毛囊球之促進毛髮再生能力 Evaluating the ability of hair sphere in promoting hair	小鼠
	4	運動減緩代謝症候群對海馬回神經可塑性與記憶之傷害: AMP 活化蛋白質激酶與星狀細胞-神經元乳酸穿梭的角色 Exercise mitigates metabolic syndrome-induced impairments in hippocampal neuroplasticity and memory: roles of AMP-activated protein kinase and astrocyte-neuron lactate shuttle	大鼠、小鼠
	81	微型核糖核酸於血流力學下調節內皮與平滑肌交互作用導致血管堵塞疾病之新穎機制 Micro RNA Mediation of Endothelial-Smooth Muscle Interaction in Vascular Occlusive Disease under Flow	大鼠、小鼠
臨醫所	1	探討去泛素化酶 USP5 在肺癌轉移的角色以及作為治療標的之可能性 The role of USP5 in lung cancer metastasis and its therapeutic implications	小鼠
	2	探討 PTX3 於粥狀動脈硬化的角色 The role of PTX3 in atherosclerosis	小鼠
	53	癌心計劃: 審視癌症化學治療對心臟的影響 Cardio-oncology: reappraisal the effect of cancer chemotherapy on heart function	小鼠

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50	探討在肺動脈高壓中 YAP/TAZ 扮演的角色與機制 The role of YAP/TAZ in pulmonary arterial hypertension	大鼠
9	暫時性腹壁閉合對腸壁水腫的影響 Impact of temporal abdominal wall closure on intestinal wall edema	小鼠
9	The role of phagocytic NADPH oxidase in the regulation of innate lymphoid cells in Dermatophagoides pteronyssinus-induced lung inflammation	小鼠
35	利用基因剔除小鼠來研究氧化還原失衡與 STAT1 蛋白在紅斑性狼瘡腎炎的致病機轉 To investigate the role of reactive oxygen species and STAT1 in the pathogenesis of lupus nephritis by studying gene knockout mice	小鼠
14	探討合併使用藥物與幹細胞治療在阿茲海默症的效用與機制之研究	小鼠
150	以調節關節的氧化還原恆定狀態來治療發炎性關節炎	小鼠
5	CTMP/AKT 訊息傳遞路徑促使三陰性乳癌轉移 CTMP/AKT signaling promotes metastasis in triple negative breast cancer	小鼠
3	PD-L1 不只是 Biomarker ! 探討肺癌細胞本身的 PD-L1 促進轉移的機轉, 及其與 TIP60-mediated 癌症 EMT 的相關性 The mechanism of PD-L1 expression in lung cancer cells contributing to metastasis, and its correlation with TIP-mediated with EMT	小鼠
153	癌細胞與免疫浸潤巨噬細胞交互作用對胰臟癌生成過程中的免疫調節之影響 Impact of the crosstalk between cancer cells and tumor associated macrophages on the immune modulation during pancreatic cancer progression	小鼠
7	糖尿病增加登革熱感染後疾病嚴重度及死亡率的免疫學原因研究 The immunopathogenesis underlying the higher severity and mortality in dengue virus infection in subjects with diabetes mellitus	小鼠
2	在腎臟損傷中粒線體的異常與代謝的轉變	大鼠、小鼠
1	The Study of Synaptic Plasticity in Cognitive Function and Social Behavior in Mice	小鼠

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	1	新穎蛋白參與額顳葉退化症之致病分子機制探討與其相關治療策略 Study of novel protein in the pathogenesis of frontotemporal lobar degeneration and its therapeutic potential	小鼠
	18	薑黃衍生物其製劑形式不同在阿茲海默氏症疾病動物模式的可行性評估 The potential of different formulation of curcumin derivatives in the treatment of Alzheimer's disease animal model	小鼠
	43	白血球產生的氧化壓力對肺部組織發炎和免疫發育的影響	小鼠
	2	以調整關節的氧化還原恆定狀態來治療發炎性關節炎 Treatment of Inflammatory Arthritis by Modulating the Redox Homeostasis in Joints	小鼠
	1	探討白血球中菸鹼腺嘌呤二核苷酸磷酸氧化酶在二異氰酸甲苯所造成的肺部發炎反應中扮演的角色	小鼠
藥理所	83	Discovery of novel neuroprotective agents by an image-based high content screening platform	小鼠
臨藥所	9	Indocyanine green 在大白鼠體內之藥物動力學與交互作用 Pharmacokinetics and Drug interactions of Indocyanine Green in Rats	大鼠
	10	Lurasidone 在大鼠體內攝入運輸與排除之藥物動力學特性	大鼠
	4	新型口服抗凝血劑 rivaroxaban 在肝與腦之動態：對藥物引起之肝與腦損傷及交互作用之啟示	大鼠
醫技所	2	以人類蛋白基因轉殖鼠研究腸病毒感染之致病機轉 Investigating the molecular roles and mechanisms of Galectin-3 on drug resistance in colon cancer	小鼠
	2	在困難梭狀桿菌感染中粒線體失能和發炎體活化的互動 The interplay of mitochondria dysfunction and inflammasome activation in Clostridium difficile infection	小鼠
	9	梭狀桿菌感染誘發發炎體活化之分子網絡 Molecular Network of inflammation activation in clostridial infection	小鼠
內科	9	Deletion of p47phox reduce the diabetic nephropathy in streptozotocin induced mouse	小鼠

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	13	利用基因消除小鼠及病人檢體來研究 galectin-3 分子於全身性紅斑性狼瘡之致病機轉及疾病活性的相關角色 Application of gene knockout mice and clinical specimens to study the related role of galectin-3 molecule in the pathogenic mechanism and disease activity of systemic lupus erythematosus	小鼠
	10	以臨床檢體、關節炎模型及 CRISPR 基因編輯工具分析類風濕性關節炎中滑膜纖維母細胞相關之長鏈非編碼核糖核酸的角色 Analyzing the role of synovial fibroblast-related long non-coding RNAs in rheumatoid arthritis by clinical samples, arthritis models and the CRISPR gene editing tool	大鼠
	4	大員油在大型動物實驗的安全性測試 Safety Evaluation of T-ACE Oil in large animals	豬
	203	評估大員油在肝動脈注射之安全劑量 The Safe Volume of T-ACE Oil for Hepatic Artery Injection	豬、兔子
	129	水膠在內視鏡止血的應用 Hydrogel in Endoscopic Hemostasis	豬
	2	探討 miR106b 在 sorafenib 治療無效肝癌的惡化進展機制 MiR-106b-mediated sorafenib refractory hepatocellular carcinoma progression	小鼠
骨科	40	改善現有使用在腕隧道症候群釋放後的玻尿酸劑型及探討不同分子量玻尿酸的功能作用 To improve the effect of presented hyaluronic acid in carpal tunnel symptoms release and investigate the functional role of different molecular weight of hyaluronic acid	大鼠
	2	在動物阿基里斯肌腱斷裂模型下，比較保守治療，經皮微創阿基里斯肌腱縫補及傳統縫補手術在力學上及步態分析上的變化 Biomechanical comparison and gait analysis for non-operated percutaneous repair and open repair of Achilles tendon rupture in a rat model	大鼠
	23	使用生物資訊方法收尋預測骨折未癒合的表現基因組 In search of a panel of fracture nonunion predicting genes using bioinformatics approaches	小鼠

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	28	以化學，機械及自然三方面探討黃韌帶肥厚之成因 To investigate the causes of ligamentum flavum hypertrophy from chemical, mechanical and aging	大鼠
	4	新穎鐵金奈米粒子對人類骨細胞與骨肉瘤間之選擇性毒殺機制及潛在臨床應用探討 Investigation on the differential cytotoxicity of a novel iron-core gold-shell nanoparticle towards osteosarcoma and its potential clinical application	小鼠
皮膚科	47	研發促進毛髮生長的彈力微光針儀器-II Develop a needle array and light therapy device to enhance hair growth - II	小鼠
眼科	4	探討凝血酶調節素在糖尿病眼角膜病變中的角色	小鼠
	2	研究以 doxycycline 治療增殖性玻璃體視網膜病變	小鼠
	1	探討在乾眼症中凝血酶調節素的效果 The effect of thrombomodulin in dry eye disease	小鼠
	1	ICG 之角膜內皮細胞毒性 Cytotoxicity of ICG to rabbit corneal endothelial cells	兔子
小兒科	1	保護腦部傷害之耐受性腦傷模型:利用缺血性預處理提升腦部耐受性的腦傷保護模型尋找對於缺血缺氧性腦傷具保護性的早期生物指標 The Tolerance model of attenuating brain injury: Characterizing the blood-brain early protective biomarker panels using ischemic preconditioning against hypoxic ischemia	大鼠
	3	第一型糖尿病與癲癇發生之相關性--探討 Insulin Receptor Substrate-1 (IRS-1) 在神經血管單位之表現對抽痙易受性的影響 The effect of type 1 diabetes mellitus (T1DM) on epilepsy occurrence- investigating the role of insulin receptor substrate-1 (IRS-1)- mediated signaling pathway in the neurovascular unit on seizure vulnerability	大鼠、小鼠
	6	探討第一型糖尿病之癲癇發作易感性之年齡依賴性—神經血管與 BBB 損傷之影響 The effect of the onset-age effect of T1DM on Seizure susceptibility- investigating the effect of neurovascular and BBB damage	大鼠

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	6	表現在腦血管細胞的 Insulin in Receptor Substrate-1 在以 pentylenetetrazole 誘發大鼠癲癇後對大腦傷害的影響 The role of insulin receptor substrate-1 in protecting vascular endothelial cells after	大鼠
	1	惡化腦部傷害之易感性腦傷模式：利用 LPS 誘發過敏反應合併缺氧缺血性腦傷模式尋找對於腦部具惡化性之血腦相關的早期生物指標	大鼠
婦產科	10	Inflammasome activation and cortisol metabolism activation in obese women with recurrent miscarriage	小鼠
	11	應用 Cardiac glycoside 在高表現 FXYD2 卵巢亮細胞癌之研究 Study of cardiac glycoside in FXYD2-elevated ovarian clear cell carcinoma	小鼠
家醫科	20	第三型分泌粒蛋白在胰島素抗性發生所扮演的角色及其相關機轉的探討 The investigation of the role secretogranin 3 in the development of insulin resistance and the related mechanisms	小鼠
	14	類纖維蛋白原 1 在妊娠糖尿病所扮演的角色 The role of fibrinogen-like protein 1 in gestational diabetes	小鼠
精神科	2	以丙戊酸誘導自閉症大鼠模式探討情緒腦發炎反應於社會情緒行為變異中之影響	小鼠
復健科	13	A 型肉毒桿菌素對軟骨細胞保護作用之機制	大鼠
急診部	29	巨噬細胞遷移抑制因子在敗血症導致腎損傷的致病角色 The pathogenic role of macrophage migration inhibitory factor in endotoxemia-induced kidney injury	小鼠
環醫所	1	膳食纖維對腸炎引發之大腸癌的作用 Effects of dietary fiber diet on colitis-associated colorectal cancer	小鼠
	19	A new computerized nanoparticle aerosol generation and inhalation exposure system: system suitability test and cardiopulmonary inhalation toxicity study	大鼠
	11	以金屬奈米物質誘發之細胞自噬作用及其調控機制評估可能的發炎與奈米毒性效應 The role of autophagy and its related regulatory pathways induced by metal-based nanoparticles in inflammation and nanotoxicity	小鼠

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	49	Comparative study of carbon nanotube and silica induced pulmonary fibrosis as a rodent model for human idiopathic pulmonary fibrosis	大鼠、小鼠
	1	睡眠剝奪引發多種疾病的發生之危害風險	大鼠、小鼠
口醫所	4	鈦金屬表面製備高強度碳化鈦奈米管陣列結構與生物功能性修飾之研究	兔
	2	以粒線體功能調控為基礎之促進人類健康與疾病控制策略的開發 Development of mitochondria function modulation based strategies for improvement of human health and disease	小鼠
	151	抗菌型可吸收性鈣基骨取代物量產、上市申請及推廣之延續計畫 Mass production, registration and promotion of anti-bacterial bioresorbable calciumbased bone substitutes—a continuation project	大鼠、小鼠、豬、兔子
	33	Preliminary study of new cushioned dental implant	大鼠、小鼠、兔子
	3	高強度碳化鈦奈米管陣列結構製備與生物功能性研究 The development of high-strength TiC nanotube array for clinical application	兔
	3	Gelsolin 參與頭頸癌化療藥物敏感性的調控機制以及後續抗藥性分子診斷及抗抗藥性治療的奈米劑型開發 Investigation of gelsolin pathways in cancer chemoresistance and development of associated biomarkers based molecular diagnostics and nano therapeutics	小鼠
微免所	4	細胞自噬誘發劑抑制腫瘤之生成及轉移 Autophagy inducer inhibits tumor formation and metastasis	大鼠
	7	開發困難梭狀桿菌感染之新穎黏膜疫苗 Development of a novel mucosal vaccine for the prevention of Clostridium difficile infections	小鼠
微免所	21	To study the role of autophagy-regulated secretion of galectin-1 by tumor-associated macrophages in sorafenib resistance of hepatocellular carcinoma	小鼠
	4	Novel therapeutic strategy for Clostridium difficile infection: structural insight into the sortase enzyme mediating the surface proteins display	小鼠

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	6	Development of new dengue virus mouse models for disease pathogenesis and therapeutic strategies	小鼠
	3	Identification of integrin-linked kinase is an essential host factor	小鼠
分醫所	17	促癌蛋白 TIAM2S 調節腦中小膠質細胞活化、血清素平衡以及神經退化之分子機制:人類 TIAM2S 基因轉殖鼠作為全新老化相關神經退化性動物模型的探索 Molecular Mechanisms of Oncoprotein TIAM2S-mediated Microglial activation, Serotonin Homeostasis and Neurodegeneration in Brain: Exploration of human TIAM2S Transgenic Mice Use as A New Animal Model of Progressive Age-related Neurodegenerative Disease	小鼠
	6	口腔癌前疾病惡轉與唾液微生物相關聯性探勘 Association of salivary microbiota with malignant transformation of oral verrucous hyperplasia and its clinical application	小鼠
	9	利用三維環境與內皮細胞的器官異質性研究參與調控食道鱗狀細胞癌器官轉移特異性的信號軸與其臨床應用潛力 Exploit three-dimensional environment and endothelial heterogeneity for identification of organ-specific metastasis signaling axis(s) of esophageal squamous cell carcinoma	小鼠
資訊工程系	2	探討糖尿病軟組織之超音波診斷與治療技術：由細胞到小動物	大鼠、小鼠
動物中心	57	實驗動物中心衛兵鼠及健康監測計畫 Sentinel Rodents and health Monitoring Program in the laboratory Animal Center	大鼠、小鼠
	242	小鼠胚之冷凍、淨化復育及體外受精 Cryopreservation, recovery and vitro fertilization of mouse	小鼠
傷口與再生修復中心	5	科技部計畫-調控傷口癒合之內源性重編程途徑以增強皮膚再生能力與防止疤痕形成 Manipulation of identified endogenous reprogramming pathways during full-thickness wound healing to enhance skin organ regeneration and prevent scarring.	豬、小鼠
過敏及臨床免疫中心	2	卡洛塔妮全脂羊奶粉對預防過敏氣喘小鼠之功效評估 The evaluation of asthma effect of Karihome® goat milk in mice.	小鼠
合計	3643		