

BIOGRAPHICAL SKETCH

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NAME Mario C Deng MD	POSITION TITLE Director of Cardiac Transplantation Research		
eRA COMMONS USER NAME MARIODENG			
EDUCATION/TRAINING <i>(Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)</i>			
INSTITUTION AND LOCATION	DEGREE <i>(if applicable)</i>	YEAR(s)	FIELD OF STUDY
Hamburg University, Germany	Physicum	1976	Preclinical Studies
Berlin Free University, Germany	MD	1981	Medicine
Soltau & Bottrop Hospital, German	Spec Board	1989	Internal Medicine
Duisburg Heart Institute, Germany	Subsp Board	1990	Cardiology
Stanford University, CA		1992	Transpl & Mol Cardiology

A. Positions and HonorsPositions

1992-1995 Assistant Professor of Medicine, Muenster University, Germany
 1996-1999 Associate Professor of Medicine, Muenster University, Germany
 2000 Full Professor of Medicine (Apl.-Professor), Muenster University, Germany
 1992-2000 Medical Director, Heart Failure & Heart Transplant Program, Muenster University, Germany
 2000-pres Director of Cardiac Transplantation Research, Columbia University

Honors

1996-1999 Secretary, Heart Committee, German Transplantation Society
 1997-1999 Chairman, Working Group on Heart Transplantation, German Cardiac Society
 1997-Pres. Editorial Board, Journal of Heart and Lung Transplantation
 1998-1999 Chairman, German Physicians Assoc Committee on Heart Transplantation Allocation Rules
 1998-1999 Founding Chairman, Study Group on Adv Heart Failure (WGHF), European Soc. of Cardiology
 1998-Pres Fellow of the European Society of Cardiology (FESC)
 1999-Pres Fellow of the American College of Cardiology (FACC)
 2001-2005 International Society for Heart and Lung Transplantation Board of Directors

B. Selected peer-reviewed publications (in chronological order)Peer reviewed journal publications (out of >100)

- Deng MC**, Bell S, Huie P, Pinto F, St. Goar F, Hunt SA, Stinson EB, Sibley R, Hall BM, Valentine HA. Cardiac Allograft Vasculopathy: Relationship to Microvascular Cell Surface Markers and Inflammatory Cell Phenotypes on Endomyocardial Biopsy. **Circulation** 1995;91:1647-1654
- Müller FU, Boknik P, Horst A, Knapp J, Linck B, Schmitz W, Vahlensieck U, **Deng MC**, Scheld HH. The cAMP response element binding protein (CREB) is expressed and phosphorylated in the human heart. **Circulation** 1995;92:2041-2043
- Deng MC**, Kämmerling L, Erren M, Günther F, Kerber S, Assmann G, Breithardt G, Fahrenkamp A, Scheld HH. Relation of interleukin(IL)-6, tumor-necrosis factor- α , IL-2, and IL-2-receptor-levels to cellular rejection, allograft dysfunction and mortality early after cardiac transplantation. **Transplantation** 1995;60:1118-1124
- Deng MC**, Dasch B, Erren M, Wiedner M, Möllhoff T, Assmann G, Scheld HH. Impact of left ventricular dysfunction on cytokines, hemodynamics and outcome in bypass surgery. **Ann Thor Surg** 1996;62:184-90

5. **Deng MC**, Wilhelm M, Weyand M, Hammel D, Kerber S, Breithardt G, Scheld HH. Long term left ventricular assist device support: A novel pump rate challenge exercise protocol to monitor native left ventricular function. **J Heart Lung Transplant** 1997;16:629-635
6. Müller FU, Boknik P, Knapp J, Lüss H, Neumann J, Vahlensieck U, Böhm M, **Deng MC**, Scheld HH, Schmitz W. Quantification of the cAMP response element binding protein in ventricular nuclear protein from failing and nonfailing human hearts. **Biochem Biophys Res Comm** 1997;236:351-354
7. **Deng MC**, Wilhelm MJ, Scheld HH. Effects of exercise during long-term support with a left ventricular assist device. **Circulation** 1998;97:1212-1213
8. Baba HA, Schmid KW, Schmid C, Blasius S, Scheld HH, Böcker W, **Deng MC**. The relationship between heat shock protein 70, hemodynamics, and survival in the early period after heart transplantation. **Transplantation** 1998;65:799-804
9. **Deng MC**, Weyand M, Hammel D, Schmid C, Kerber S, Schmidt C, Breithardt G, Scheld HH. Selection and outcome of ventricular assist device patients: The Muenster experience. **J Heart Lung Transplant** 1998;17:817-825
10. Plenz G, Song ZF, Reichenberg S, Tjan TDT, Robenek H, **Deng MC**. Higher left ventricular interleukin-6-messenger-RNA expression in idiopathic dilated than in ischemic cardiomyopathy. **Thorac Cardiovasc Surgeon** 1998;46:213-216
11. **Deng MC**, Erren M, Roeder N, Dreimann V, Günther F, Kerber S, Baba HA, Schmidt C, Breithardt G, Scheld HH. T-Cell and monocyte subsets, inflammatory molecules, rejection and hemodynamics early after cardiac transplantation. **Transplantation** 1998;65:1255-1261
12. Schmid C, Hammel D, **Deng MC**, Weyand M, Baba HA, Tjan TDT, Drees G, Roeder N, Schmidt C, Scheld HH. Ambulatory care of patients with left ventricular assist devices. **Circulation** 1999;100(suppl II):II-224-II-228
13. **Deng MC**, Tjan TDT, Asfour B, Gradaus R, Böcker D, Loick HM, Baba HA, Breithardt G, Scheld HH, Borggreffe M, Hammel D. Combining non-pharmacological therapies for advanced heart failure: The Muenster experience with the assist device - defibrillator combination. **Am J Cardiol** 1999;83:158D-160D
14. Plenz G, Baba HA, Erren M, Scheld HH, **Deng MC**. Reversal of myocardial interleukin-6-mRNA expression following longterm left ventricular assist device support for myocarditis-associated low output syndrome. **J Heart Lung Transplant** 1999;18:923-924
15. Baba HA, Schmid KW, Takeda A, Wichter T, Erren M, **Deng MC**. Metallothionein: Localization in human transplant endomyocardium and relation to cytokines and allograft function. **J Heart Lung Transplant** 1999;18:963-971
16. Baba HA, Schmid C, August C, Schmid KW, Plenz G, Scheld HH, **Deng MC**. Reversal of metallothionein expression of the human myocardium after prolonged left ventricular mechanical support. **J Heart Lung Transplant** 2000;19:668-674
17. **Deng MC**, De Meester JMJ, Smits JMA, Heinecke J, Scheld HH, on behalf of COCPIT Study Group. The impact of heart failure severity on outcome in cardiac transplant candidates. **Br Med J** 2000;321:540-545
18. **Deng MC**, Loebe M, El-Banayosi A, Gronda E, Jansen PGM, Viganò M, Wieselthaler G, Reichart B, Vitali E, Pavie A, Mesana T, Loisançe D, Wheeldon DR, Portner PM. Mechanical circulatory support for advanced heart failure: effect of patient selection on outcome. **Circulation** 2001 103: 231 - 237
19. Seiler P, Plenz G, **Deng MC**. The Interleukin-6 cytokine system in embryonic development, embryo-maternal interactions and cardiogenesis. **Eur Cytokine Netw** 2001;12:15-21
20. Plenz G, Song ZF, Tjan TDT, Koenig C, Baba HA, Erren M, Flesch MD, Wichter T, Scheld HH, **Deng MC**. Activation of the cardiac interleukin-6 system in advanced heart failure. **Eur J Heart Fail** 2001;3:415-421
21. Rothenburger M, Soeparwata R, **Deng MC**, Berendes E, Tjan TDT, Wilhelm MJ, Erren M, Boecker D, Scheld HH. The impact of endotoxin/anti-endotoxin core antibody-ratio on cytokine release and clinical events following cardiac surgery. **J Am Coll Cardiol** 2001;38:124-130
22. Grabellus F, Schmid C, Levkau B, Breukelmann D, Halloran PF, August C, Takeda N, Takeda A, Wilhelm M, **Deng MC**, Baba HA. Reduction of hypoxia-inducible hemoxygenase-1 in the myocardium after left ventricular mechanical support. **J Pathology** 2002;197:230-237
23. Plenz G, Eschert H, Erren M, Wichter T, Boehm M, Flesch M, Scheld HH, **Deng MC**. The IL6/IL6-receptor system is activated in donor hearts. **J Am Coll Cardiol** 2002;39:1508-1512
24. Smits JMA, De Meester J, **Deng MC**, Scheld HH, Hummel M, Schoendube F, Haverich A, Vanhaecke J, van Houwelingen HC, on behalf of the COCPIT study group and the Eurotransplant Heart Transplant

Programs. Mortality rates after heart transplantation. How to compare centre-specific outcome data? **Transplantation** 2003;75:90-96

25. Asai T, Baron HM, von Bayern MP, Sakaguchi T, Arrecubieta C, Cespedes CA, Lee MH, Lowy FD, Marboe CC, **Deng MC**, Naka Y. A mouse aortic patch model for mechanical circulatory support. **J Heart Lung Transplant**. 2005;24:1129-32.
26. Taylor DO, Edwards LB, Boucek MM, Trulock EP, **Deng MC**, Keck BM, Hertz MI. Registry of the International Society for Heart and Lung Transplantation: Twenty-second Official Adult Heart Transplant Report-2005. **J Heart Lung Transplant** 2005;24:945-55.
27. **Deng MC**, Edwards LB, Taylor DO, Hertz MI, Rowe AW, Keck B, Kormos RL, Naftel D, Kirklin J. Mechanical circulatory support device database of the international society for heart and lung transplantation: third annual report-2005. **J Heart Lung Transplant** 2005.

Invited reviews (selection):

1. **Deng MC**, Roeder N, Plenz G, Erren M, Brisse B, Soeparwata R, Scheld HH. Proinflammatory cytokines and cardiac pump function. **Z Kardiol** 1997;86:788-802
2. **Deng MC**, Baba HA, Erren M, Plenz G, Kerber S, Breithardt G, Scheld HH. Can molecular techniques be applied to improve the endomyocardial biopsy diagnosis of acute rejection? **Transplant Proc** 1998;30:881-883
3. **Deng MC**, Smits JMA, DeMeester J, Hummel M, Schoendube F, Scheld HH. Heart Transplantation is indicated only in the most severely ill patient: Perspectives from the German Heart Transplant Experience. **Curr Opin Cardiol** 2001; 16:97-104
4. **Deng MC**, Smits JMA, Packer M. Selecting patients for heart transplantation: which patients are too well for transplant? **Curr Opin Cardiol** 2002;17:137-144
5. **Deng MC**. Cardiac Transplantation. **Heart** 2002;87:177-184
6. **Deng MC**, Ascheim D, Edwards NM, Naka Y. Endstage Heart Failure – Which Options? **Eur Heart J Supplements**;2002 (Supplement D):D122-130
7. **Deng MC**, Plenz G, Labarrere C, Marboe C, Baba HA, Erren M, Itescu S. The Role of IL6 Cytokines in Clinical Cardiac Allograft Rejection. **Transplant Immunol** 2002;9:115-120
8. **Deng MC**. The Mechanical Circulatory Support Device Database of the International Society for Heart and Lung Transplantation. **Curr Opin Cardiol** 2003;18:147-152
9. **Deng MC**, Smits JMA, Young JB. Proposition: The Benefit of Cardiac Transplantation in stable Outpatients with Heart Failure should be tested in a Randomized Trial. **J Heart Lung Transplant** 2003;22:113-117
10. Cadeiras M; Von Bayern Manuel P; Pal A; Asai T; Naka Y; **Deng, MC**. Destination therapy: an alternative for end-stage heart failure patients not eligible for heart transplantation. *Current Opinion in Organ Transplantation*. 2005;10(4):369

Invited editorials (selection)

1. **Deng MC**. The challenges of generating evidence to guide mechanical circulatory support-based management of advanced heart failure. **Eur Heart J**. 2005;26:953-5.
2. **Deng MC**. Heart transplantation: the increasing challenges of evidence-based decision-making. **J Am Coll Cardiol** 2004;43:803-5.

Project-related publications (selection)

1. **Deng MC**, Mehra MC, Eisen HJ, Billingham M, Berry G, Marboe G, Itescu S, Johnson F, Kobashigawa J, Wohlgemuth JG, Quertermous T, Hunt S. Cardiac allograft monitoring using a novel clinical algorithm based on peripheral leukocyte gene expression profiling (abstr). **Circulation** 2003;108:IV-398
2. Mehra MC, Kobashigawa J, Hunt S, Eisen HJ, Starling R, Johnson F, Murali S, Zeevi A, Pauly D, Wohlgemuth JG, Morris MS, Woodward R, **Deng MC**. Molecular testing and prediction of clinical outcome in heart transplantation: A prospective multicenter trial (abstr). **J Heart Lung Transplant** 2004;23:S106
3. **Deng MC**, Mehra M, Hunt S, Valentine H, Miner R, Phillips J, Wohlgemuth JG, Chernoff D, Woodward E, Eisen HJ. Leukocyte gene expression signature of CMV viremia in cardiac allograft recipients is distinct from that seen during allograft rejection (abstr). **Am J Transplant** 2004;4e(suppl. 8):455
4. Marboe CC, Billingham M, Eisen HJ, **Deng MC**, Baron HM, Mehra M, Hunt SA, Wohlgemuth J, Mahmood I, Prentice J, Berry G. Nodular endocardial infiltrates (Quilty lesions) cause significant variability in the

diagnosis of ISHLT rejection grades 2 and 3A in endomyocardial biopsies from cardiac allograft recipients. **J Heart Lung Transplant** 2005;24:S219-S226

5. Evans RW, Williams GE, Baron HM, **Deng MC**, Eisen HJ, Hunt SA, Khan MM, Kobashigawa JA, Marton EN, Mehra MR, Mital SR. The economic implications of noninvasive molecular testing for cardiac allograft rejection. **Am J Transplant** 2005;5:1553-1558
6. **Deng MC**, Eisen HJ, Mehra RM, Billingham M, Marboe CC, Berry G, Kobashigawa J, Johnson FL, Starling RC, Murali S, Pauly DF, Baron H, Wohlgemuth JG, Woodward RN, Klingler TM, Walther D, Lal PG, Rosenberg S, Hunt SA, for the CARGO Investigators. Non-invasive detection of rejection in cardiac allograft recipients using gene expression profiling. **Am J Transplant** (Accepted for publication)
7. **Deng MC**, Cadeiras M, Baron HM, Marboe, CC, Starling RC, Eisen H, Valentine H, Hunt SA, Kobashigawa J, Mehra M, Pauly DF, Murali S, Mital S, Berry G, Billingham M, Wohlgemuth J, Dedrick R. Early Detection of Cardiac Allograft Vasculopathy Through Gene Expression Profiling - Insights of the CARGO Study (In press)
8. Zeevi A, Dedrick RL, Rosenberg S, Cadeiras M, **Deng MC**. Gene Expression Profiles of Peripheral Blood Cells in Acute Cellular Cardiac Rejection Reflect Multiple Molecular Pathways (In press)

C. Research Support

Cardiac Allograft Rejection Gene Expression Observation (CARGO) study

Sponsor: XDx Inc, South San Francisco

Role: Principal Investigator.

Period: Sept 2001-Ongoing

Summary: The longterm objective is to develop a diagnostic gene set based on a specifically developed leukocyte gene chip to noninvasively diagnose cardiac allograft rejection. The hypothesis to be tested is that there exist peripheral blood mononuclear cell gene expression patterns that allow for sensitive and specific detection of rejection.

Biology of Human Long-Term Mechanical Circulatory Support

Sponsor: NHLBI (US\$17 Mill) Specialized Center for Clinically Oriented Research (SCCOR)

Role: Co-Principal Investigator

Period: January 2005-December 2010

Summary: Infection is the most common cause of death in long-term Mechanical Circulatory Support-Device-supported heart failure patients, while both infection and bleeding complications are the major drivers of cost. Cell transplantation offers the promise of actively promoting regeneration of myocardial function, allowing potential temporary device use as a "bridge to recovery" rather than permanent implantation as a destination. These questions are addressed in this translational SCCOR which consists of clinical and basic research components.

The Mechanical Circulatory Support Device Database of the ISHLT

Sponsor: International Society for Heart and Lung Transplantation (ISHLT)

Role: Medical Director

Period: Jan 2002-June 2005

Summary: The longterm objective is to develop a web-based database to capture all mechanical circulatory support device implantations worldwide.

The Role of Glycoprotein 130 in Early Remodeling After Myocardial Infarction

Sponsor: AHA

Role: Principal Investigator

Period: July, 2001 June, 2005

Summary: The longterm objective is to elucidate the role of interleukin-6 cytokines in the process of heart failure remodeling. The hypothesis to be tested is that ventricular restricted disruption of the gp130 system accelerates deleterious early remodeling by abrogating an important myocyte survival pathway, and that consequently, gp130-dependent cytokines may represent a novel therapeutic strategy for preventing heart failure after myocardial infarction.