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Lawrence Leung

Maureen Lyles D'Ambrogio Professor in the School of Medicine

Medicine - Hematology

CLINICAL OFFICES

- **Hematology Clinic**

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Bio

CLINICAL FOCUS

- Cancer > Hematology
- Hematology

ACADEMIC APPOINTMENTS

- Professor, Medicine - Hematology
- Member, Cardiovascular Institute

ADMINISTRATIVE APPOINTMENTS

- Senior Associate Dean for Veterans Affairs, School of Medicine, (2006- present)
- Chief of Staff, VA Palo Alto Health Care System, (2006- present)

BOARDS, ADVISORY COMMITTEES, PROFESSIONAL ORGANIZATIONS

- Editor-in-Chief, Hematology, UpToDate (2008 - present)
- Member, Association of American Physicians (2004 - present)
- Member, American Society for Clinical Investigation (1987 - present)

PROFESSIONAL EDUCATION

- Board Certification: Hematology, American Board of Internal Medicine (1980)
- Residency: New York Presbyterian Cornell Campus Internal Medicine Residency (1978) NY

- Internship: New York Presbyterian Cornell Campus Internal Medicine Residency (1976) NY
- Fellowship: New York Presbyterian Cornell Campus Hematology Oncology Fellowship (1981) NY
- Medical Education: Columbia University Vagelos College of Physicians and Surgeons Registrar (1975) NY
- Board Certification: Internal Medicine, American Board of Internal Medicine (1978)
- Board Certification: Medical Oncology, American Board of Internal Medicine (1981)

Research & Scholarship

CURRENT RESEARCH AND SCHOLARLY INTERESTS

Our long-term interest is to have a better understanding of the natural antithrombotic pathways and the pathophysiology of vascular thrombosis. We have focused on thrombin, the key enzyme in the blood clotting cascade. Using a library of thrombin mutants generated by site-directed mutagenesis, we have mapped the critical functional sites on thrombin for its interactions with its diverse substrates. We are studying a thrombin-activatable carboxypeptidase that plays a key role in the physiologic regulation of thrombin''s pro-thrombotic and pro-inflammatory properties. Our goal is to develop new antithrombotic agents and devise new diagnostic tests for vascular thrombotic disorders.

Publications

PUBLICATIONS

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  2019; 14 (4): e0214938
- **Decoding the Genomics of Abdominal Aortic Aneurysm.** *Cell*
  Li, J., Pan, C., Zhang, S., Spin, J. M., Deng, A., Leung, L. L., Dalman, R. L., Tsao, P. S., Snyder, M.
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  Zhao, L., Yamaguchi, Y., Ge, X., Robinson, W. H., Morser, J., Leung, L. L.
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- **Men and Women Differ in the Biochemical Composition of Platelet-Rich Plasma** *AMERICAN JOURNAL OF SPORTS MEDICINE*
  Xiong, G., Lingampalli, N., Koltsov, J. B., Leung, L. L., Bhutani, N., Robinson, W. H., Chu, C. R.
  2018; 46 (2): 409–19
- **Prochemerin cleavage by factor XIa links coagulation and inflammation** *BLOOD*
  Ge, X., Yamaguchi, Y., Zhao, L., Bury, L., Gresele, P., Berube, C., Leung, L. L., Morser, J.
  2018; 131 (3): 353–64
- **Dynamic and tissue-specific proteolytic processing of chemerin in obese mice.** *PloS one*
  Zhao, L., Yamaguchi, Y., Shen, W., Morser, J., Leung, L. L.
  2018; 13 (8): e0202780
- **Chemerin Activation in Human Obesity** *OBESITY*
  Chang, S., Eisenberg, D., Zhao, L., Adams, C., Leib, R., Morser, J., Leung, L.
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- **Plasmin as a complement C5 convertase.** *EBioMedicine*
  Leung, L. L., Morser, J.
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- **Thrombin Cleavage of Osteopontin Disrupts a Pro-chemotactic Sequence for Dendritic Cells, Which Is Compensated by the Release of Its Pro-chemotactic C-terminal Fragment** *JOURNAL OF BIOLOGICAL CHEMISTRY*
  Shao, Z., Morser, J., Leung, L. L.
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- **Thrombin cleavage of osteopontin disrupts a pro-chemotactic sequence for dendritic cells, which is compensated by the release of its pro-chemotactic C-terminal fragment.** *journal of biological chemistry*
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- **Carboxypeptidase B Serves as a Protective Mediator in Osteoarthritis** *ARTHRITIS & RHEUMATOLOGY*
  Lepus, C. M., Song, J. J., Wang, Q., Wagner, C. A., Lindstrom, T. M., Chu, C. R., Sokolove, J., Leung, L. L., Robinson, W. H.
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- **Targeting complement component 5a promotes vascular integrity and limits airway remodeling.** *Proceedings of the National Academy of Sciences of the United States of America*
  Khan, M. A., Maasch, C., Vater, A., Klussmann, S., Morser, J., Leung, L. L., Atkinson, C., Tomlinson, S., Heeger, P. S., Nicolls, M. R.
  2013; 110 (15): 6061-6066

- **Thrombin-cleaved Fragments of Osteopontin Are Overexpressed in Malignant Glial Tumors and Provide a Molecular Niche with Survival Advantage** *JOURNAL OF BIOLOGICAL CHEMISTRY*
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  2013; 288 (5): 3097-3111

- **Microfluidic impedance cytometer for platelet analysis** *LAB ON A CHIP*
  Evander, M., Ricco, A. J., Morser, J., Kovacs, G. T., Leung, L. L., Giovangrandi, L.
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- **Differential Gene Expression in Thrombomodulin (TM; CD141)(+) and TM(-) Dendritic Cell Subsets.** *PloS one*
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- **Chemerin Bioactivity Is Regulated by Factor XIa: A Novel Interface Linking Between Coagulation, Hemostasis and Immunity** *53rd Annual Meeting and Exposition of the American-Society-of-Hematology (ASH)*
  Yamaguchi, Y., Morser, J., Leung, L. L.
  AMER SOC HEMATOLOGY.2011: 981–82

- **Chemerin158K Protein Is the Dominant Chemerin Isoform in Synovial and Cerebrospinal Fluids but Not in Plasma** *JOURNAL OF BIOLOGICAL CHEMISTRY*
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- **Proteolytic Cleavage of Chemerin Protein Is Necessary for Activation to the Active Form, Chem157S, Which Functions as a Signaling Molecule in Glioblastoma** *JOURNAL OF BIOLOGICAL CHEMISTRY*
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- **Thrombospondin Type I Domain Containing 7A (THSD7A) Mediates Endothelial Cell Migration and Tube Formation** *JOURNAL OF CELLULAR PHYSIOLOGY*
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- **Heparin-induced thrombosis without thrombocytopenia** *JOURNAL OF THORACIC AND CARDIOVASCULAR SURGERY*
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- **Essential thrombin residues for inhibition by protein C inhibitor with the cofactors heparin and thrombomodulin** *JOURNAL OF THROMBOSIS AND HAEMOSTASIS*
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- **Thrombin-activatable procarboxypeptidase B regulates activated complement C5a in vivo** *BLOOD*
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- **Antiangiogenic antithrombin induces global changes in the gene expression profile of endothelial cells** *CANCER RESEARCH*
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- **Perioperative evaluation of bleeding diathesis.** *Hematology / the Education Program of the American Society of Hematology. American Society of Hematology. Education Program*
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- **Thrombin activatable fibrinolysis inhibitor, a potential regulator of vascular inflammation** *JOURNAL OF BIOLOGICAL CHEMISTRY*
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- **Identification of critical residues on thrombin mediating its interaction with fibrin** *THROMBOSIS AND HAEMOSTASIS*
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  Leung, L. L., Gibbs, C. S.
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- **SELECTION OF A SUPPRESSOR MUTATION THAT RESTORES AFFINITY OF AN OLIGONUCLEOTIDE INHIBITOR FOR THROMBIN USING IN-VITRO GENETICS** *JOURNAL OF BIOLOGICAL CHEMISTRY*
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