Marc **DIEDERICH**, Ph.D.

PERSONAL DATA

Born May 13th, 1965, Luxembourg Married, two children

POSITIONS

1994-2012: Director and principal investigator conducting independent research, leading and training a 25-person group including PhD scientists and PhD and MSc candidates:

Laboratory for Molecular and Cellular Biology of Cancer, Kirchberg Hospital, Luxembourg
Email: marc.diederich@lbmcc.lu http://www.lbmcc.lu

Since 2012: Associate Professor of Biochemistry and principal investigator conducting independent research, leading and training a 10-person group including PhD scientists and PhD and MSc candidates:

College of Pharmacy, Seoul National University, South Korea
Email: marcdiederich@snu.ac.kr
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EDUCATION

1987: Bachelor in Cell Biology and Physiology (Nancy, France)
1989: Master in Biochemical Pharmacology (Nancy, France and McArdle Laboratory for Cancer Research, Madison, WI, USA)
1994: Ph.D. in Molecular Pharmacology (Nancy, France and Department of Environmental Heath, University of Cincinnati, Cincinnati, OH, USA)

PUBLICATIONS (2 July 2017)

Pubmed-referenced publications: **205**
https://www.researchgate.net/profile/Marc_Diederich
http://scholar.google.com/citations?hl=en&user=6lMbxyEAAAAJ
H-index: **48** (Google Scholar)

SELECTED PUBLICATIONS

1 Cerella, C. *et al.* Bcl-2 protein family expression pattern determines synergistic pro-apoptotic effects of BH3 mimetics with hemisynthetic cardiac glycoside UNBS1450 in acute myeloid leukemia. *Leukemia* **31**, 755-759, doi:10.1038/leu.2016.341 (2017).

2 Diederich, M. & Cerella, C. Non-canonical programmed cell death mechanisms triggered by natural compounds. *Semin Cancer Biol* **40-41**, 4-34, doi:10.1016/j.semcancer.2016.06.001 (2016).

3 Juncker, T. *et al.* UNBS1450, a steroid cardiac glycoside inducing apoptotic cell death in human leukemia cells. *Biochem Pharmacol* **81**, 13-23, doi:10.1016/j.bcp.2010.08.025 (2011).

4 Radogna, F. *et al.* Cell type-dependent ROS and mitophagy response leads to apoptosis or necroptosis in neuroblastoma. *Oncogene* **35**, 3839-3853, doi:10.1038/onc.2015.455 (2016).

5 Cerella, C. *et al.* Early downregulation of Mcl-1 regulates apoptosis triggered by cardiac glycoside UNBS1450. *Cell Death Dis* **6**, e1782, doi:10.1038/cddis.2015.134 (2015).

6 Blasius, R., Reuter, S., Henry, E., Dicato, M. & Diederich, M. Curcumin regulates signal transducer and activator of transcription (STAT) expression in K562 cells. *Biochem Pharmacol* **72**, 1547-1554, doi:10.1016/j.bcp.2006.07.029 (2006).

7 Schnekenburger, M. *et al.* Increased glutathione S-transferase P1-1 expression by mRNA stabilization in hemin-induced differentiation of K562 cells. *Biochem Pharmacol* **68**, 1269-1277, doi:10.1016/j.bcp.2004.03.047 (2004).

8 Diederich, M., Wellman, M., Visvikis, A., Puga, A. & Siest, G. The 5'untranslated region of the human gamma-glutamyl transferase mRNA contains a tissue-specific active translational enhancer. *FEBS Lett* **332**, 88-92, doi:10.1016/0014-5793(93)80490-l (1993).

9 Courtay, C. *et al.* Gamma-glutamyltransferase: nucleotide sequence of the human pancreatic cDNA. Evidence for a ubiquitous gamma-glutamyltransferase polypeptide in human tissues. *Biochem Pharmacol* **43**, 2527-2533, doi:10.1016/0006-2952(92)90140-e (1992).

10 Diederich, M., Elyaagoubi, M., Gerardin, P., Wellman, M. & Siest, G. Characterization and Regulatory Effect of Gamma-Glutamyl-Transferase Messenger-Rna Untranslated Regions in Human Leukemia. *Leukemia* **9**, 1332-1337 (1995).

11 Folmer, F. *et al.* Inhibition of TNFalpha-induced activation of nuclear factor kappaB by kava (Piper methysticum) derivatives. *Biochem Pharmacol* **71**, 1206-1218, doi:10.1016/j.bcp.2005.12.032 (2006).

12 Duvoix, A. *et al.* Expression of glutathione S-transferase P1-1 in leukemic cells is regulated by inducible AP-1 binding. *Cancer Lett* **216**, 207-219, doi:10.1016/j.canlet.2004.05.004 (2004).

13 Morceau, F. *et al.* GTP-mediated differentiation of the human K562 cell line: transient overexpression of GATA-1 and stabilization of the gamma-globin mRNA. *Leukemia* **14**, 1589-1597, doi:10.1038/sj.leu.2401890 (2000).

14 Duvoix, A. *et al.* Effect of chemopreventive agents on glutathione S-transferase P1-1 gene expression mechanisms via activating protein 1 and nuclear factor kappaB inhibition. *Biochem Pharmacol* **68**, 1101-1111, doi:10.1016/j.bcp.2004.05.032 (2004).

15 Diederich, M., Wellman, M. & Siest, G. Localization of a regulatory region on the 5'-untranslated region of human hepatoma HepG2 gamma-glutamyltransferase mRNA and response to dexamethasone and antisense oligonucleotide treatment. *FEBS Lett* **356**, 307-310, doi:10.1016/0014-5793(94)01293-8 (1994).

16 Duvoix, A. *et al.* Induction of apoptosis by curcumin: mediation by glutathione S-transferase P1-1 inhibition. *Biochem Pharmacol* **66**, 1475-1483 (2003).

17 Borde-Chiche, P. *et al.* Regulation of transcription of the glutathione S-transferase P1 gene by methylation of the minimal promoter in human leukemia cells. *Biochem Pharmacol* **61**, 605-612, doi:10.1016/S0006-2952(00)00581-5 (2001).

18 Maiani, E. *et al.* Reply to: Cisplatin-induced primordial follicle oocyte killing and loss of fertility are not prevented by imatinib. *Nat Med* **18**, 1172-1174, doi:10.1038/nm.2852 (2012).

19 Sobolewski, C. *et al.* 2,5-Dimethyl-celecoxib inhibits cell cycle progression and induces apoptosis in human leukemia cells. *J Pharmacol Exp Ther* **355**, 308-328, doi:10.1124/jpet.115.225011 (2015).

20 Sobolewski, C., Cerella, C., Dicato, M. & Diederich, M. Cox-2 inhibitors induce early c-Myc downregulation and lead to expression of differentiation markers in leukemia cells. *Cell Cycle* **10**, 2978-2993, doi:10.4161/cc.10.17.16460 (2011).

21 Seidel, C. *et al.* 4-Hydroxybenzoic acid derivatives as HDAC6-specific inhibitors modulating microtubular structure and HSP90alpha chaperone activity against prostate cancer. *Biochem Pharmacol* **99**, 31-52, doi:10.1016/j.bcp.2015.11.005 (2016).

22 Orlikova, B. *et al.* Synthesis and bioactivity of novel amino-pyrazolopyridines. *Eur J Med Chem* **85**, 450-457, doi:10.1016/j.ejmech.2014.08.008 (2014).

23 Sobolewski, C., Muller, F., Cerella, C., Dicato, M. & Diederich, M. Celecoxib prevents curcumin-induced apoptosis in a hematopoietic cancer cell model. *Mol Carcinog* **54**, 999-1013, doi:10.1002/mc.22169 (2015).

24 Schumacher, M., Kelkel, M., Dicato, M. & Diederich, M. Gold from the sea: marine compounds as inhibitors of the hallmarks of cancer. *Biotechnol Adv* **29**, 531-547, doi:10.1016/j.biotechadv.2011.02.002 (2011).

25 Czepukojc, B. *et al.* Synthetic polysulfane derivatives induce cell cycle arrest and apoptotic cell death in human hematopoietic cancer cells. *Food Chem Toxicol* **64**, 249-257, doi:10.1016/j.fct.2013.10.020 (2014).

26 El Amrani, M. *et al.* Protein kinase and HDAC inhibitors from the endophytic fungus Epicoccum nigrum. *J Nat Prod* **77**, 49-56, doi:10.1021/np4005745 (2014).

27 Florean, C. *et al.* Discovery and characterization of Isofistularin-3, a marine brominated alkaloid, as a new DNA demethylating agent inducing cell cycle arrest and sensitization to TRAIL in cancer cells. *Oncotarget* **7**, 24027-24049, doi:10.18632/oncotarget.8210 (2016).

28 Trecul, A. *et al.* Valproic acid regulates erythro-megakaryocytic differentiation through the modulation of transcription factors and microRNA regulatory micro-networks. *Biochem Pharmacol* **92**, 299-311, doi:10.1016/j.bcp.2014.07.035 (2014).

29 Poplineau, M. *et al.* The DNA hypomethylating agent, 5-aza-2'-deoxycytidine, enhances tumor cell invasion through a transcription-dependent modulation of MMP-1 expression in human fibrosarcoma cells. *Mol Carcinog* **54**, 24-34, doi:10.1002/mc.22071 (2015).

30 Cerella, C., Teiten, M. H., Radogna, F., Dicato, M. & Diederich, M. From nature to bedside: pro-survival and cell death mechanisms as therapeutic targets in cancer treatment. *Biotechnol Adv* **32**, 1111-1122, doi:10.1016/j.biotechadv.2014.03.006 (2014).

31 Morceau, F. *et al.* Natural compounds and pharmaceuticals reprogram leukemia cell differentiation pathways. *Biotechnol Adv* **33**, 785-797, doi:10.1016/j.biotechadv.2015.03.013 (2015).

32 Schnekenburger, M., Dicato, M. & Diederich, M. Plant-derived epigenetic modulators for cancer treatment and prevention. *Biotechnol Adv* **32**, 1123-1132, doi:10.1016/j.biotechadv.2014.03.009 (2014).

33 Orlikova, B. *et al.* Styryl-lactone goniothalamin inhibits TNF-alpha-induced NF-kappaB activation. *Food Chem Toxicol* **59**, 572-578, doi:10.1016/j.fct.2013.06.051 (2013).

34 Spagnuolo, C. *et al.* Quercetin downregulates Mcl-1 by acting on mRNA stability and protein degradation. *Br J Cancer* **105**, 221-230, doi:10.1038/bjc.2011.229 (2011).

35 Colin-Cassin, C. *et al.* PPARgamma-inactive Delta2-troglitazone independently triggers ER stress and apoptosis in breast cancer cells. *Mol Carcinog* **54**, 393-404, doi:10.1002/mc.22109 (2015).

36 Ebrahim, W. *et al.* Embellicines A and B: absolute configuration and NF-kappaB transcriptional inhibitory activity. *J Med Chem* **56**, 2991-2999, doi:10.1021/jm400034b (2013).

37 Orlikova, B. *et al.* Methylenedioxy flavonoids: assessment of cytotoxic and anti-cancer potential in human leukemia cells. *Eur J Med Chem* **84**, 173-180, doi:10.1016/j.ejmech.2014.07.003 (2014).

38 Bana, E. *et al.* A novel coumarin-quinone derivative SV37 inhibits CDC25 phosphatases, impairs proliferation, and induces cell death. *Mol Carcinog* **54**, 229-241, doi:10.1002/mc.22094 (2015).

39 Valente, S. *et al.* Selective non-nucleoside inhibitors of human DNA methyltransferases active in cancer including in cancer stem cells. *J Med Chem* **57**, 701-713, doi:10.1021/jm4012627 (2014).

40 Rotili, D. *et al.* Properly substituted analogues of BIX-01294 lose inhibition of G9a histone methyltransferase and gain selective anti-DNA methyltransferase 3A activity. *PLoS One* **9**, e96941, doi:10.1371/journal.pone.0096941 (2014).

41 Seidel, C., Schnekenburger, M., Dicato, M. & Diederich, M. Antiproliferative and proapoptotic activities of 4-hydroxybenzoic acid-based inhibitors of histone deacetylases. *Cancer Lett* **343**, 134-146, doi:10.1016/j.canlet.2013.09.026 (2014).

42 Grandjenette, C. *et al.* 5-aza-2'-deoxycytidine-mediated c-myc Down-regulation triggers telomere-dependent senescence by regulating human telomerase reverse transcriptase in chronic myeloid leukemia. *Neoplasia* **16**, 511-528, doi:10.1016/j.neo.2014.05.009 (2014).

43 Trecul, A. *et al.* Polyphenol tri-vanillic ester 13c inhibits P-JAK2V617F and Bcr-Abl oncokinase expression in correlation with STAT3/STAT5 inactivation and apoptosis induction in human leukemia cells. *Cancer Lett* **340**, 30-42, doi:10.1016/j.canlet.2013.06.023 (2013).

44 Schnekenburger, M. *et al.* Sustained exposure to the DNA demethylating agent, 2'-deoxy-5-azacytidine, leads to apoptotic cell death in chronic myeloid leukemia by promoting differentiation, senescence, and autophagy. *Biochem Pharmacol* **81**, 364-378, doi:10.1016/j.bcp.2010.10.013 (2011).

45 Doering, M. *et al.* Synthesis and selective anticancer activity of organochalcogen based redox catalysts. *J Med Chem* **53**, 6954-6963, doi:10.1021/jm100576z (2010).

46 Schumacher, M. *et al.* Heteronemin, a spongean sesterterpene, inhibits TNF alpha-induced NF-kappa B activation through proteasome inhibition and induces apoptotic cell death. *Biochem Pharmacol* **79**, 610-622, doi:10.1016/j.bcp.2009.09.027 (2010).

47 Folmer, F. *et al.* NF-kappaB-inhibiting naphthopyrones from the Fijian echinoderm Comanthus parvicirrus. *J Nat Prod* **71**, 106-111, doi:10.1021/np070290y (2008).

48 Cerella, C. *et al.* Cell cycle arrest in early mitosis and induction of caspase-dependent apoptosis in U937 cells by diallyltetrasulfide (Al2S4). *Apoptosis* **14**, 641-654, doi:10.1007/s10495-009-0328-8 (2009).

49 Cristofanon, S. *et al.* Oxidation-dependent maturation and survival of explanted blood monocytes via Bcl-2 up-regulation. *Biochem Pharmacol* **76**, 1533-1543, doi:10.1016/j.bcp.2008.07.042 (2008).

50 Cerella, C. *et al.* COX-2 inhibitors block chemotherapeutic agent-induced apoptosis prior to commitment in hematopoietic cancer cells. *Biochem Pharmacol* **82**, 1277-1290, doi:10.1016/j.bcp.2011.06.028 (2011).

51 Morceau, F. *et al.* Regulation of glutathione S-transferase P1-1 gene expression by NF-kappaB in tumor necrosis factor alpha-treated K562 leukemia cells. *Biochem Pharmacol* **67**, 1227-1238, doi:10.1016/j.bcp.2003.10.036 (2004).

52 Chateauvieux, S. *et al.* Valproic acid perturbs hematopoietic homeostasis by inhibition of erythroid differentiation and activation of the myelo-monocytic pathway. *Biochem Pharmacol* **81**, 498-509, doi:10.1016/j.bcp.2010.11.011 (2011).

53 Orlikova, B., Tasdemir, D., Golais, F., Dicato, M. & Diederich, M. The aromatic ketone 4'-hydroxychalcone inhibits TNFalpha-induced NF-kappaB activation via proteasome inhibition. *Biochem Pharmacol* **82**, 620-631, doi:10.1016/j.bcp.2011.06.012 (2011).

54 Reuter, S. *et al.* Tumor necrosis factor alpha induces gamma-glutamyltransferase expression via nuclear factor-kappaB in cooperation with Sp1. *Biochem Pharmacol* **77**, 397-411, doi:10.1016/j.bcp.2008.09.041 (2009).

55 Folmer, F. *et al.* The inhibition of TNF-alpha-induced NF-kappaB activation by marine natural products. *Biochem Pharmacol* **78**, 592-606, doi:10.1016/j.bcp.2009.05.009 (2009).

56 Karius, T. *et al.* Reversible epigenetic fingerprint-mediated glutathione-S-transferase P1 gene silencing in human leukemia cell lines. *Biochem Pharmacol* **81**, 1329-1342, doi:10.1016/j.bcp.2011.03.014 (2011).

57 Radogna, F. *et al.* Melatonin antagonizes the intrinsic pathway of apoptosis via mitochondrial targeting of Bcl-2. *J Pineal Res* **44**, 316-325, doi:10.1111/j.1600-079X.2007.00532.x (2008).

58 Rateb, M. E. *et al.* Bioactive diterpene derivatives from the marine sponge Spongionella sp. *J Nat Prod* **72**, 1471-1476, doi:10.1021/np900233c (2009).

59 Cerella, C. *et al.* Sequential phases of Ca2+ alterations in pre-apoptotic cells. *Apoptosis* **12**, 2207-2219, doi:10.1007/s10495-007-0134-0 (2007).

60 Cristofanon, S. *et al.* Oxidative, multistep activation of the noncanonical NF-kappaB pathway via disulfide Bcl-3/p50 complex. *FASEB J* **23**, 45-57, doi:10.1096/fj.07-104109 (2009).

SUPERVISION OF PHD

1998 – 2016: **30** PhD theses under the supervision or responsibility of Marc Diederich.

TEACHING EXPERIENCE

1995-2001, 2004-2012: Lecturer at the University Henri Poincaré Nancy I, France
1996-1997, 2000-2004: Lecturer at the University Center of Luxembourg, Luxembourg
2012- : Associate Professor of Biochemistry, Seoul National University, South Korea

EDITOR OF BOOKS AND SPECIAL JOURNAL NUMBERS

25 books or special issues edited

EDITORIAL APPOINTMENTS

Journal of Cancer Prevention: Editor-in-chief
Cell Death and Disease: Editorial Board member and Receiving editor
Cell stress: Founding Editor
Biochemical Pharmacology: Editorial Board member and Invited editor
Journal of Cell Communication and Signaling: Editorial Board member
Genes & Nutrition: Editorial Board member

Journal of Traditional and Complementary Medicine: Editorial Board member
Experimental Pharmacology and Drug Discovery, a specialty of Frontiers in Pharmacology: Review Editor, member of the Editorial Board
Phytomedicine: Editorial Board member

MEETING ORGANIZATIONS

Marc Diederich attracted more than 6500 scientists to Luxembourg since 1998 with an innovative series of meetings in the field of cell signaling as a therapeutic target.

FINANCIAL SUPPORT, GRANTS AND CONTRACTS

European projects:

FP7 "people" program "RedCat" project 215009 (2009 -2013)
FP7 Interreg IVA CORENA project (2009 -2013)

National projects:

Ministry of Research, Luxembourg (1994 - 2008)
National Research Fund, Luxembourg (2008 - 2010)
National Scientific Research Fund, Belgium (Télévie program) (2002 - ongoing)

Cancer Research Foundations:

Association pour la Recherche sur le Cancer (ARC), France (1990 – 1994)
Ligue pour la Recherche contre le Cancer, France, (1991-1994)
Les Amis de la Fondation José Carreras asbl (1998 – 2002)
Stiftung zur Deutsch-Lux. Zusammenarbeit im Bereich der Wissenschaften (2008)
Fondation « Recherche Cancer et Sang » (1994 - ongoing)
Action Lions « Vaincre le Cancer » (1998 - ongoing)
Association « Recherches Scientifiques Luxembourg » asbl (1998 - ongoing)
Association « Een Haerz fir Kriibskrank Kanner » (2004 - ongoing)

BOARD OF DIRECTORS OF CHARITY ORGANIZATIONS

• President of « Recherches Scientifiques Luxembourg » (conducts/finances cancer research)
• President of the « Action LIONS "Vaincre le Cancer" (finances cancer research)
• Member of the board of the organization « Legs Kanning » (finances cancer research)
• Member of the board of « Een Haerz fir Kriibskrank Kanner » (finances cancer research)

AWARDS

2007: Prix LIONS Luxembourg "for cancer and leukemia research achievements"
2010: Preis zur "Förderung der Deutsch-Lux. Zusammenarbeit im Bereich der Wissenschaften"
2010: Prix Interrégional de la Recherche (Saar-Lor-Lux)
2016: 창의선도 신진연구자 서울대학교 창의연구과제. 우수한 연구 성과
Seoul National University « Leading young scientist award for excellent research »

OTHER

Since 2012: Member of the "Academy of Sciences, Lorraine, France"
Since 2014: Regional Representative of the "Phytochemical Society of Europe"