

Curriculum Vitae:

Prof. em. Dr. med. Walter G. Land
University of Strasbourg
France



Birth

Born in October 3, 1938, Eitorf, Germany.

Study

1958-1964: Medical Study in Freiburg, Düsseldorf and Edinburgh (Scotland)

Internship

1964– 1966: Hospitals of the Medical Academy Düsseldorf, Germany

German Federal Armed Force (Conscription)

1966– 1967: Surgeon Major deployed in Cologne



Education

1967-1971: Experimental Surgery/ Immunology/Organ Transplantation from 1967 to 1971 in the Institute for Surgical Research, University of Munich, LMU (Prof. Dr. Dr. Walter Brendel),
 1972-1975: General Clinical Surgery in City Hospital, Munich-Schwabing.

Positions Held → Holding

1975-2004: Head of the Transplantation Centre, Department of Surgery, Klinikum Innenstadt Munich / Klinikum Großhadern, University of Munich (LMU).

Since 1979: Professor of Surgery and Transplantation Surgery, Medical Faculty, University of Munich (LMU).

1986-2003: Head of the Division of Transplantation Surgery, Department of Surgery, Klinikum Großhadern, University of Munich (LMU).

01. 04. 2004 until present: Status as Emeritus-Professor at the University of Munich: Retirement from the University of Munich (LMU).

2004-2012: Visiting Professor, Senior Consultant, and European Representative of the Başkent University Ankara, Turkey, and Head of the University's Liaison Office in Germany; advising responsibilities in education, research and patient care.

2003 until present: Executive → Honorary → Executive → Honary President of the German Academy of Transplantation Medicine.

Sept. 2013 – Sept 2016: Professeur Conventionné, University of Strasbourg, Molecular ImmunoRheumatology, INSERM UMR S1109; LabEx Transplantex, Research Center for Immunology and Hematology, Faculty of Medicine, Federation Translational Medicine of Strasbourg, University of Strasbourg, 67085 Strasbourg Cedex, France

Sept. 2016 until present: Scientific Collaborator and Advisor, Molecular ImmunoRheumatology, INSERM UMR S1109; LabEx Transplantex, Research Center for Immunology and Hematology, Faculty of Medicine, Federation Translational Medicine of Strasbourg, University of Strasbourg, 67085 Strasbourg Cedex, France

Foundations (Founder/Founding Member)

1976: Munich Transplant Centre;

Concept of Organ Procurement in peripheral hospitals: “The Munich Model” (Founder)

1982: European Society for Organ Transplantation (ESOT) (Founding Member)

1984: German Organ Transplantation Foundation (DSO) (Co-Founder)

1986: Journal: Transplant International (Official Journal of ESOT) (Founder)

**1989: European College of Organ Transplantation (Founding Member)
(former: HESPERIS: national representative until 2004)**

1992: German Transplantation Society (Founding Member)

1993: German (Walter-Brendel) College for Organ Transplantation (Founder)

1999: German Academy of Transplantation Medicine (Founder)

2000: First German Official Clinic for Post-transplant Care of Transplant Patients (Bad Heilbrunn) (Founder)

2005: International Society of Transplantation and Innate Immunity (“STAI”) (Founder)

2006: Society of Innate Immunity (“SII”) (Founder) (Currently not operating)

2016: International DAMPs Association (“IDA”), Co-Founder

Societies, Academies (Membership, Presidency)

International Transplantation Society (Member)

American Society of Transplant Surgeons (Honorary Member)

European Society for Organ Transplantation (President 1985/1987, Member)

European Academy of Tumor Immunology - EATI (since 2016: Honorary Member)

Southern African Transplantation Society (Honorary Member)

Society of Innate Immunity (“SII”) (since March 2006: President; since May 2007: Past President); (Society currently not functioning)

International DAMPs Association (“IDA”), (since November 2016: Honorary President)

European Society of Experimental Surgery (Member)

European College of Organ Transplantation (Founding Member)

German Academy of Transplantation Medicine (President in 1999, Honorary President from 2003 until 2008, re-elected as President from 2008 until 2013, since 2013 Honorary President again)

German Association of Transplant Centers (President: 1989/90, Member)

German Transplantation Society (Founding Member)

German College of Organ Transplantation (Head and Director until 2003)

Society for Immunology (Member)

The German National Academy of Sciences LEOPOLDINA (elected Member)

European Academy of Science and Arts (EASA) (elected Member)

Awards

- 1991: Erich – Lexer - Award of the German Society of Surgery
- 1996: German Federal Medal, 1. Class
- 1997: Bavarian State Medal for Social Merits
- 2000: Silver Medal (= Millennium Medal) of the International Transplantation Society
- 2005: Maharshi Sushruta Award in Transplantation Biology (IKDRC & ITS, Ahmedabad, India)

International Journals – Editorial Board, Advisory Boards

- Frontiers Research Topic 2015: Wound recognition across the tree of life (Co-Editor);
- Frontiers Research Topic 2015/2016: Danger signals triggering immune response and inflammation (Co-Editor);
- Clinical Transplantation (membership meanwhile expired)
- Saudi Journal of Kidney Diseases and Transplantation (membership meanwhile expired)
- Transplantation (membership meanwhile expired)

Books – Authorship/Editorship

Land W (Ed.):

Transplantationszentrum München 1976-1982. Ludwig-Maximilians-Universität München, 1982.

Land W and Landgraf R (Eds.):

Segmental Pancreatic Transplantation. International Workshop Munich Spitzingsee: Hormone and Metabolic Research Suppl. Series Vol. No.13, Georg Thieme Verlag Stuttgart, New York, 1983.

Brynger H, Hammer C, Land W, Slapak M (Eds.):

Organ Transplantation. ESOT-Congress Munich, November 1985. Transplantation Proceedings XVIII: No 5, 1986.

Land W, Landgraf R (Eds.):

The world experience in clinical pancreas transplantation. 2nd International Workshop on Clinic Pancreatic Transplantation, Munich/Spitzingsee December 1986. Transplantation Proceedings XIX: No 4, 1987.

Land W (Ed.):

Optimal Use of Sandimmun® in Organ Transplantation. Springer Verlag Berlin-Heidelberg, 1987.

Land W, Dossetor J.B. (Eds.):

Organ Replacement Therapy: Ethics, Justice, Commerce. First Joint Meeting of ESOT and EDTA/ERA, Munich December 1990, Springer-Verlag Berlin-Heidelberg, 1991.

Messmer K., Menger MD, Land W (Eds.):

Microcirculation in Organ Transplantation. 12th Bodensee Symposium on Microcirculation, June 1993. Progress in Applied Microcirculation. S. Karger Publishers Inc. Basle, 1994.

Land W (Ed.): Breitner: Chirurgische Operationslehre, 2. Auflage, Band XII:

Transplantationschirurgie. Urban & Schwarzenberg München, 1995.

Collins GM, Dubernard JM, Land W, Persijn, G (Eds.):

Procurement and Preservation of Vascularized Organs. Kluwer Academic Publishers, 1997.

Land W (Ed.):

20 Jahre Transplantationszentrum Klinikum Großhadern, Unidruck München, 1998.

Land W (Ed.):

From Immunosuppression to Tolerance: Visions of the Future. Transplantation Proceedings 2000; 32: N = 1A.

Land W, Weir M (Eds.):

Approaches to Improve Allograft Half-life (III). Transplantation Proceedings 2001: 33.

Land W (Author and Editor):

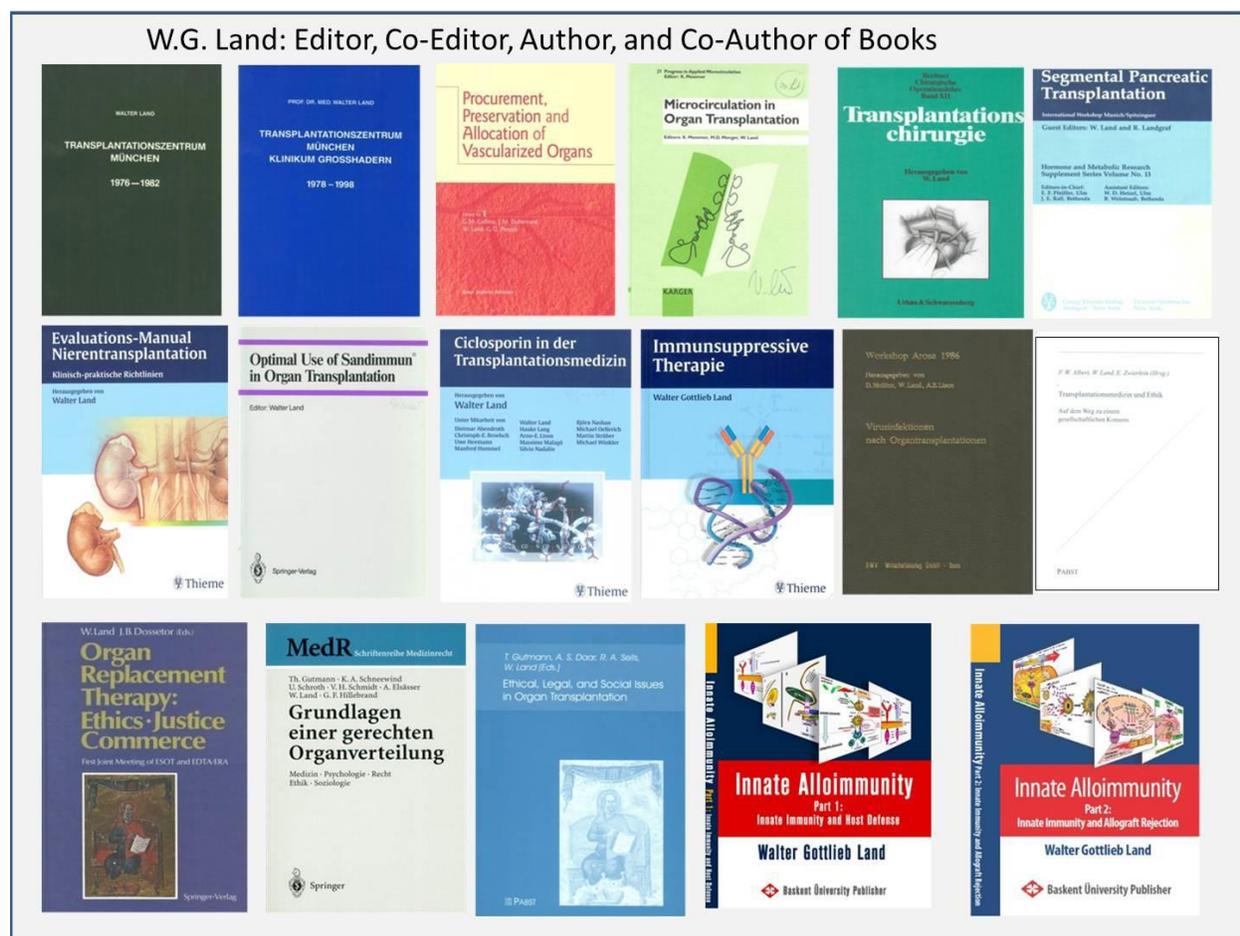
Evaluations-Manual Nierentransplantation. Georg Thieme-Verlag Stuttgart-New York, 2004.

**Gutmann T, Daar AS, Sells RA, Land W (Eds.):
Ethical, Legal, and Social Issues in Organ Transplantation. Pabst Science Publishers, 2004.**

**Land WG (Author and Editor):
Monograph: Immunsuppressive Therapie. (1.Edition of a Book in German Language)
Georg Thieme-Verlag, Stuttgart, New York, 2006.**

**Land WG (Author and Editor):
Monograph: "Innate Alloimmunity" Part 1: Innate Immunity and Host Defense.
Başkent University-Pabst Science Publishers, 2011**

**Land WG (Author and Editor):
Monograph: "Innate Alloimmunity" Part 2: Innate Immunity and Allograft Rejection.
Başkent University-Pabst Science Publishers, 2011**



Clinical Experience

Collection of personal clinical experience in organ transplantation over a period of more than 25 years, in the position of Head of the Department of Transplantation Surgery at the University of Munich; the large-scale programme included experience with ~ 4000 kidney transplanted patients, including ~200 living donor kidney transplantations, as well as with ~ 400 pancreas transplanted diabetic patients. The clinical responsibilities as the Head of the Department did not only cover all surgical activities but included also supervision of all activities in the fields of clinical immunology (e.g. immunosuppression), urology, nephrology (dialysis modalities) and infectious diseases, that is, medical disciplines which encompass and define the field of Transplantology.

Seminal and Innovative Contributions to the Field of Organ Transplantation

From 1967 until 2011, the scientific activities in the field of organ transplantation encompass more than 2000 documented contributions (including books, book chapters, reviews, original articles, and editorials, abstracts of talks, comments, invited lectures, oral talks, and press conference remarks). In the following, only the most important contributions are noted.

1) 1967-1970:

Development, own production, experimental and first clinical applications of horse anti-lymphocyte globulin (ALG) (together with W. Brendel and R. Pichlmayr, University of Munich).

Clinical use: Introduction of intravenous administration of ALG into the clinic (world-wide first clinical trials). **Treatment, in own responsibility, of the world-wide first successfully heart-transplanted patient with intravenous ALG (in collaboration with C. Barnard and M.C. Botha, Cape Town, South Africa, 1968).** Participation in first clinical trials with intravenously administered ALG treatment in heart-, liver-, and kidney transplanted patients. Participation in first clinical trials with ALG treatment in patients suffering from autoimmune diseases.

Development of a clinical protocol to induce successfully immunological tolerance against horse IgG as a means to prevent sensitization of ALG-treated patients against the foreign xenogeneic serum protein antigen.

Experimental use: First successful treatment of an experimental autoimmune disease (EAE) with antilymphocyte serum.

(Sources: Brendel W, Land W: Dtsch Med Wschr 1968; 93: 2309, Land W et al: Klin Wschr 1969; 47: 633, Land W et al: Transplantation 1969; 8: 248, Brendel W, Land W: Lancet 1969; 2: 1141, others).

2) 1970-1976:

Discovery and first description of a non-specific, antibody-independent principle involved in hyperacute xenograft rejection by emphasizing a role of the alternative pathway in complement activation during hyperacute xenograft rejection.

Prior to this discovery it was generally believed that hyperacute xenograft rejection was strictly caused by the action of preformed xeno-antibodies which in turn activated complement in terms of the classical pathway. This discovery of a non-immunological principle - besides others - made the realization of successful clinical xenotransplantation extremely difficult until today. (Sources: Land W et al: Transplant Proc 1971; 3: 888, Land W, together with Schilling A et al: Surg Gynec Obstet 1976; 142: 29; others).

3) 1970-1976:

Establishment, extension and further optimization of the “Munich Modell” of Organ Procurement:

Organ procurement was performed in close cooperation between The Munich Transplant Center and non-transplanting Bavarian Hospitals by installing 2 mobile physician teams positioned at the Munich Transplant Center: first, a Neurologist team equipped with a transportable EEG to diagnose and document brain death in patients hospitalized in outside-hospitals; second, a transplant surgeon/transplant technician team to remove organs from donors in the operation theatre of those hospitals, after brain death was confirmed and the relatives of the donor had given informed consent.

4) 1979-1987:

(I) Active participation in the global clinical development of ciclosporin (CsA):

Participation in the first clinical CsA-trial (European CsA-trial) and investigator in own centre trials (Land W et al. Ciclosporin in renal transplan- tation. Prog Allergy 1986; 38: 293).

(II) Development of a new technique in clinical segmental pancreatic transplantation – by using prolamine („Ethibloc“) for duct obstruction. Using this surgical technique – in conjunction with the early use of cyclosporine as an immunosuppressant – our group succeeded for the first time world-wide in reaching a 1-year pancreatic allograft survival rate by 60%. (Land W et al: Transplant Proc 1980;12 (Suppl. 2): 76, Land W et al: Transplant Proc 1987; 19 (Suppl. 4): 75, others).

(III) 1985: First transplantation of a liver in Bavaria, Germany (together with H. Denecke)

5) 1984-1986:

Original development and first clinical application of the so-called “Triple Drug Therapy” as the ‘sheet anchor’ of immunosuppression.

The Triple-Drug-Therapy concept was developed independent from the Portsmouth Group and consisted of a combination of low dose ciclosporin with azathioprine and corticosteroids. By introducing this protocol which minimized the nephrotoxic side effect of ciclosporin, the calcineurin-inhibiting drug became the “sheet anchor” of immunosuppression and emerged as the most popular immunosuppressive regimen world-wide until today. (Land W et al: Progress in Allergy 1986; 38:293, Land W: in: “Optimal Use of Sandimmun in Organ Transplantation” Springer-Verlag 1987, others).

6) 1990-1991:

Discovery and first description of acute allograft rejection episode as a risk factor and predictor for chronic renal allograft dysfunction. Later on, partially as a consequence of this discovery - this parameter (= the incidence of an acute rejection crisis) became a popular primary end-point in many clinical trials with new immunosuppressive drugs. The idea here was that a reduction in the incidence of acute rejection episodes would automatically be associated with a beneficial effect on long-term allograft outcome. (Land W et al: Presentation during the Congress of the International Transplantation Society in San Francisco, 1990 (Abstract-Vol.), and in: Transplant Proc 1991; 23: 1244, others).

7) 1994 - 1996:

Discovery and first description of the phenomenon that a non-specific injury to a human allograft (and not primarily its degree of foreignness) initiates and induces a specific acute alloimmune response and contributes to the development of chronic transplant failure (allo-atherosclerosis). (Land W et al: Transplantation 1994; 57: 211, Land W, Messmer K: Transplantation Rev. 1996;10: 108 and 236, others).

In principle, this discovery “Injury induces Immunity” revealed the biological phenomenon that it is the tissue injury which is crucial to induction of immune responses in general.

The discovery has led to the “Injury Hypothesis” posed in 1994, holding that any allograft injury activates the donor’s and recipient’s innate immune system by initiating pathways ultimately resulting in allograft rejection.

Conveyed to general immunology, the “Injury Hypothesis” now holds that tissue injury activates the innate immune system that - when foreign antigens are present - induces an adaptive immune response. The discovery that tissue injury is crucial to induction of immune responses as well as the “Injury Hypothesis” based on this discovery have meanwhile been confirmed by many studies and are well accepted by most immunologists and transplantologists.

8) 1997-2001:

First description and publication of the feasibility of a clinically successful mycophenolate mofetil (MMF)-based, calcineurin inhibitor-free immunosuppressive therapy (e.g.: calcineurin-inhibitor (CNI) - free, ATG-based and MMF-based induction - / maintenance therapy, particularly: MMF monotherapy) in selected groups of kidney transplanted patients. Notably, negative adverse side effects of CNI-therapy (renal dysfunction, hypertension, hyperlipidemia, others) could be minimized by using this protocol. This original clinical work encouraged and initiated the design and performance of several subsequent international multicentre clinical control trials on nephrotoxicity-free immunosuppressive protocols in kidney transplanted patient. The results of those control trials totally confirmed the original Munich experience. (Land W: Presentation at the 1st Internat. Congress on Immunosuppression, Orlando, USA 1997, and in: Transplant Proc 1998; 30: 1580, Land W et al: Transplant Proc 2001; 33: 29S,others).

9) 2002:

Introduction of “Innate Immunity” into the field of organ transplantation (Land W: Transplantation Rev. 2002; 16: 19; Land W: Eur Surg Res 2002; 34: 160). Besides others, first worldwide proposal that postischemic reperfusion injury activates the innate immune system and is mediated by Toll-like receptors.

10) 2002 - 2005:

First more precise description, hypothesis, and discussion of the decisive role of innate immunity in acute and chronic allograft rejection processes (alloimmunity and alloatherosclerosis): The initial injury to an allograft activates - via induction of damage- associated molecular patterns (“DAMPs”) - the donor’s and recipient’s innate immune systems (= activation of Toll-like-receptor (TLR) - bearing dendritic cells and vascular cells) that subsequently induce and expand the alloimmune response of the recipient and contribute to the development of allograft arteriosclerosis.

Of note, in these publications, the terms “Innate Alloimmunity”(2002) and “DAMPs” (2003) were described and coined for the first time (Land W: Eur Surg Res 2002; 34: 160, Land W: Transplant Rev 2002; 16: 19, Transplant Rev 2003; 17: 31, Transplant Rev 2003; 17: 67, Transplantation (Invited Overview) 2005; 79: 505, Saudi Journal of Kidney Diseases and Transplantation 2005; 16: 520-539).

11) 2007:

Organisation and Performance of the First International Congress of the Society of Innate Immunity in Ankara, Turkey, May 2007 (as President of the Society of Innate Immunity and Chairman of the Congress). This was the first “Integrational Meeting” during which, for the first time, researchers, investigators, and clinicians working in the different fields of innate immunity (including transplant medicine) gathered to exchange their experience.

Unfortunately, the Society is currently not operating any more.

12) 2011:

Publication of the Monograph: Innate Alloimmunity (Part 1: Innate Immunity and Host Defense; Part 2: Innate Immunity and Allograft Rejection).

These 2 books are comprehensive in its coverage of the field of innate immune pathways leading to adaptive alloimmunity and allograft rejection. The work is an essential resource for every transplant physician or researcher providing them a roadmap for transplantation science into the next decade.

A Selection of Publications from PubMed, 2013-1994

- Heil M, Land WG, Tör M. Editorial: Wound Recognition across the Tree of Life. *Front Plant Sci.* 2016 Sep 1; 7: 1319.
- Land WG, Agostinis P, Gasser S, Garg AD, Linkermann A. DAMP – Induced Allograft and Tumor Rejection: The Circle is Closing. *Am J Transplant.* 2016 Aug 16. doi: 10.1111/ajt.14012.
- Land WG, Agostinis P, Gasser S, Garg AD, Linkermann A. Transplantation and Damage-Associated Molecular Patterns (DAMPs). *Am J Transplant.* 2016 Jul 16. doi: 10.1111/ajt.13963.
- Garg AD, Galluzzi L, Apetoh L, ... **Land WG**, et al. Molecular and Translational Classifications of DAMPs in Immunogenic Cell Death. *Front Immunol.* 2015 Nov 20; 6: 588.
- Land WG. The Role of Damage-Associated Molecular Patterns in Human Diseases: Part I - Promoting inflammation and immunity. *Sultan Qaboos Univ Med J.* 2015;15:e9-e21.
- Land WG. The Role of Damage-Associated Molecular Patterns (DAMPs) in Human Diseases: Part II: DAMPs as diagnostics, prognostics and therapeutics in clinical medicine. *Sultan Qaboos Univ Med J.* 2015;15: e157-70.
- Heil M, Land WG. Danger signals - damaged-self recognition across the tree of life. *Front Plant Sci.* 2014 Oct 31; 5: 578.
- Land WG. Chronic allograft dysfunction: a model disorder of innate immunity. *Biomed J* 2013; 36: 209-28.
- Land WG. Transfusion-related acute lung injury: the work of DAMPs. *Transfus Med Hemother* 2013; 40: 3-13.
- Land WG, Messmer K. The danger theory in view of the injury hypothesis: 20 years later. *Front Immunol* 2012; 3: 349.
- Land WG. Future immunosuppression in organ transplantation: treating the innate immune system of the deceased donor - start tomorrow. *Exp Clin Transplant* 2012; 10: 195-208.
- Land WG, Messmer K. Tissue injury-induced initiation of the adaptive immune response. *Transplantation* 2012; 93: e38.
- Land WG. Emerging role of innate immunity in organ transplantation part II: potential of damage associated molecular patterns to generate immunostimulatory dendritic cells. *Transplant Rev (Orlando)* 2012; 26: 73-87.
- Land WG. Emerging role of innate immunity in organ transplantation: part I: evolution of innate immunity and oxidative allograft injury. *Transplant Rev (Orlando)* 2012; 26: 60-72.
- Land WG. Emerging role of innate immunity in organ transplantation part III: the quest for transplant tolerance via prevention of oxidative allograft injury and its consequences. *Transplant Rev (Orlando)* 2012; 26: 88-102.
- Land WG. Role of heat shock protein 70 in innate alloimmunity. *Front Immunol* 2011; 2: 89.
- Land WG, Gutmann T, Daar AS. Emerging science, emerging ethical issues: who should fund innate alloimmunity-suppressing drugs? *Acta Chir Belg* 2008; 108: 73-82.
- Squifflet JP, Malaise J, Van Ophem D, Marcelis V, **Land WG**; EuroSPK Study Group. The history of the EuroSPK - Study Group. *Acta Chir Belg* 2008; 108: 67-9.
- Land WG. My most interesting cases. *Clin Transpl* 2006: 555-7.

Land WG. Injury to allografts: innate immune pathways to acute and chronic rejection. *Saudi J Kidney Dis Transpl* 2005; 16: 520-39.

Land WG. Innate immunity-mediated allograft rejection and strategies to prevent it. *Transplant Proc* 2007; 39: 667-72.

Land WG. Immunosuppressive strategies in organ transplantation in the light of innate immunity. *Exp Clin Transplant* 2006; 4: 406-15.

Land WG. Ageing and immunosuppression in kidney transplantation. *Exp Clin Transplant* 2004; 2: 229-37.

Land WG. The role of postischemic reperfusion injury and other nonantigen-dependent inflammatory pathways in transplantation. *Transplantation* 2005; 79: 505-14.

Arbogast HP, Hoffmann JN, Illner WD, Hillebrand GF, Fischereder M, Jauch KW, **Land W**. Calcineurin inhibitor-free immunosuppressive strategy in elderly recipients of renal allografts from deceased donors: 1-year results from a prospective single center trial. *Transplant Proc* 2009; 41: 2529-32.

Land W, Vincenti F. Toxicity-sparing protocols using mycophenolate mofetil in renal transplantation. *Transplantation* 2005; 80: S221-34.

Malaise J, Arbogast H, Illner WD, Tarabichi A, Dieterle C, Landgraf R, **Land W**, Van Ophem D, Squifflet JP; EUROSPK Study Group. Simultaneous pancreas-kidney transplantation: analysis of rejection. *Transplant Proc* 2005; 37: 2856-8.

Fischereder M, **Land W**. Etiology of cardiovascular diseases in the transplant population: will the choice of immunosuppressant matter? *Transplant Proc* 2004; 36: 1993-4.

Land W, Gutmann T. Breaking barriers in living donor organ transplantation: a European perspective. *Transplant Proc* 2003; 35: 926-9.

Land W. Mycophenolate mofetil monotherapy in patients who have had kidney transplants. *Transplantation* 2003; 75: 2159.

Land W, Malaise J, Sandberg J, Langrehr J; EUROSPK Study Group. Tacrolimus versus cyclosporine in primary simultaneous pancreas-kidney transplantation: preliminary results at 1 year of a large multicenter trial. *Transplant Proc* 2002; 34: 1911-2.

Land W. Postischemic reperfusion injury to allografts - a case for 'innate immunity'? *Eur Surg Res* 2002; 34: 160-9.

Lederer SR, Kluth-Pepper B, Schneeberger H, Albert E, **Land W**, Feucht HE. Impact of humoral alloreactivity early after transplantation on the long-term survival of renal allografts. *Kidney Int* 2001; 59: 334-41.

Land W. Possible role of postischemic reperfusion injury as initiator of allorecognition/alloactivation. *Transplant Proc* 1998; 30: 4269.

Hofmann GO, Kirschner MH, Brauns L, Wagner FD, **Land W**, Bühren V. Vascularized knee joint transplantation in man: a report on the first cases. *Transpl Int* 1998; 11 Suppl 1: S487-90.

Land W. Future challenges in immunosuppression. *Transplant Proc* 1998; 30: 1580-4.

Land W, Zweier JL. Prevention of reperfusion-induced, free radical-mediated acute endothelial injury by superoxide dismutase as an effective tool to delay/prevent chronic renal allograft failure: a review. *Transplant Proc* 1997; 29: 2567-8.

Gutmann T, **Land W**. The ethics of organ allocation: the state of debate. *Transplant Rev (Orlando)*1997; 11: 191-207.

Land W. The potential impact of the reperfusion injury on acute and chronic rejection events following organ transplantation. *Transplant Proc* 1994; 26: 3169-71.

A handwritten signature in black ink, appearing to read "Dr. Walter Land". The signature is written in a cursive, somewhat stylized font.

Walter G. Land

Strasbourg, France, January 01, 2018