BIOGRAPHICAL SKETCH

Provide the following information for the Senior/key personnel and other significant contributors.
Follow this format for each person. **DO NOT EXCEED FIVE PAGES.**

NAME: **Piero D. DALERBA**

eRA COMMONS USERNAME (credential, e.g., agency login): **PDALERBA**

POSITION TITLE: **Professor - *Center for Discovery and Innovation* (CDI), Department of Medical Sciences, *Hackensack Meridian School of Medicine* (HMSOM), Nutley (NJ 07110)**

EDUCATION/TRAINING *(Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable. Add/delete rows as necessary)*

INSTITUTION AND LOCATION	DEGREE *(if applicable)*	Completion Date (MM/YYYY)	FIELD OF STUDY
Università degli Studi di Milano (Milan, Italy)	**MD**	**07/1995**	**Medicine**
Università degli Studi di Milano (Milan, Italy)	**Residency**	**11/2000**	**Oncology**
University of Michigan (Ann Arbor, MI, USA)	**Post-doctoral**	**10/2005**	**Internal Medicine**
Stanford University (Stanford, CA, USA)	**Post-doctoral**	**06/2009**	**Stem Cell Biology**

A. Personal Statement

I am a clinically trained medical oncologist and my main research interest is the discovery of **biomarkers** that are predictive of **tumor response to anti-neoplastic drugs,** in order to improve **decision-making algorithms** and develop **new therapeutic approaches** for **cancer patients.** Over the last 20 years, I devoted the bulk of my research efforts to investigations on the cellular and molecular biology of **human epithelial malignancies** (colon cancer, breast cancer, salivary gland malignancies) with a special focus on the role played by epigenetic differentiation programs in shaping the physiology and drug sensitivity of cancer cells. Among the important contributions of my work are: a) the first application of *single-cell genomics* (single-cell RT-qPCR) to study the cell composition of human colon epithelia, which led to the discovery of novel sub-types of epithelial cells and novel biomarkers to obtain their differential purification **(1)**; b) the identification of CDX2 as a predictive biomarker of early relapse and clinical benefit from adjuvant chemotherapy in Stage-II/Stage-III colon cancer **(2)**; c) the discovery of a mutational "hot-spot" in HLA class-I genes, targeted at high frequency in colon cancer with *microsatellite instability* (MSI) and predicted to cause resistance to immunotherapy with anti-PD1/PD-L1 antibodies **(3);** d) the discovery of surface markers (CD49f, KIT) for the differential isolation of ductal and myoepithelial cells in human *adenoid cystic carcinoma* (ACC), which led to the identification of inverse agonists of RAR/RXR signaling as a new class of anti-tumor drugs **(4)**. I hold a professor position at the ***Center for Discovery and Innovation*** **(CDI)** and the *Department of Medical Sciences* of the ***Hackensack Meridian School of Medicine*** **(HMSOM)**, where I direct a research program aimed at elucidating the role of adult stem cells in the pathogenesis of epithelial malignancies (colon cancer, breast cancer, adenoid cystic carcinoma). I am also an Associate Member of the ***Lombardi Comprehensive Cancer Center*** **(LCCC)** at **Georgetown University** (Washington, DC). My laboratory has been supported by grants from the **National Institutes of Health (NIH)**, the **Department of Defense (DOD)**, the **New York State Department of Health (NYSDOH)** and various research foundations, such as the **Adenoid Cystic Carcinoma Research Foundation (ACCRF),** the **Damon Runyon Cancer Research Foundation** and the **Breast Cancer Alliance (BCA)**. Over the last 10 years, I mentored undergraduate, graduate and postdoctoral trainees within the framework of NIH-funded research centers **(P30-CA013696, P30-DK132710, P30-CA051008)** and training grants **(TL1-TR001875, T32-GM008224, T32-DK007328).** I served as a faculty member on 5 PhD thesis committees, and as primary advisor for 2 PhD students and 3 postdoctoral fellows. Ongoing and recently completed projects include:

1. **R01-DE028961 - National Institutes of Health (NIH)** (PI: Dalerba)
   National Institute of Dental and Craniofacial Research **(NIDCR)** 08/01/2019 - 05/31/2025
   Dissecting cell composition and drug sensitivity in human Adenoid Cystic Carcinomas (ACCs). The goal of this project is to investigate the molecular mechanisms responsible for the bi-phenotypic cell composition of human ACCs, and test their sensitivity to drug combinations targeting RAR/RXR signaling pathways.
2. **R01- CA292464** - **National Institutes of Health (NIH)** (PI: Han)
   National Cancer Institute **(NCI)** 04/01/2025-03/31/2030
   Microbial and host biomarkers in colorectal cancer. The major goal of this award is to elucidate the mechanism of action by which *Fusobacterium nucleatum* promotes colon cancer growth, with a special focus on understanding the role played by its interaction with *Annexin A1* (ANXA1).

3. **R01-CA257971** - **National Institutes of Health (NIH)** (PI: Yang)
   National Cancer Institute **(NCI)** 09/06/2021 - 12/31/2026
   UNCOVER: underlying novel causes of onset of very early cancer research. The goal of this project is to investigate the role of environmental factors in the recent increase in incidence among young adults (<50 years old) of many forms of cancer, especially *young-onset rectal cancer* (YO-RC).
4. **W81XWH-19-1-0464 - *Department of Defense*** **(DOD)** (MPIs: Leong, Dalerba)
   Breast Cancer Research Program **(BCRP) - Breakthrough Level 2 Award** 07/15/2019 - 07/14/2023
   Biodegradable cationic nanoparticles as a "push" chemo-drug carrier and a "pull" cfDNA scavenger against breast cancer metastasis. The goal of this project is to test the anti-tumor activity of a new class of *nucleic acid binding nanoparticles* (NABNPs) designed to deliver high payloads of cytotoxic drugs to tumor sites.
5. **DOH01-C34925GG-3450000 - *New York State Department of Health*** **(NYSDOH)** (PI: Dalerba)
   "Peter T. Rowley" Breast Cancer Research Projects (Round 5) 11/01/2019 - 10/31/2022
   A novel biomarker to improve risk-prediction in familial breast cancer patients. The goal of this project is to test the value of a novel biomarker (SOX10) for the identification of subgroups of BRCAX familial breast cancer patients characterized by reduced 10-year survival outcomes (TTR, DFS, OS).
6. **CU18-3352 - "Kara Gelb" Memorial Grant** (PI: Dalerba)
   Adenoid Cystic Carcinoma Research Foundation **(ACCRF)** 12/01/2018 - 11/30/2019
   Pharmacological manipulation of cell differentiation in human Adenoid Cystic Carcinomas (ACCs). The goal of this project is to elucidate the role of *retinoic acid* (RA) signaling pathways in controlling cell fate specification along the ductal and myoepithelial lineages in human *Adenoid Cystic Carcinomas* (ACCs).

Citations:

1. **Dalerba P.,** Kalisky T., Sahoo D., Rajendran P.S., Rothenberg M.E., Leyrat A.A., Sim S., Okamoto J., Johnston D.M., Qian D., Zabala M., Bueno J., Neff N.F., Wang J., Shelton A.A., Visser B., Hisamori S., Shimono Y., van de Wetering M., Clevers H., Clarke M.F. and Quake S.R. *Single-cell dissection of transcriptional heterogeneity in human colon tumors.* **Nature Biotechnology,** 29:1120-1127 **(2011)**. **PMCID: PMC3237928**
2. **Dalerba P.**, Sahoo D., Paik S, Guo X, Yothers G, Song N, Wilcox-Fogel N, Forgó E, Rajendran P.S., Miranda SP, Hutchison J, Hisamori S., Kalisky T., Qian D., Wolmark N, Fisher GA, van de Rijn M. and Clarke M.F. *CDX2 as a prognostic biomarker in Stage-II and Stage-III colon cancer.* **The New England Journal of Medicine (NEJM)**, 374:211-222 **(2016)**. **PMCID: PMC4784450**
3. Raab W.J., Mazzocchi A., Radice P., Sahoo D., Castelli C. and **Dalerba P.** *A microsatellite in the coding sequence of HLA-A/B is a mutation hotspot in colon cancer with microsatellite instability*. **Gastroenterology,** 162:960-963 **(2022)**. **PMCID: PMC8881331**
4. Viragova S., Aparicio L., Palmerini P., Zhao J., Valencia Salazar L.E., Schurer A., Dhuri A., Sahoo D., Moskaluk C.A., Rabadan R. and **Dalerba P.** *Inverse agonists of RAR/RXR signaling as lineage-specific anti-tumor agents against human Adenoid Cystic Carcinomas (ACCs).* **Journal of the National Cancer Institute (JNCI)**, 115:838-852, djad062 **(2023)**. **PMCID: PMC10323906**

B. <u>Positions, Scientific Appointments, and Honors</u> (focus on last three years):

<u>Positions:</u>

2024 **Professor**, *Center for Discovery and Innovation* (CDI), *Department of Medical Sciences*, *Hackensack Meridian School of Medicine* (HMSOM), Nutley (New Jersey, USA)

2024 **Associate Member**, *Lombardi Comprehensive Cancer Center* (LCCC), *Georgetown University* (GU), Washington (District of Columbia, USA)

2014-2024 **Assistant Professor**, Department of Medicine (*Division of Digestive and Liver Diseases*) and Department of Pathology and Cell Biology, *Columbia University*, New York (New York, USA)

2009-2014 **Instructor of Medicine**, Stanford Institute for Stem Cell Biology and Regenerative Medicine, *Stanford University*, Palo Alto (California, USA)

2005-2009 **Postdoctoral Fellow**, Stanford Institute for Stem Cell Biology and Regenerative Medicine, *Stanford University*, Palo Alto (California, USA)

2004-2005 **Postdoctoral Fellow**, Department of Internal Medicine, *University of Michigan*, Ann Arbor (Michigan, USA)

2001-2004 **Research Physician**, Unit of Human Cancer Immunotherapy, Department of Experimental Oncology, *Istituto Nazionale Tumori*, Milano (Italy)

2000 **Resident Physician**, Unit of Human Cancer Immunotherapy, Department of Experimental Oncology, *Istituto Nazionale Tumori*, Milan (Italy)

1999 **Civil Servant** (substitution for compulsory military service), Department of Immunology and Cellular Biology, *Istituto di Ricerche Farmacologiche "Mario Negri"*, Milan (Italy)

1996-1998 **Resident Physician**, Section of Oncology, Department of Oncology and Surgical Sciences, *Università degli Studi di Padova*, Padua (Italy)

Scientific Appointments:

2025 ***Ad hoc* grant reviewer**: *National Cancer Institute* (NCI), *Special Topics: Basic and Translational Cancer Research*, study section: ZRG-BTC-F(80);

2021-2024 ***Ad hoc* grant reviewer**: *National Institutes of Dental and Craniofacial Research* (NIDCR), *Special Grants Review Committee* (DSR), study sections: ZDE1-TO(04)S and ZDE1-NB(05);

2022 ***Ad hoc* grant reviewer**: *Worldwide Cancer Research* (WCR), Edinburgh (United Kingdom);

2020 ***Ad hoc* grant reviewer**: *National Institutes of Health* (NIH), study section: *Drug Discovery and Molecular Pharmacology* (DMP);

2019-2025 **Member of the Editorial Board,** *Fujita Medical Journal* (FMJ), Toyoake (Japan);

2019 ***Ad hoc* grant reviewer**: *Breast Cancer Now* (BCN), London (United Kingdom);

2013-2018 ***Ad hoc* grant reviewer**: *Israel Science Foundation* (ISF), Jerusalem (Israel);

2009 ***Ad hoc* grant reviewer**: *Swiss Cancer League* (SCL), Bern (Switzerland);

1999 **Elected Representative for Residents** Università degli Studi di Padova, Padua (Italy);

1992-1994 **Elected Representative for Medical Students,** Università degli Studi di Milano, Milan (Italy);

Other Experience and Professional Memberships:

2011-2025 ***Ad hoc* referee for peer-reviewed scientific journals**: *New England Journal of Medicine* (2010-2023), *Cell* (2015), *Journal of the American Medical Association - Open Network* (2020), *Cell Stem Cell* (2015-2020), *Gastroenterology* (2022), *Value in Health* (2021), *Journal of Clinical Investigation* (2017), *Annals of Oncology* (2016), *Journal of the National Cancer Institute* (2012-2013), *Cancer Research* (2013-2023), *British Journal of Cancer* (2018), *JCI Insight* (2025);

2012-2024 **Active Member,** *American Association for Cancer Research* (AACR);

1996 **Italian State Board Certification - Medical Licensing.** *Esame di Stato - Abilitazione alla professione di medico-chirurgo*. Università degli Studi di Milano, Milan (Italy)

Honors and Awards:

2022 **CSCI Seed Fund Award:** *Columbia Stem Cell Initiative* (CSCI)

2019 **VELOCITY Fellow Award:** *Columbia University Irving Medical Center* (CUIMC)

2018 ***"Kara Gelb"* Memorial Grant:** *Adenoid Cystic Carcinoma Research Foundation* (ACCRF)

2018 **BCA Young Investigator Grant:** *Breast Cancer Alliance* (BCA)

2017 **Schaefer Research Scholars Program**: *Columbia University Irving Medical Center* (CUIMC)

2014 **Abilitazione Scientifica Nazionale (ASN):** *National Scientific Qualification for academic appointments in Italian Universities.* Ranking: eligible for *Associate Professor* in: Oncology (06/D3), Medical Genetics (06/A1), Human Anatomy (05/H1), Histology (05/H2)

2012 **NCCN Young Investigator Award** - *National Comprehensive Cancer Network* (NCCN)

2012-2014 **Siebel Scholars Program,** *Siebel Stem Cell Institute - Thomas and Stacey Siebel Foundation.*

2011-2014 **BD Biosciences - Stem Cell Research Grant** to study surface markers of colon epithelial cells

2006-2009 **CIRM Training Grant**: Three-year research fellowship and grant from the *California Institute for Regenerative Medicine* (CIRM) for the functional characterization of colon cancer stem cells

2004-2005 **FIRC *"Leonino Fontana e Maria Lionello"* Fellowship**: research fellowship from the *Italian Foundation for Cancer Research* (FIRC) for a research project in oncology conducted abroad

2002 **9th International PBI "Valentina Lana" Research Prize in Molecular Immunology**: *Italian Society for Immunology, Clinical Immunology and Allergology* (SIICA)

2001-2003 **FIRC Research Fellowship** (3 years) - *Italian Foundation for Cancer Research* (FIRC)

1996-2000 **MURST Fellowship** (4 years) - *Italian Ministry for Scientific and Technological Research* (MURST)

C. Contributions to Science

1) Application of *"cancer stem cell"* models to the discovery of new prognostic and predictive biomarkers in clinical oncology. Among the conceptual implications of the *cancer stem cell* theory is the hypothesis that tumors enriched in cells with *cancer stem cell* properties might associate with more aggressive clinical behaviors, and could respond differently to anti-tumor treatments. My work contributed to validate these

concepts in colon cancer **(a)** and breast cancer **(b)**. In colon cancer**,** my work showed that lack of CDX2 expression associates with high expression of ALCAM/CD166, and identifies a subset of patients characterized by poor prognosis when treated with surgery alone, but poised to benefit from adjuvant chemotherapy in Stage-II disease **(a)**. I also discovered a mutational hot-spot in the coding sequence of HLA-A/HLA-B genes that is targeted at high frequency in colon cancer with *microsatellite instability* (MSI) **(c),** and contributed to the discovery of ANXA1 as a biomarker of *Fusobacterium* infection and reduced survival in colon cancer **(d)**.

a. **Dalerba P.**, Sahoo D., Paik S, Guo X, Yothers G, Song N, Wilcox-Fogel N, Forgó E, Rajendran P.S., Miranda SP, Hutchison J, Hisamori S., Kalisky T., Qian D., Wolmark N, Fisher GA, van de Rijn M. and Clarke M.F. *CDX2 as a prognostic biomarker in Stage-II and Stage-III colon cancer.* **The New England Journal of Medicine (NEJM)**, 374:211-222 **(2016). PMCID: PMC4784450**
b. Liu R., Wang X., Chen G.Y., **Dalerba P.**, Gurney A., Hoey T., Sherlock G., Lewicki J., Shedden K. and Clarke M.F. *The prognostic role of a gene signature from tumorigenic breast cancer cells* **The New England Journal of Medicine (NEJM)**, 356:217-226 (2007). **PMID: 17229949**
c. Raab W.J., Mazzocchi A., Radice P., Sahoo D., Castelli C. and **Dalerba P.** *A microsatellite in the coding sequence of HLA-A/B is a mutation hotspot in colon cancer with microsatellite instability*. **Gastroenterology,** 162:960-963 **(2022)**. **PMCID: PMC8881331**
d. Rubinstein M.R., Baik J.E., Lagana S.M., Han R.P., Raab W.J., Sahoo D., **Dalerba P.**, Wang T.C. and Han Y.W., *Fusobacterium nucleatum promotes colorectal cancer by inducing the Wnt/B-catenin modulator Annexin A1*. **EMBO Reports,** 20:e47638 **(2019) PMCID: PMC6446206**

2) Development of *"single-cell genomics"* techniques to identify novel biomarkers for the identification and differential purification of stem cell and *"cancer stem cell"* populations. Among the key contributions of my research is the application of *single-cell genomics* techniques (single-cell PCR, single-cell RNA-seq) to study the cell composition of human tissues and *"dissect"* the molecular identity of rare and/or minority cell populations, such as stem and progenitor cells **(a-d)**. These studies led to several findings, including: 1) the observation that, in colon carcinomas, intra-tumor cell heterogeneity often recapitulates the lineage diversity of normal colonic epithelia **(a)**; 2) the demonstration that *multi-lineage differentiation* (a form of epigenetic plasticity) is a source of cell heterogeneity in human colon carcinomas **(a)**; 3) the **discovery** of **surface markers (CD49f, KIT)** for the differential purification by ***fluorescence-activated cell sorting* (FACS)** of malignant cells with **ductal and myoepithelial phenotypes** in **human adenoid cystic carcinomas (ACCs) (d)**.

a. **Dalerba P.,** Kalisky T., Sahoo D., Rajendran P.S., Rothenberg M.E., Leyrat A.A., Sim S., Okamoto J., Johnston D.M., Qian D., Zabala M., Bueno J., Neff N.F., Wang J., Shelton A.A., Visser B., Hisamori S., Shimono Y., van de Wetering M., Clevers H., Clarke M.F. and Quake S.R. *Single-cell dissection of transcriptional heterogeneity in human colon tumors.* **Nature Biotechnology,** 29:1120-1127 (2011). **PMCID: PMC3237928**
b. Wu A.R., Neff N.F., Kalisky T., **Dalerba P.,** Treutlein B., Rothenberg M.E., Mburu F.M., Mantalas G.L., Sim S., Clarke M.F. and Quake S.R. *Quantitative assessment of single-cell RNA-sequencing methods.* **Nature Methods**, 11:41-46 (2014). **PMCID: PMC4022966**
c. Kanter I., **Dalerba P.** and Kalisky T. *A cluster robustness score for identifying cell subpopulations in single-cell gene expression datasets from heterogeneous tissues and tumors.* **Bioinformatics**, 35:962-971 **(2019)**. **PMID: 30165506**
d. Viragova S., Aparicio L., Palmerini P., Zhao J., Valencia Salazar L.E., Schurer A., Dhuri A., Sahoo D., Moskaluk C.A., Rabadan R. and **Dalerba P.** *Inverse agonists of RAR/RXR signaling as lineage-specific anti-tumor agents against human Adenoid Cystic Carcinomas (ACCs).* **Journal of the National Cancer Institute (JNCI)**, 115:838-852, djad062 **(2023)**. **PMCID: PMC10323906**

3) Discovery, purification and functional study of human colon *"cancer stem cells"*. During my post-doctoral work, I used flow cytometry to study the cell composition of human *colorectal carcinomas* (CRCs). Among the findings of my work was the discovery of surface markers (EpCAM, CD44, CD166) that enabled the differential purification by FACS of a subset of epithelial cells selectively endowed with the ability to form tumors when injected in immune-deficient mice, a seminal finding in support of *cancer stem cell* models **(a)**. These studies built upon my previous work on the biology of telomerase, which showed that hTERT is not expressed in a constitutive manner in all CRC cells **(b),** and led to the discovery of novel cell types within the colonic epithelium, some of which endowed with *"feeder"* functions towards intestinal stem cells **(c)**, and to the discovery of microRNAs involved in the molecular regulation of terminal differentiation along the colonic crypt **(d)**. Taken together, these studies showed that cancer tissues often contain multiple cell-types, which can display important differences in stem cell properties, such as self-renewal (*immortality*), and which can act cooperatively to form specialized micro-environments (*niches*) to enable the survival and proliferation of *cancer stem cell* populations.

a. **Dalerba P.**, Dylla S.J., Park I.K., Liu R., Wang X., Cho R.W., Hoey T., Gurney A., Huang E.H., Simeone D.M., Shelton A.A., Parmiani G., Castelli C. and Clarke M.F. *Phenotypic characterization of human colorectal cancer stem cells.* **Proc. Natl. Acad. Sci. USA (PNAS)**, 104:10158-10163 (2007). **PMCID: PMC1891215**

b. **Dalerba P.,** Guiducci C., Poliani P.L., Cifola I., Parenza M., Frattini M., Gallino G., Carnevali I., Di Giulio I., Andreola S., Lombardo C., Rivoltini L., Schweighoffer T., Belli F., Colombo M.P., Parmiani G. and Castelli C. *Reconstitution of hTERT expression rescues colorectal carcinoma cells from in vitro senescence: evidence against immortality as a constitutive trait of tumor cells.* **Cancer Research**, 65:2321-2329 (2005). **PMID: 15781646**

c. Rothenberg M.E., Nusse Y.M., Kalisky T., Lee J.J., **Dalerba P.,** Scheeren F.A., Lobo N.A., Kulkarni S., Sim S., Qian D., Beachy P.A., Pasricha P.J., Quake S.R. and Clarke M.F. *Identification of a c-kit+ colonic crypt base secretory cell that supports Lgr5+ stem cells in mice.* **Gastroenterology**, 142:1195-1205 (2012). **PMCID: PMC3911891**

d. Hisamori S., Mukohyama J., Koul S., Hayashi T., Rothenberg M.E., Maeda M., Isobe T., Valencia Salazar L.E., Qian X., Johnston D.M., Qian D., Lao K., Asai N., Kakeji Y., Gennarino V.A., Sahoo D., **Dalerba P.** and Shimono Y. *Upregulation of BMI1-suppressor miRNAs (miR-200c, miR-203) during terminal differentiation of colon epithelial cells.* **Journal of Gastroenterology**, 57:407-422 **(2022)**. **PMCID: PMC10091510**

4) Experimental validation of the *"cancer stem cell"* model in human breast cancer. The experimental platforms that I developed to enable studies on colon *cancer stem cells* were also applied to other human epithelial malignancies, including breast cancer. I contributed to several studies that elucidated the molecular networks (microRNAs transcription factors) regulating the biological properties of human breast *cancer stem cells* **(a-b)**, as well as the role of *cancer stem cell* populations in the metastatic dissemination of *triple-negative breast carcinomas* (TNBCs) using *patient-derived xenograft* (PDX) models **(c)**. I also contributed to the validation of new drug formulations for the suppression of breast cancer metastasis **(d).**

a. Shimono Y., Zabala M., Cho R.W., Lobo N.A., **Dalerba P.**, Qian D., Diehn M., Liu H., Panula S.P., Chiao E., Dirbas F.M., Somlo G., Pera R.A., Lao K. and Clarke M.F. *Downregulation of miRNA-200c links breast cancer stem cells with normal stem cells.* **Cell**, 138:592-603 (2009). **PMCID: PMC2731699**

b. Cai S., Kalisky T., Sahoo D., **Dalerba P.**, Qian D., Kong A., Yu J., Wang F., Chen E.Y., Scheeren F., Kuo A.H., Sikandar S.S., Hisamori S., van Weele L.J., Heiser D., Sim S., Lam J., Stephen R. Quake and Clarke M.F. *A quiescent Bcl11b^{high} stem cell population is required for maintenance of the mammary gland.* **Cell Stem Cell**, 20:1-14 **(2017)**. **PMCID: PMC5341693**

c. Liu H., Patel M.R., Prescher J.A., Patsialou A., Qian D., Lin J., Wen S., Chang Y.F., Bachmann Y.H., Shimono Y., **Dalerba P.**, Adorno M., Lobo N.A., Bueno J., Dirbas F.M., Goswami S., Somlo G., Condeelis J., Contag C.H., Gambhir S.S. and Clarke M.F. *Cancer stem cells from human breast tumors are involved in spontaneous metastases in orthotopic mouse models.* **Proc. Natl. Acad. Sci. USA (PNAS)**, 107:18115-18120 (2010). **PMCID: PMC2964232**

d. Li T., Akinade T., Zhou J., Wang H., Tong Q., He S., Rinebold E., Valencia Salazar L.E., Bhansali D., Zhong Y., Ruan J., Du J., **Dalerba P.,** and Leong K.W. *Therapeutic nanocarriers inhibit chemotherapy-induced breast cancer metastasis*. **Advanced Science (Weinheim),** e2203949 **(2022).** **PMCID: PMC9685442**

5) Establishment of *patient-derived xenograft* (PDX) lines for pre-clinical studies on the biology of human colon carcinomas. Over the last 15 years, I established a large collection of *patient-derived xenograft* (PDX) lines from human colorectal carcinomas (CRCs), many of which have been used as reference models for studies on the drug-sensitivity of *"cancer stem cell"* populations **(a)** and organoid cultures **(b)**.

a. Willingham S., Volkmer J.P., Gentles A.J., Sahoo D., **Dalerba P.,** Mitra S.S., Wang J., Contreras-Trujillo H., Martin R., Cohen J.D., Lovelace P., Scheeren F.A., Chao M.P., Weisskopf K., Tang C., Naik T.J., Volkmer A., Storm T.A., Mosley A.R., Edris B., Schmid S.M., Sun C.K., Chua M.S., Murillo O., Rajendran P.S., Cha A.C., Chin R.K., Kim D., Adorno M., Raveh T., Tseng D., Jaiswal S., Enger P.O., Steinberg G.K., Li G., So S.K., Majeti R., Harsh G.R., van de Rijn M., Teng N., Sunwoo J.B., Alizadeh A.A., Clarke M.F. and. Weissman I.L. *The CD47-signal regulatory protein alpha (SIRPa) interaction is a therapeutic target for human solid tumors.* **Proceedings of the National Academy of Sciences of the USA (PNAS)**, 109:6662-6667 (2012). **PMCID: PMC3340046**

b. Shimono Y., Mukohyama J., Isobe T., Johnston D.M, **Dalerba P.**, and Suzuki A. *Organoid culture of human cancer stem cells.* **Methods in Molecular Biology**, 1576:23-31 **(2019)**. **PMID: 27654995**

Complete List of Published Work in MyBibliography [ORCID: 0000-0002-8815-4981; h-index = 31]:
http://www.ncbi.nlm.nih.gov/myncbi/piero.dalerba.1/bibliography/48005821/public/