CURRICULUM VITAE

I. General Informations :

1.1. Name, First Name(s) : De Deken, Xavier, Sébastien
1.2. Gender: Male
1.3. Country - date of bird: Belgium - 3/10/1975
1.4. Citizenship: Belgian
1.5. Familial situation: Married, two children
1.6. Address: Université Libre de Bruxelles, I.R.I.B.H.M - Bâtiment C – Local C4-145, Route de Lennik, 808, 1070 Brussels, Belgium
1.7. Phone : +32.2.555.4152 / 4151
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E-mail : xavier.de.deken@ulb.ac.be

II. University titles + grades (per year) + institutions :

Bachelor in biomedical sciences

1st year	GD	U.L.B.	2/7/1994
2nd year	LPGD	U.L.B.	3/7/1995

Master in biomedical sciences

1st year	LPGD	U.L.B.	5/7/1996
2nd year	LPGD	U.L.B.	24/9/1997

Study of the telomere length in thyroid pathologies
Research director: J.E. Dumont, Co-Promoter: F. Miot
Graduated with First Class Honours

PhD in Biomedical sciences

-	SM	U.L.B.	21/3/2002

Cloning and characterization of the thyroid H_2O_2 generating system
Research director: J.E. Dumont, Co-Promoter: F. Miot

III. Scientific Career :

01/10/2010 - Today	Permanent Researcher – IRIBHM – DUOX Lab	Assistant Professor	ULB
1/10/2009 - 30/9/2010	Scientific Research Worker - IRIBHM	Postdoctoral Fellow	ULB
Du 1/10/2008 au 30/9/2009	Scientific Research Worker - IRIBHM	Postdoctoral Fellow	FRS-FNRS
Du 1/10/2004 au 30/9/2008	Scientific Research Worker - IRIBHM	Postdoctoral Fellow	FRS-FNRS
Du 16/8/2004 au 30/9/2004	Scientific Research Worker - IRIBHM	Postdoctoral Fellow	ARC - ULB

Du 1/6/2002 au 31/5/2004	Postdoctoral Researcher – IRCM - Montréal, Canada	Postdoctoral Fellow	Fonds de la Recherche en Santé du Québec (FRSQ)
Du 1/10/2001 au 31/5/2002	Grant FNRS - Télévie - IRIBHM	PhD student ULB	FRS-FNRS
Du 1/10/1997 au 30/9/2001	Fellowship F.R.I.A - IRIBHM	PhD student ULB	FRS-FNRS

IV. Scientific contributions :

4.1. Scientific Publications :

De Deken X., Vilain C., Van Sande J., Dumont J.E. and Miot F.
Decrease of Telomere Length in Thyroid Adenomas without Telomerase Activity
J. Clin. Endocrinol. Metab. (1998) 83:4368-4372

De Deken X., Wang D., Many M.C., Costagliola S., Libert F., Vassart G., Dumont J.E. and Miot F.
Cloning of Two Human Thyroid cDNAs Encoding New Members of the NADPH Oxidase Family
J. Biol. Chem. (2000) 275:23227-23233

De Deken X., Wang D., Dumont J.E. and Miot F.
Characterization of ThOX Proteins as Components of the Thyroid H2O2 Generating System
Experimental Cell Research (2002) 273:187-196

De Deken X. and Raymond M.
Constitutive Activation of the PDR16 Promoter in a Candida albicans Azole-Resistant Clinical Isolate Overexpressing CDR1 and CDR2
Antimicrob. Agents Chemother. (2004) 48:2700-2703

Wang D., De Deken X., Milenkovic M., Song Y., Pirson I., Dumont J.E. and Miot F.
Identification of a Novel Partner of Duox: EFP1 a Thioredoxin-related Protein
J. Biol. Chem. (2005) 280:3096-3103

MacPherson S., Akache B., Weber S., De Deken X., Raymond M. and Turcotte B.
Candida albicans zinc cluster protein Upc2p confers resistance to antifungal drugs and is an activator of ergosterol biosynthetic genes
Antimicrob. Agents Chemother. (2005) 49:1745-1752

Saidane S., Weber S., De Deken X., St-Germain G. and Raymond M.
PDR16-mediated azole resistance in Candida albicans
Mol. Microbiol. (2006) 60:1546-62

Milenkovic M., De Deken X., Jin L., De Felice M., Di Lauro R., Dumont J.E., Corvilain B. and Miot F.
Duox expression and H2O2 generation in mouse thyroid: Onset in embryonic development and regulation by TSH in adult
J Endocrinol. (2007) 192:615-626

Grasberger H., De Deken X., Miot F., Pohlenz J. and Refetoff S
Missense mutations of dual oxidase 2 (Duox2) implicated in congenital hypothyroidism have impaired trafficking in cells reconstituted with Duox2 maturation factor
Molecular Endocrinology (2007) 21:1408-21

Rigutto S., Hoste C., Corvilain B., Miot F. and De Deken X
Duox1 is the main source of hydrogen peroxide in the rat thyroid cell line PCCl3
Experimental Cell Research (2007) 313:3892-901

Znaidi Z. De Deken X., Weber S., Rigby T., Nantel A. and Raymond M.
The zinc cluster transcription factor Tac1p regulates PDR16 expression in Candida albicans
Mol. Microbiol. (2007) 66:440-452

Song Y., Driessens N., Costa M., De Deken X., Detours B., Corvilain B., Maenhaut C., Miot F., Van Sande J., Many M.C. and Dumont J.E.
Roles of hydrogen peroxide in thyroid physiology and disease
J. Clin. Endocrinol. Metab. (2007) 92:3764-73

Znaidi S., Weber S., Zin Al-Abdin O., Bomme P., Saidane S., Drouin S., Lemieux S., De Deken X., Robert F. and Raymond M.
Genome-wide location analysis of Candida albicans Upc2p, a regulator of sterol metabolism and azole drug resistance
Eukaryotic Cell (2008) 7:836-47

Rigutto S., Hoste C., Grasberger H., Milenkovic M., Communi D., Dumont J.E., Corvilain B., Miot F. and De Deken X.
Activation of Dual Oxidases (DUOX1 and DUOX2): Biochemical Mechanisms and Functional Consequences
J. Biol. Chem. (2009) 284:6725-6734

Driessens N., Versteyhe S., Ghaddhab C., Burniat A., De Deken X., Van Sande J., Dumont J.E., Miot F. and Corvilain B.
Hydrogen peroxide induces DNA single- and double-strand breaks in thyroid cells and is therefore a potential mutagen for this organ
Endo. Rel. Cancer (2009) 16:845-856

Allaoui A., Botteaux A., Dumont J.E., Hoste C. and De Deken X.
Dual oxidases and hydrogen peroxide in a complex dialogue between host mucosae and bacteria
Trends in Molecular Medicine (2009) 15:571-579

Song Y., Ruf J., Andry G., Willemse E., Dequanter D., Lothaire P., Dumont J.E., Van Sande J. and De Deken X.
Association of Duoxes with thyroid peroxidase and its regulation in thyrocytes
J. Clin. Endocrinol. Metab. (2010) 95:375-382

Hoste C., Rigutto S., Van Vliet G., Miot F. and De Deken X.
Compound heterozygosity for a novel hemizygous missense mutation and a partial deletion affecting the catalytic core of the H2O2-generating enzyme DUOX2 associated with transient congenital hypothyroidism
Human Mutation (2010) 31:E1304-E

Donkó A, Ruisanchez E, Orient A, Enyedi B, Kapui R, Péterfi Z, De Deken X., Benyó Z and Geiszt M.
Urothelial cells produce hydrogen peroxide through the activation of Duox1
Free Radic Biol Med. (2010) 49:2040-8

Kwon J, Shatynski KE, Chen H, Morand S, De Deken X, Miot F, Leto TL and Williams MS
The nonphagocytic NADPH oxidase Duox1 mediates a positive feedback loop T cell receptor signaling
Science Signaling (2010) 3:ra59

Dumont J.E, De Deken X, Miot F, Corvilain B, Contempré B, Goyens R, Massart C, Van Sande J, Allaoui A and Botteaux, A
H2O2, signal, substrate, mutagen and chemorepellent from physiology to biochemistry and disease
Bulletin et mémoires de l'Académie royale de médecine de Belgique (2010) 165(5-6), 231-4; discussion 235.

Grasberger H, De Deken X, Mayo OB, Raad H, Weiss M, Liao XH and Refetoff S.
Mice deficient in dual oxidase maturation factors are severely hypothyroid
Mol Endocrinol. (2012) 26:481-92

Hoste C, Dumont JE, Miot F and De Deken X.
The type of DUOX-dependent ROS production is dictated by defined sequences in DUOXA.
Exp Cell Res. (2012) 318(18):2353-64

Raad H, Eskalli Z, Corvilain B, Miot F and De Deken X.
Thyroid hydrogen peroxide production is enhanced by the Th2 cytokines, IL-4 and IL-13, through increased expression of the dual oxidase 2 and its maturation factor DUOXA2. Free Radic Biol Med. (2013) 56:216-225.

Hadad I, Veithen A, Springael JY, Sotiropoulou PA, Mendes Da Costa A, Miot F, Naeije R, De Deken X* and Entee KM*.* These authors contributed equally to this work.
Stroma cell-derived factor-1α signaling enhances calcium transients and beating frequency in rat neonatal cardiomyocytes.
PLoS One. (2013) 8(2):e56007.

Fink K, Martin L, Mukawera E, Chartier S, De Deken X, Brochiero E, Miot F and Grandvaux N.
IFNβ/TNFα synergism induces a non-canonical STAT2/IRF9-dependent pathway triggering a novel DUOX2 NADPH Oxidase-mediated airway antiviral response.
Cell Res. (2013) 23:673-690

De Deken X, B Corvilain, JE Dumont and F Miot.
Roles of DUOX-mediated hydrogen peroxide in metabolism, host defense, and signaling.
Antioxidants & redox signaling (2013) in press

4.2. Congress :

Cloning of two human cDNAs encoding new members of the NADPH Oxidase family
De Deken X., Wang D., Many M.C., Costagliola S., Libert F., Vassart G., Dumont J.E. and Miot F.

2000, Kyoto, Japon, 23/10/2000
12th International Thyroid Association Congress – Oral Communication

Characterization of two human thyroid proteins from the NADPH Oxidase family: components of the H_2O_2 generating system
De Deken X., Wang D., Costagliola S., Libert F., Vassart G., Dumont J.E.and Miot F.
2001, Doorwerth, Pays-Bas, 5/6/2001
5th Dutch Endo-Neuro Meeting - Oral Communication

Characterization of ThOX proteins: components of the thyroid H_2O_2 generating system?
De Deken X., Wang D., Dumont J.E. and Miot F.
2001, Varsovie, Pologne, 25/8/2001
27th European Thyroid Association Congress - Oral Communication

Characterisation of the thyroid NADPH oxidases THOX/DUOX as components of the thyroid H_2O_2 generating system
Miot F., De Deken X., Wang D., Pachucki J., Vassart G. and Dumont J.E.
2002, Rauischholzhausen, Allemagne, 30/4/2002
1st International Conference on NAD(P)H oxidases - Oral Communication

Transcriptional regulation of the CaPDR16 gene in clinical and experimental strains of Candida albicans
De Deken X. and Raymond M.
2003, Montréal, Canada, 27/6/2003
Northeast Regional Yeast Meeting 2003 - Oral Communication

Transcriptional regulation of the CaPDR16 gene in clinical and experimental strains of Candida albicans
De Deken X. and Raymond M.
2003, Chicago, États-Unis, 15/9/2003
43rd Interscience Conference on Antimicrobial and Chemotherapy - Poster

Characterization of the Candida albicans PDR16 gene
Raymond M., De Deken X. and Saidane S.
2004, Austin, États-Unis, 18/3/2004
7th ASM Conference on Candida and Candidiasis - Oral Communication

Characterization of DUOX in the thyroid: regulation and mechanism(s) of activation
Miot F., De Deken X., Wang D., Pachuscki J., Milenkovic M., Corvilain B. and Dumont J.E.
2004, Pine Mountain, États-Unis, 27/3/2004
2nd International Conference on NADPH Oxidase NOXII - Oral Communication

DUOX1 et DUOX2 de la thyroïde: rôle dans le système générateur d'H_2O_2 et la différenciation du thyrocyte
De Deken X., Milenkovic M., Rigutto S., Dantong W. and Miot F.
2005, Grenoble, France, 17/3/2005
Club Oxydase 2005 - Oral Communication

C. albicans Zinc Cluster Transcription Factors: Bioinformatic and ChIP-Chip Analyses
Raymond M., Znaidi S., Weber S., Zin Al-Abdin O., De Deken X., Hogues H., Deneault J., Lacroix C., Turcotte B., Robert F., Whiteway M., Nantel A.

2006, Denver, Colorado, États-Unis, 13/3/2006
8th ASM Conference on Candida and Candidiasis - Oral Communication

Over-expression of Duox1 in thyroid cell lines using the lentivirus technology
De Deken X., Rigutto S., Hoste C., Milenkovic M. and Miot F.
2006, Les Diablerets, Suisse, 15/10/2006
Gordon Research Conferences: NOX Family NADPH Oxidases - Poster

Genome-wide location profiling of Upc2p, a regulator of sterol biosynthesis and azole resistance in Candida albicans
S. Znaidi, S. Weber, O. Zin-Al-Abdin, P. Bomme, S. Saidane, S. Drouin, S. Lemieux, X. De Deken, F. Robert, M. Raymond
2008, New York City, États-Unis, 24/3/2008
9th ASM Conference on Candida and Candidiasis - Poster

Dual oxidase 1 (Duox1) activity is directly regulated by protein kinase A phosphorylations
De Deken X., Rigutto S., Hoste C., and Miot F.
2008, New London, États-Unis, 1/6/2008
Gordon Research Conferences: NOX Family NADPH Oxidases - Poster nominated for Oral Communication

Regulation of Duox activities by calcium and phorbol esters
Rigutto S., Hoste C., Dumont J.E., Miot F. and De Deken X.
2008, New London, États-Unis, 1/6/2008
Gordon Research Conferences: NOX Family NADPH Oxidases - Poster

Congenital hypothyroidism caused by a new mutation in the catalytic site of the H_2O_2 generating enzyme Duox2
Hoste C., Rigutto S., Dumont JE, Miot F., and De Deken X.
2009, Paris, France, 28/5/2009
Club Oxydase 2009 - Oral Communication

Study of the association of Duoxes with TPO and its regulation in human thyrocytes
Yue S., De Deken X. and Van Sande J.
2009, Paris, France, 28/5/2009
Club Oxydase 2009 - Poster

Duox1 and Duox2 activities are differently regulated by the two main thyroid signaling pathways
Rigutto S., Hoste C., Grasberger H., Milenkovic M., Communi D., Corvilain B., Dumont JE, Miot F. and De Deken X.
2009, Lisbon, Portugal, 5/9/2009
34th European Thyroid Association - Poster

Expression, localization of Na+/HCO3- cotransporter (NBC1) in thyroid and Na^+/HCO_3^- cotransporter (NBC1) expression in thyroid and regulation by TSH.
Jin L., De Deken X., Massart C., Van Sande J., Dumont J.E. and Beauwens R.
2009, Belgique, 24/10/2009
Belgian Society of Fundamental and Clinical Physiology and Pharmacology – Poster

SDF-1 overexpression by lentiviral transduction in mesenchymal stem cells: a way to improve stem cells therapy
Hadad I., Mendes da Costa A., Touihri K., Mathieu M., Springael J.Y., Sotiropoulou P., Foguenne J., Naeije R., Mc Entee K. and De Deken X.
2010, Bruxelles, Belgique, 29/1/2010
18ème congrès de la société belge de cardiologie - Oral Communication

Characterization of the Duox/DuoxA interplay
Hoste C., Dumont J.E., Miot F. and De Deken X.
2010, Les Diablerets, Suisse, 06/06/2010
Gordon Research Conferences: NOX Family NADPH Oxidases – Poster

Transient congenital hypothyroidism caused by a new hemizygous missense mutation in the catalytic core of the H_2O_2-generating enzyme Duox2
Hoste C., Rigutto S., Van Vliet G., Miot F. and De Deken X.
2010, Paris, France, 11/9/2010
14th International Thyroid Congress – Poster presented in oral communication

Duox1 and thyroid H_2O_2 generation
De Deken X.
2010, Paris, France, 11/9/2010
14th International Thyroid Congress – **Invited** for Oral Communication

Régulations fonctionnelles et transcriptionnelles des NADPH oxydases DUOX
De Deken X., C. Hoste, S. Rigutto, H. Raad and F. Miot
2011, Grenoble, France, 26/05/2011
Club Oxydase 2011 – **Invited** for Oral Communication

Regulation of DUOX/DUOXA expression by IL4 and IL13 in thyroid and intestine models
Raad H., De Deken X. and Miot F.
2011, Grenoble, France, 26/05/2011
Club Oxydase 2011 – Oral communication

The thyroid oxidative capacity is enhanced by the Th2 cytokines, IL-4 and IL-13, through increased expression of the dual oxidase 2 and its maturation factor DUOXA2
De Deken X., Raad H., Eskalli Z., Hoste C., Corvilain B. and Miot F.
2012, Pise, Italie, 10/09/2012
36th European Thyroid Association congress – Oral communication

Interleukin-4 increases the expression of the Dual Oxidase DUOX in mouse thyrocytes
Eskalli Z., Miot F. and De Deken X.
2013, Paris, France, 30/05/2013
Club Oxydase 2013 – Oral communication

4.3. Active participation in international meeting and congress :

Invited Speaker in the 14th International Thyroid Congress (ITA) – Paris 2010: Role of Reactive oxygen species in thyroid cell biology.

Invited Speaker in the 7th Club oxydase – Grenoble 2011: Régulations fonctionnelles et transcriptionnelles des NADPH oxydases DUOX.

Discussion Leader at the Gordon Research Conferences: NOX Family NADPH Oxidases 2012 – Waterville Valley (USA): Calcium-activated NOX/DUOX enzymes - regulation and Function.

Discussion Leader at the 36th European Thyroid Association congress (ETA) – Pisa 2012: Thyroid Cell Biology and Cancer

4.4. International collaborations :

Biochemical studies of Duox1 and Duox2 enzymes. Characterization of the Duox maturation factors: DuoxA1 and DuoxA2. Analysis of the Duox/DuoxA roles in physiological and pathological processes.
University of Chicago - Endocrinology laboratory (USA)
Pr. Samuel Refetoff – Dr. Helmut Grasberger

Screening of natural mutations in *DUOX1*/*DUOX2* and *DUOXA1*/*DUOXA2* genes in patients suffering of congenital hypothyroidism with iodide organification defect.
Montreal University – Endocrinology department (Canada)
Pr. Guy Van Vliet
Universidade Federal do Rio de Janeiro (Brazil)
Pr. Denise de Carvalho-Pires

Characterization of *DUOX1* knock-out mice.
Semmelweis University - Department of Physiology (Hungry)
Dr Miklós Geiszt

Generation of novel antibodies against the extracellular ectodomain of the NADPH oxidase DUOX1 by production and purification in insect cells.
University of California - Department of Pharmaceutical Chemistry (USA)
Pr. Paul R. Ortiz de Montellano

Study of the potential role of H_2O_2 in thyroid tumorigenesis
Institut Gustave Roussy - UMR 8200 CNRS "Stabilité génétique et Oncogenèse" (France)
Pr. Corinne Dupuy

Antiviral role of DUOX2 in airway immune defenses
Centre de Recherche du CHUM (Montréal)
Dr. Nathalie Grandvaux

4.5. Awards :

2010 - The Belgium Thyroid Club Award

2003 - Travel grant for the 43rd ICAAC (Interscience Conference on Antimicrobial and Chemotherapy) meeting at Chicago (USA)

2001 - Travel grant for the 27th ETA (European Thyroid Association) meeting at Warsaw (PL)

1997 - Medal of the Université Libre de Bruxelles (U.L.B)

4.6. Grants :

2005-2006	Crédit aux chercheurs FNRS (1.5.167.06.F)	4,200.00 €
2009-2010	Crédit aux chercheurs FNRS (1.5.083.10.F)	20,0000.00 €
2011-2012	Fonds Emile DEFAY	10,000.00 €
	Fonds Yvonne SMITS	25,000.00 €
2012-2017	Action de Recherche Concerté-ARC	500,000.00 €

V. Research Topics:

It is widely accepted that many cell types other than phagocytes are able to produce hydrogen peroxide (H_2O_2). Duox (Dual Oxidase) proteins belong to the family of NADPH oxidases that is currently composed of seven members: NOX1-5 and Duox1-2. These membrane proteins are characterized by the presence of an intracytoplasmic catalytic core responsible for their generating activity of reactive oxygen species. Duox1 and Duox2 proteins were originally found in the thyroid tissue as part of the H_2O_2 generating system necessary for the biosynthesis of the thyroid hormones. The dual oxidases are also expressed in the colon and lungs, and are the only NADPH oxidases that produce directly extracellular H_2O_2. Beside the metabolic role of H_2O_2 in the thyroid, it has been shown that H_2O_2 is also able to provoke DNA single- and double-strand breaks, the precursors of a mutagenic lesion. My research team will characterize the function and role of these new oxidases in physiological and pathological situations. We use the thyroid as a model before transposing our results to other organs expressing the Duox isoenzymes. We study the Duox maturation factors (DuoxA1-2) involved in the processing and activation of Duox enzymes. We screen for mutations in the *DUOX* / *DUOXA* genes in patients with congenital hypothyroidism caused by iodide organification defect. We evaluate the H_2O_2 mutagenic effects produced by the NADPH oxidases Duox1-2 in in-vivo models of transgenic mice deficient for *DUOX1*, *DUOX2* or *DUOXA1*-2 genes.