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TTO NEWSLETTER

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Success Story
Fighting eye tumors with light (research project led by Dr Wang Weiping)
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SUCCESS STORY

Fighting eye tumors with light

A new and less invasive treatment for serious eye disease uses light to release drugs into the treatment area and halt tumor growth.

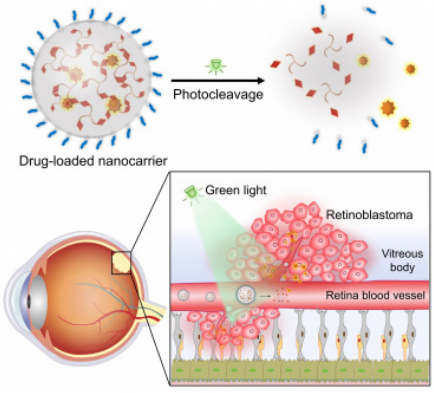
"Using light to trigger the intraocular drug release may become another choice for RB treatment"

Dr. Weiping Wang
Assistant Professor of Department of Pharmacology and Pharmacy, Li Ka-Shing Faculty of Medicine, The University of Hong Kong.

Retinoblastoma (RB) is a severe eye disease that can cause loss of vision or even death. It has been identified as the most common primary pediatric intraocular tumor. Currently, the intravitreal administration of drugs is widely used in clinics. However, this invasive treatment is unpleasant for patients and can lead to side effects such as ocular hemorrhage, endophthalmitis and retinal detachment. It is difficult to administer drugs into the eye via a less invasive manner such as intravenous injection, due to the risk of nonspecific drug absorption by other organs and the existence of the blood-retinal barrier. Now, a new solution has been invented.

"Using light to trigger the intraocular drug release may become another choice for RB treatment, "says Dr. Weiping Wang, Assistant Professor of Department of Pharmacology and Pharmacy, Li Ka-Shing Faculty of Medicine, The University of Hong Kong.

Dr. Wang and his team have been working to develop stimuli-responsive systems for targeted drug delivery, particularly light-responsive drug delivery systems. During the course of their work, they found that light-triggered intraocular drug release after intravenous injection of the drug-loaded photoresponsive nanocarriers can result in efficient drug accumulation at the retinoblastoma site and suppress tumor growth. The strategy is mainly based on the efficient extravasation of the released hydrophobic drugs in the retina blood vessels to overcome the inner blood-retinal barrier that nanocarriers encounter.



The light-responsive system has demonstrated strong potential and advantages during studies. The nanocarrier is simple and stable, allowing a series of hydrophobic chemotheraputics, such as doxorubicin and paclitaxel, to be encapsulated with high encapsulation efficiency. By triggering the photocleavege of the assembling units, drugs can be released and kill cancer cells upon light irradiation.

The team has already completed the in vivo evaluation on orthotopic retinoblastoma-bearing mice. This light-responsive system also has the potential for treating other eye diseases (e.g., age-related macular degeneration, polypoidal choroidal vasculopathy, choroidal melanoma) and other types of tumors (e.g., head and neck cancers, skin cancers).

Dr Wang Weiping (second from left, front row) and his research team.

Dr. Wang and his team members Mr. Kaiqi Long and Dr. Weirong Kang, won a gold medal for this invention at the Special Edition 2022 Inventions Geneva Evaluation Days. The event was hosted by The International Exhibition of Inventions of Geneva (IEIG), which is one of the most important global annual events devoted exclusively to inventions.

The TTO team was able to assist Dr. Wang and his team with the patent application, provide support with their application and participation in the IEIG 2022, and showcase their work at Innocarnival 2022 as one of the excellent inventions from HKU.

LATEST PATENTS FILINGS

25 Mar 2022 - 7 May 2022

IP01076 Prof. YAM Vivian Wing-Wah (PCT filed on 25 Mar 2022)
Luminescent Gold(Iii) Compounds with Thermally Activated Delayed Fluorescence (Tadf) and Thermally Stimulated Delayed Phosphorescence (Tsdp) Properties for Organic Light-Emitting Devices and Their Preparation

IP00884 Prof HUI Shu Yuen Ron (US national phase application filed on 28 Mar 2022)
A Wireless Battery Charging System and Method for Battery Charging and Handshaking

IP00862 EP regional phase entry on 30 Mar 2022
Prof WONG Kin Yip Kenneth; EEE; Dual-Color Low Noise Fiber Laser System for Pump-Probe Applications

IP00887 CN national phase entry on 31 Mar 2022, US national phase entry on 4 April 2022
Prof. Ron Hui; EEE; Current-Limiting Driver Circuit and Method

IP01172 USP filed on 4 April 2022
Dr ZHANG Fu; ME; A method for detecting dynamic events from sequential point scans

D00002 Design registered in HK on 8 Apr 2022
Dr. BRIDGES, Susan; Hybrid Learning Mobile Desk Console

SIRI00042 PCT filed on 2 Apr 2022
一種基於LiDAR點雲和BIM碰撞類比的室內三維數位無障礙地圖生成方法

SIRI00043 PCT filed on 2 Apr 2022
Dr. XUE Fa; 一種基於LiDAR點雲和BIM碰撞類比的室內三維數位無障礙地圖生成方法

SIRI00044 PCT filed on 2 Apr 2022
Dr. XUE Fa; 一種基於BIM和視頻監控的博物館參觀分析的方法和系統

IP01037 USR filed on 8 Apr 2022
Dr. TUN Hein Min; Public Health; Fecal Microbial Biomarkers for Non-Alcoholic Fatty Liver Disease

IP00874 CN national phase filed on 13 Apr 2022
Prof CHOY Chik Ho; EEE; Integration of Metal Nanowire Network into Conducting Polymers

IP01077 PCT filed on 14 April 2022
Dr. LIN Xiang; Chinese Medicine; 一種組合物在製備預防、緩解、治療乾燥綜合征方面的藥物中的應用

IP00892 CN national phase filed on 15 Apr 2022, US national phase filed on 18 Apr 2022
Prof TU Wenwei; Paediatrics & Adolescent Medicine; Methods to Prepare V-T Cells Derived Exosomes for Treatment of Epstein-Barr Virus-Associated Cancers

IP00874 US national phase filed on 18 Apr 2022
Prof CHOY Chik Ho; EEE; Integration of Metal Nanowire Network into Conducting Polymers

IP01153 USP filed on 19 Apr 2022
Dr. LU Peng; A novel aerial continuum manipulator with cable slack prevention for versatile manipulation tasks

IP00862 CN & US national phase filed on 22 Apr 2022
Prof WONG Kin Yip Kenneth; Dual-Color Low Noise Fiber Laser System for Pump-Probe Applications

IP01201 CN filed on 21 Apr 2022
Prof HUANG Mingxin; High manganese austentic stainless steel with superior corrosion resistance and its application in water Splitting

IP00992 EP filed on 25, CN/HKS/USR filed on 26 Apr 2022
Dr. SU, Yuxiong; Development of a Novel Fibula Malleolus Cap: The Last Piece of the Puzzle in Computer-Assisted Jaw Reconstruction

IP01143 USP filed on 27 Apr 2022
Prof NG LUI Oi Lin, Irene; The characterization of LANCL1 and use of LANCL1 antibodies for treatment of liver cancer

IP01158 USP filed on 28 Apr 2022
Prof WU Ed Xuekui; Systems and Methods for Fast and Calibrationless Magnetic Resonance Image Reconstruction

IP01177 PCT filed on 29 Apr 2022
In the name of Centre for Garment Production Limited, Tohoku University

IP01181 USR filed on 3 May 2022
Dr. MA Stephanie Kwai Yee; Ifenprodil as an adjunct for treatment of liver cancer

IP00887 EP regional phase filed on 4 May 2022
Prof. Ron Hui; Current-Limiting Driver Circuit and Method

IP01043 USR filed on 6 May 2022, CN filed on 7 May 2022
Prof. WANG Liqui; pH-responsive smart anti-pathogen coatings that controlled repel and inactivate viruses and

RECENT HIGHLIGHTS

This month we are delighted to announce the names of the TSSSU@HKU awardees for 2022-2023! Twenty technology start-up companies were awarded a total of HK$8 million for from the Technology Start-up Support Scheme, with funding provided by the Innovation and Technology Commission (ITC). Each awardee receives between HK$100,000 and HK$1.5 million each year for up to three years.

We send our warmest congratulations and best wishes to all of this year's awardees!

Click *here* to find the full list of awardees and read more about their activities.

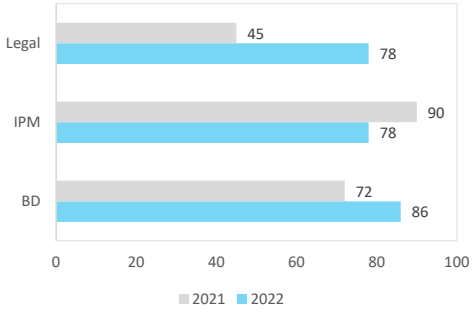
PROGRESS UPDATES

The BD Team handled 86 ongoing cases in April, a sizeable increase from the 72 handled in April 2021. All areas of activity were busier compared to last year.

The IPM Team has seen similar levels of activity to last year. The team received 12 IDFs in April and handled 35 office action matters.

The Legal Team opened 71 new cases and completed 78 cases in April, up from 56 and 45, respectively, in 2021. Growth in tenders was particularly noteworthy at 27, up from 2 last year.

Total Engagements and Handling Cases



TECHNOLOGY COMMERCIALISATION

Top 3 revenue-booked IPs in April 2022

Item	IP Type	PI	Faculty
Sewage surveillance for COVID-19: testing methods, classification scheme, data interpretation and use	HK Patent No. HK30044162 PCT Application No. PCT/CN2021/074675 PRC Application No. 202110495376.4	Prof Tong Zhang	Engineering
A feasibility study of the application of land readjustment and land bond concepts on Tso Tong agricultural land in selected sites in Hung Shui Kiu core planning areas	Contract Research/ Consultancy	Prof KW Chau	Architecture
e-Form	Copyright/ Know-how	-	Versitech Limited

TRANSFERRING YOUR NEW TECHNOLOGIES INTO BUSINESS OPPORTUNITIES

POLICY STIPULATION

The latest policy stipulates that the net receipts arising from the exploitation of an Invention are shared among the University, the relevant faculty/department and the inventor(s) in the ratio of 1/3 : 1/3 : 1/3. It aims to encourage the researchers at HKU not only to excel in academic performance but also to apply their technology for the benefits of mankind with an impressive reward.

HOW TO APPLY:
4 PHASES FOR RESEARCH PROJECTS

Phase 1: Initial project negotiation

1. PI will negotiate with their collaborator(s) and confirm a project proposal which includes the scope, budget and duration of the project.
2. PI will negotiate with their collaborator(s) and prepare a draft agreement (Agreement templates are available at the website of the Research Services (RS): http://www.rss.hku.hk/contracts/contractresearch/templates).

Phase 2: Endorsement from department/ faculty

3. PI will submit the project proposal, the draft agreement, and the information form/ grant application form to their department/ faculty to seek an approval (The information form for research/consultancy agreements is available at: http://intraweb.hku.hk/local/rss/tto/researchor-consultancy-agreements-form.doc).
4. After obtaining the approval, PI will submit the project proposal, the draft agreement, and the information form/grant application form to the Research Service (RS).

Phase 3: Financial legal/IP review

5. The RS will distribute the project proposal and the draft agreement to the Finance and Enterprises Office (FEO) for financial review and to the Technology Transfer Office (TTO) for legal review.
6. If there is any financial/legal issue, the FEO/TTO will inform PI through the RS. PI will negotiate with their collaborator(s) on the financial/legal issue until it is settled.

Phase 4: Signature and document archiving

7. After consolidating the settled project proposal and the agreement, the RS will proceed to the signature process.
8. After duly performing the signature process, the RS will assign the RCGAS number(s) for opening the project account(s)

ABOUT US

About HKUTTO
The Technology Transfer Office (TTO) is committed to maximising the impact of research through technology transfer at both the institutional and industrial levels. TTO works closely with researchers at HKU to commercialise their inventions through professional consultation on business development, legal advice and assistance, as well as patent application filings. Your inventions will not benefit society unless they are mass produced.

About Versitech
Versitech Limited is the commercial arm of HKU. Versitech negotiates, executes and manages commercial business contracts and agreements on behalf of the University.

CONTACT US

Acting Director
Prof. Max Shen
Email: maxshen@hku.hk

Deputy Director
Mr. Hailson Yu
Email: hailson@tto.hku.hk

Deputy Director
Dr. Shawn Zhao
Email: xzhaogs@hku.hk

Associate Director (Intellectual Property)
Dr. Yahong Li
Email: yali@hku.hk

Senior Legal Counsel
Ms. Vivian Ng
Email: vivian@tto.hku.hk

Manager, Business Development (Science & Engineering)
Ms. Laura Yu
Email: Laura@tto.hku.hk

Senior Manager, Business Development (Biotechnology)
Dr. Katherine Gan
Email: katherine@tto.hku.hk

Finance and Administration Manager
Ms. Joanne Cho
Email: joanne@tto.hku.hk

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Feel free to send us your story at tto_marketing@tto.hku.hk