



## Aida Habtezion MD MSc.

Associate Professor of Medicine (Gastroenterology and Hepatology)

Medicine - Gastroenterology & Hepatology

### CLINICAL OFFICES

- **Stanford Gastroenterology and Digestive Health Clinic**

450 Broadway St

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Redwood City, CA 94603

**Tel** (650) 736-5555      **Fax** (650) 498-6323

### Bio

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### CLINICAL FOCUS

- Gastroenterology
- Inflammatory Bowel Diseases

### ACADEMIC APPOINTMENTS

- Associate Professor, Medicine - Gastroenterology & Hepatology
- Member, Bio-X
- Member, Stanford Cancer Institute
- Faculty Fellow, Stanford ChEM-H
- Member, Stanford Neurosciences Institute

### ADMINISTRATIVE APPOINTMENTS

- Associate Professor of Medicine, Division of Gastroenterology & Hepatology, Stanford University, (2017- present)
- Member, National Scientific Advisory Committee (Crohn's and Colitis Foundation of America, CCFA), (2015- present)
- Member, Clinical, Integrative and Molecular Gastroenterology Study Section (NIH), (2012-2018)
- Editorial Board, Gastroenterology, (2011- present)
- Member, Immunology Postgraduate Program Committee, Stanford University, (2011-2014)
- Assistant Professor of Medicine, Division of Gastroenterology & Hepatology, Stanford University, (2010-2017)
- Editorial Board, Digestive Diseases and Sciences, (2008-2013)
- Instructor, Division of Gastroenterology & Hepatology, Stanford University, (2007-2010)

### HONORS AND AWARDS

- Synergy Award, Kenneth Rainin Foundation (2017 - 2019)
- Inducted to The American Society for Clinical Investigation, ASCI (2017)

- Endowed Ballinger-Swindells Family Scholar, Stanford University (2016 - Present)
- Immunology Faculty Mentor of the Year, Stanford University (2015 - 2016)
- Division Teaching Award, Stanford University (2013)
- Harold Amos Medical Faculty Development Award, Robert Wood Johnson Foundation (2011-2015)
- DDC Named Investigator, Stanford Digestive Disease Center (DDC) (2010-2011)
- Pilot/Feasibility Award, Stanford Digestive Disease Center (2007-2008)
- Clinical Scientist Career Development Award (K08), NIH/NIDDK (2006-2011)

## PROFESSIONAL EDUCATION

- Medical Education: McMaster University Michael G DeGroot School of Medicine Registrar (1996) Canada
- Fellowship: Stanford University School of Medicine (2005) CA
- Postdoctoral Research Fellowship, Stanford , University (2006)
- Board Certification, Gastroenterology , Royal College of Physicians of Canada (2002)
- Fellowship: University of Toronto (2002) Canada
- Board Certification, Internal Medicine: American Board of Internal Medicine & , Royal College of Physicians of Canada (1999)
- Residency: University of Western Ontario (1999) Canada

## LINKS

- Habtezion Lab: <http://med.stanford.edu/habtezionlab.html>

## Research & Scholarship

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### CURRENT RESEARCH AND SCHOLARLY INTERESTS

Leukocyte recruitment & immune responses in diseases affecting digestive organs

### CLINICAL TRIALS

- Gastric Acid Suppression and Probiotic Colonization, Recruiting
- Localized Therapeutics for the Treatment of Gastrointestinal Disorders, Recruiting

## Teaching

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### STANFORD ADVISEES

#### Doctoral Dissertation Reader (AC)

Sarah Barnes, Robert Yuan

#### Postdoctoral Faculty Sponsor

Andres Gottfried Blackmore, Bomi Lee, Murli Manohar, Hong Namkoong, Estelle Spear

#### Postdoctoral Research Mentor

Andres Gottfried Blackmore, Yeneneh Haileselassie, Murli Manohar, Hong Namkoong, Estelle Spear

### GRADUATE AND FELLOWSHIP PROGRAM AFFILIATIONS

- Immunology (Phd Program)
- Medicine (Masters Program)

## Publications

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### PUBLICATIONS

- **IL22RA1/STAT3 Signaling Promotes Stemness and Tumorigenicity in Pancreatic Cancer** *CANCER RESEARCH*  
He, W., Wu, J., Shi, J., Huo, Y., Dai, W., Geng, J., Lu, P., Yang, M., Fang, Y., Wang, W., Zhang, Z., Habtezion, A., Sun, et al  
2018; 78 (12): 3293–3305
- **STING Signaling Promotes Inflammation in Experimental Acute Pancreatitis.** *Gastroenterology*  
Zhao, Q., Wei, Y., Pandol, S. J., Li, L., Habtezion, A.  
2018; 154 (6): 1822
- **The Interface of Pancreatic Cancer With Diabetes, Obesity, and Inflammation: Research Gaps and Opportunities: Summary of a National Institute of Diabetes and Digestive and Kidney Diseases Workshop** *PANCREAS*  
Abbruzzese, J. L., Andersen, D. K., Borrebaeck, C. K., Chari, S. T., Costello, E., Cruz-Monserrate, Z., Eibl, G., Engleman, E. G., Fisher, W. E., Habtezion, A., Kim, S. K., Korc, M., Logsdon, et al  
2018; 47 (5): 516–25
- **Diabetes Mellitus and Obesity as Risk Factors for Pancreatic Cancer** *JOURNAL OF THE ACADEMY OF NUTRITION AND DIETETICS*  
Eibl, G., Cruz-Monserrate, Z., Korc, M., Petrov, M. S., Goodarzi, M. O., Fisher, W. E., Habtezion, A., Lugea, A., Pandol, S. J., Hart, P. A., Andersen, D. K., Consortium Study Chronic Pancreati  
2018; 118 (4): 555–67
- **A Dominant Role for Regulatory T Cells in Protecting Females Against Pulmonary Hypertension.** *Circulation research*  
Tamosiuniene, R., Manouvakhova, O., Mesange, P., Saito, T., Qian, J., Sanyal, M., Lin, Y. C., Nguyen, L. P., Luria, A., Tu, A. B., Sante, J. M., Rabinovitch, M., Fitzgerald, et al  
2018
- **Autophagy, Inflammation, and Immune Dysfunction in the Pathogenesis of Pancreatitis** *GASTROENTEROLOGY*  
Gukovskaya, A. S., Gukovsky, I., Alguel, H., Habtezion, A.  
2017; 153 (5): 1212–26
- **Setting up a Lab: The Early Years** *CELLULAR AND MOLECULAR GASTROENTEROLOGY AND HEPATOLOGY*  
Habtezion, A.  
2017; 4 (3): 445–46
- **A Mucosal and Cutaneous Chemokine Ligand for the Lymphocyte Chemoattractant Receptor GPR15** *FRONTIERS IN IMMUNOLOGY*  
Ocon, B., Pan, J., Dinh, T., Chen, W., Ballet, R., Bscheider, M., Habtezion, A., Tu, H., Zabel, B. A., Butcher, E. C.  
2017; 8: 1111
- **Immunology of pancreatitis and environmental factors** *CURRENT OPINION IN GASTROENTEROLOGY*  
Lee, B., Zhao, Q., Habtezion, A.  
2017; 33 (5): 383–89
- **Editors' Introduction to the Chronic Pancreatitis and Pancreatic Cysts Special Issue.** *Digestive diseases and sciences*  
Park, W. G., Habtezion, A.  
2017
- **Trafficking receptor signatures define blood plasmablasts responding to tissue-specific immune challenge.** *JCI insight*  
Seong, Y., Lazarus, N. H., Sutherland, L., Habtezion, A., Abramson, T., He, X., Greenberg, H. B., Butcher, E. C.  
2017; 2 (6)
- **Age-dependent shift in macrophage polarisation causes inflammation-mediated degeneration of enteric nervous system.** *Gut*  
Becker, L., Nguyen, L., Gill, J., Kulkarni, S., Pasricha, P. J., Habtezion, A.  
2017
- **Regulatory T Cells And Sexual Dimorphism In Pulmonary Hypertension**  
Tamosiuniene, R., Mesange, P., Manouvakhova, O., Saito, T., Qian, J., Sanyal, M., Lin, Y., Nguyen, L., Luria, A., Tu, A., Sante, J., Rabinovitch, M., Voelkel, et al  
AMER THORACIC SOC.2017

- **Type 3c (pancreatogenic) diabetes mellitus secondary to chronic pancreatitis and pancreatic cancer.** *The lancet. Gastroenterology & hepatology*  
Hart, P. A., Bellin, M. D., Andersen, D. K., Bradley, D., Cruz-Monserrate, Z., Forsmark, C. E., Goodarzi, M. O., Habtezion, A., Korc, M., Kudva, Y. C., Pandol, S. J., Yadav, D., Chari, et al  
2016; 1 (3): 226-237
- **Aryl Hydrocarbon Receptor Ligands in Cigarette Smoke Induce Production of Interleukin-22 to Promote Pancreatic Fibrosis in Models of Chronic Pancreatitis.** *Gastroenterology*  
Xue, J., Zhao, Q., Sharma, V., Nguyen, L. P., Lee, Y. N., Pham, K. L., Edderkaoui, M., Pandol, S. J., Park, W., Habtezion, A.  
2016
- **Aryl Hydrocarbon Receptor Ligands in Cigarette Smoke Induce Production of Interleukin-22 to Promote Pancreatic Fibrosis in Models of Chronic Pancreatitis.** *Gastroenterology*  
Xue, J., Zhao, Q., Sharma, V., Nguyen, L. P., Lee, Y. N., Pham, K. L., Edderkaoui, M., Pandol, S. J., Park, W., Habtezion, A.  
2016
- **Macrophages and pancreatic ductal adenocarcinoma.** *Cancer letters*  
Habtezion, A., Edderkaoui, M., Pandol, S. J.  
2016; 381 (1): 211-216
- **Reactive Oxygen Species Imaging in a Mouse Model of Inflammatory Bowel Disease** *MOLECULAR IMAGING AND BIOLOGY*  
Bronsart, L., Linh Nguyen, L., Habtezion, A., Contag, C.  
2016; 18 (4): 473-478
- **HDAC3 mediates smoking-induced pancreatic cancer** *ONCOTARGET*  
Edderkaoui, M., Xu, S., Chheda, C., Morvaridi, S., Hu, R. W., Grippo, P. J., Mascarinas, E., Principe, D. R., Knudsen, B., Xue, J., Habtezion, A., Uyeminami, D., Pinkerton, et al  
2016; 7 (7): 7747-7760
- **Leukocyte Trafficking to the Small Intestine and Colon.** *Gastroenterology*  
Habtezion, A., Nguyen, L. P., Hadeiba, H., Butcher, E. C.  
2016; 150 (2): 340-354
- **Absence of keratin 8 or 18 promotes antimitochondrial autoantibody formation in aging male mice** *FASEB JOURNAL*  
Toivola, D. M., Habtezion, A., Misiorek, J. O., Zhang, L., Nystrom, J. H., Sharpe, O., Robinson, W. H., Kwan, R., Omary, M. B.  
2015; 29 (12): 5081-5089
- **Inflammation in acute and chronic pancreatitis.** *Current opinion in gastroenterology*  
Habtezion, A.  
2015; 31 (5): 395-399
- **A Thermo-Sensitive Delivery Platform for Topical Administration of Inflammatory Bowel Disease Therapies.** *Gastroenterology*  
Sinha, S. R., Nguyen, L. P., Inayathullah, M., Malkovskiy, A., Habte, F., Rajadas, J., Habtezion, A.  
2015; 149 (1): 52-55 e2
- **Keratin 8 absence down-regulates colonocyte HMGCS2 and modulates colonic ketogenesis and energy metabolism** *MOLECULAR BIOLOGY OF THE CELL*  
Helenius, T. O., Misiorek, J. O., Nystrom, J. H., Fortelius, L. E., Habtezion, A., Liao, J., Asghar, M. N., Zhang, H., Azhar, S., Omary, M. B., Toivola, D. M.  
2015; 26 (12): 2298-2310
- **Alternatively activated macrophages promote pancreatic fibrosis in chronic pancreatitis** *NATURE COMMUNICATIONS*  
Xue, J., Sharma, V., Hsieh, M. H., Chawla, A., Murali, R., Pandol, S. J., Habtezion, A.  
2015; 6
- **Protective role of hemoxygenase-1 in gastrointestinal diseases.** *Cellular and molecular life sciences*  
Chang, M., Xue, J., Sharma, V., Habtezion, A.  
2015; 72 (6): 1161-1173
- **Role and species-specific expression of colon T cell homing receptor GPR15 in colitis.** *Nature immunology*  
Nguyen, L. P., Pan, J., Dinh, T. T., Hadeiba, H., O'Hara, E., Ebtikar, A., Hertweck, A., Gökmen, M. R., Lord, G. M., Jenner, R. G., Butcher, E. C., Habtezion, A.  
2015; 16 (2): 207-213

- **Detection of intestinal cancer by local, topical application of a quenched fluorescence probe for cysteine cathepsins.** *Chemistry & biology*  
Segal, E., Prestwood, T. R., van der Linden, W. A., Carmi, Y., Bhattacharya, N., Withana, N., Verdoes, M., Habtezion, A., Engleman, E. G., Bogyo, M.  
2015; 22 (1): 148-158
- **Alternatively activated macrophages promote pancreatic fibrosis in chronic pancreatitis.** *Nature communications*  
Xue, J., Sharma, V., Hsieh, M. H., Chawla, A., Murali, R., Pandol, S. J., Habtezion, A.  
2015; 6: 7158-?
- **Immunodeficiency Mediate The Gender Dimorphism In Pulmonary Hypertension**  
Tamosiuniene, R., Nguyen, L. P., Saito, T., Luria, A., Sante, J., Sung, Y., Rabinovitch, M., Habtezion, A., Nicolls, M. R.  
AMER THORACIC SOC.2015
- **Pharmacologic therapy for acute pancreatitis** *WORLD JOURNAL OF GASTROENTEROLOGY*  
Kambhampati, S., Park, W., Habtezion, A.  
2014; 20 (45): 16868-16880
- **Combination of HDAC1 and GSK-3 beta Inhibition as a Treatment Strategy for Pancreatic Cancer**  
Edderkaoui, M., Chheda, C., Xu, S., Principe, D., Grippo, P., Benhaddou, H., Bourhim, M., Habtezion, A., Dale, Y., Pinkerton, K., Pandol, S.  
LIPPINCOTT WILLIAMS & WILKINS.2014: 1355
- **Targeting Macrophage IL-4R alpha Signaling: a Novel Immune Therapy for Chronic Pancreatitis**  
Xue, J., Sharma, V., Murali, R., Pandol, S. J., Habtezion, A.  
LIPPINCOTT WILLIAMS & WILKINS.2014: 1424
- **Alcoholic chronic pancreatitis increases tissue transformed macrophages (M2) which promote pancreatic cancer lesions in a Kras mouse model**  
Edderkaoui, M., Grippo, P., Benhaddou, H., Ouhaddi, Y., Tsukamoto, H., Swartwood, S., Knudsen, B., Goodridge, H. S., Habtezion, A., Go, V., Pandol, S. J.  
AMER ASSOC CANCER RESEARCH.2014
- **Immune cells and immune-based therapy in pancreatitis.** *Immunologic research*  
Xue, J., Sharma, V., Habtezion, A.  
2014; 58 (2-3): 378-386
- **Carbon monoxide-based therapy ameliorates acute pancreatitis via TLR4 inhibition** *JOURNAL OF CLINICAL INVESTIGATION*  
Xue, J., Habtezion, A.  
2014; 124 (1): 437-447
- **Programmed Death 1 (pd1)-Dependent Regulatory T Cell (treg) Protection In The Development Of Pulmonary Hypertension (ph)**  
Tamosiuniene, R., Lin, Y., Sung, Y., Oderup, C., Nguyen, L., Habtezion, A., Nicolls, M. R.  
AMER THORACIC SOC.2014
- **Alternative Activated Macrophages Activate Pancreatic Stellate Cells and Promote Chronic Pancreatitis**  
Xue, J., Habtezion, A.  
LIPPINCOTT WILLIAMS & WILKINS.2013: 1389
- **Retinoic acid regulates the development of a gut-homing precursor for intestinal dendritic cells.** *Mucosal immunology*  
Zeng, R., Oderup, C., Yuan, R., Lee, M., Habtezion, A., Hadeiba, H., BUTCHER, E. C.  
2013; 6 (4): 847-856
- **Role of immune cells and immune-based therapies in pancreatitis and pancreatic ductal adenocarcinoma.** *Gastroenterology*  
Zheng, L., Xue, J., Jaffee, E. M., Habtezion, A.  
2013; 144 (6): 1230-1240
- **ROLE AND REGULATION OF IL-22 IN THE TREATMENT OF EXPERIMENTAL ACUTE PANCREATITIS** *36th Annual Scientific Meeting of the Research-Society-on-Alcoholism*  
Xue, J., Nguyen, D., Habtezion, A.  
WILEY-BLACKWELL.2013: 303A-303A
- **Inhibiting Heme Oxygenase-1 Abrogates The Protective Effect Of Regulatory T Cells In Pulmonary Hypertension**  
Tamosiuniene, R., Nguyen, L. P., Sung, Y., Lin, Y., Khan, A. M., Sante, J., Habtezion, A., Nicolls, M. R.  
AMER THORACIC SOC.2013

- **Aryl Hydrocarbon Receptor Regulates Pancreatic IL-22 Production and Protects Mice From Acute Pancreatitis** *GASTROENTEROLOGY*  
Xue, J., Nguyen, D. T., Habtezion, A.  
2012; 143 (6): 1670-1680
- **Aryl Hydrocarbon Receptor Regulates Pancreatic IL-22 and Protects Against Acute Pancreatitis in Mice**  
Xue, J., Nguyen, D. T., Habtezion, A.  
LIPPINCOTT WILLIAMS & WILKINS.2012: 1414-14
- **Plasmacytoid Dendritic Cells Transport Peripheral Antigens to the Thymus to Promote Central Tolerance** *IMMUNITY*  
Hadeiba, H., Lahl, K., Edalati, A., Oderup, C., Habtezion, A., Pachynski, R., Nguyen, L., Ghodsi, A., Adler, S., Butcher, E. C.  
2012; 36 (3): 438-450
- **Therapeutic Role of Carbon Monoxide in Experimental Acute Pancreatitis**  
Xue, J., Habtezion, A.  
LIPPINCOTT WILLIAMS & WILKINS.2011: 1363-63
- **Panhematin provides a therapeutic benefit in experimental pancreatitis** *GUT*  
Habtezion, A., Kwan, R., Akhtar, E., Wanaski, S. P., Collins, S. D., Wong, R. J., Stevenson, D. K., Butcher, E. C., Omary, M. B.  
2011; 60 (5): 671-679
- **Absence of keratin 8 confers a paradoxical microflora-dependent resistance to apoptosis in the colon** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*  
Habtezion, A., Toivola, D. M., Asghar, M. N., Kronmal, G. S., Brooks, J. D., Butcher, E. C., Omary, M. B.  
2011; 108 (4): 1445-1450
- **Heme oxygenase-1 is induced in peripheral blood mononuclear cells of patients with acute pancreatitis: a potential therapeutic target** *AMERICAN JOURNAL OF PHYSIOLOGY-GASTROINTESTINAL AND LIVER PHYSIOLOGY*  
Habtezion, A., Kwan, R., Yang, A. L., Morgan, M. E., Akhtar, E., Wanaski, S. P., Collins, S. D., Butcher, E. C., Kamal, A., Omary, M. B.  
2011; 300 (1): G12-G20
- **Diabetic Gastroparesis: An Emerging Role for Macrophages and Heme Oxygenase-1** *GASTROENTEROLOGY*  
Habtezion, A., Wiley, J. W.  
2010; 138 (7): 2219-2223
- **Intermediate filaments take the heat as stress proteins** *TRENDS IN CELL BIOLOGY*  
Toivola, D. M., Strnad, P., Habtezion, A., Omary, M. B.  
2010; 20 (2): 79-91
- **Keratins modulate the shape and function of hepatocyte mitochondria: a mechanism for protection from apoptosis** *JOURNAL OF CELL SCIENCE*  
Tao, G., Looi, K. S., Toivola, D. M., Strnad, P., Zhou, Q., Liao, J., Wei, Y., Habtezion, A., Omary, M. B.  
2009; 122 (21): 3851-3855
- **CCR9 expression defines tolerogenic plasmacytoid dendritic cells able to suppress acute graft-versus-host disease** *NATURE IMMUNOLOGY*  
Hadeiba, H., Sato, T., Habtezion, A., Oderup, C., Pan, J., Butcher, E. C.  
2008; 9 (11): 1253-1260
- **Hemeoxygenase-1 is induced in peripheral blood mononuclear cells of patients with acute pancreatitis: A potential therapeutic target**  
Habtezion, A., Kwan, R., Yang, A. L., Morgan, M. E., Akhtar, E., Wanaski, S. P., Collins, S. M., Butcher, E., Kamal, A., Omary, B.  
W B SAUNDERS CO-ELSEVIER INC.2008: A372-A373
- **DCs metabolize sunlight-induced vitamin D3 to 'program' T cell attraction to the epidermal chemokine CCL27** *NATURE IMMUNOLOGY*  
Sigmundsdottir, H., Pan, J., Debes, G. F., Alt, C., Habtezion, A., Soler, D., Butcher, E. C.  
2007; 8 (3): 285-293
- **Short-term homing assay reveals a critical role for lymphocyte function-associated antigen-1 in the hepatic recruitment of lymphocytes in graft-versus-host disease** *JOURNAL OF HEPATOLOGY*  
Sato, T., Habtezion, A., Beilhack, A., Schulz, S., Butcher, E., Thorlaciuc, H.  
2006; 44 (6): 1132-1140
- **CD8(+) recent thymic emigrants home to and efficiently repopulate the small intestine epithelium** *NATURE IMMUNOLOGY*

Staton, T. L., Habtezion, A., Winslow, M. M., Sato, T., Love, P. E., Butcher, E. C.  
2006; 7 (5): 482-488

● **Hemin-activated macrophages home to the pancreas and protect from acute pancreatitis via heme oxygenase-1 induction** *JOURNAL OF CLINICAL INVESTIGATION*

Nakamichi, I., Habtezion, A., Zhong, B. H., Contag, C. H., BUTCHER, E. C., Omary, M. B.  
2005; 115 (11): 3007-3014

● **Cellular integrity plus: organelle-related and protein-targeting functions of intermediate filaments** *TRENDS IN CELL BIOLOGY*

Toivola, D. M., Tao, G. Z., Habtezion, A., Liao, J., Omary, M. B.  
2005; 15 (11): 608-617

● **Keratin-8-deficient mice develop chronic spontaneous Th2 colitis amenable to antibiotic treatment** *JOURNAL OF CELL SCIENCE*

Habtezion, A., Toivola, D. M., BUTCHER, E. C., Omary, M. B.  
2005; 118 (9): 1971-1980

● **Risk factors for low bone density in Crohn's disease** *INFLAMMATORY BOWEL DISEASES*

Habtezion, A., Silverberg, M. S., Parkes, R., Mikolainis, S., Steinhart, A. H.  
2002; 8 (2): 87-92