Curriculum vitae

Bernard Moussian

Birthday:	02.02.1968
Nationality:	German
Civil state:	married, 3 children

Academic career

Since April 2023:	Research activities (PI) at the **Institut Sophia Agrobiotech**, Sophia Antipolis, France
2022-2023:	**Replacement Professor** at the Eberhard-Karls Universität Tübingen. (*Détachement* of the Université Côte d'Azur)
Since 2015:	**Guest professor** at the Shanxi University, Taiyuan, China.
2015-2017:	**Sabbatical** at the TU Dresden, Institut für Angewandte Zoologie.
Since 2014:	**Professor** at **Université Côte d'Azur,** Nice, France.
08/09.2012:	**Guest professor** at the Université Paul-Sabatier in Toulouse, France.
2009-2014:	**Independent group leader** (DFG-Heisenberg Stipend) at the Eberhard-Karls Universität Tübingen.
2009-2010:	**Guest scientist** at the Sahlgrenska Akademie at the University Göteborg in Göteborg, Sweden.
2006-2009:	**Independent group leader** at the Max-Planck-Institute for Developmental Biology, Tübingen.
2004-2006:	**Project leader** at the Max-Planck-Institute for Developmental Biology, Tübingen, Teaching at the Eberhard-Karls University Tübingen.
1999-2004:	**Postdoc** at the Max-Planck-Institute for Developmental Biology, Tübingen. Director Prof. Christiane Nüsslein-Volhard.

Academic qualification

2013:	**Qualification** aux fonctions de professeur, Paris, France.
28.06.2006:	**Habilitation** (HDR) at the Eberhard-Karls University Tübingen; supervisor: Prof. Gerd Jürgens.
2004:	**Qualification** aux fonctions de maître de conférences, Paris, France.
1995-1999:	**Dissertation** at the Institute for Developmental Genetics at the Eberhard-Karls University Tübingen: „The role of the *ZWILLE* gene in the organization of the embryonic shoot apical meristem in *Arabidopsis thaliana*"; unter der Leitung of Prof. Thomas Laux & Prof. Gerd Jürgens.
1993/94:	**Diplom** at the Ludwig-Maximilians University of München and at the CNRS-ISV in Gif-sur-Yvette, France: „Search for *hrp*-regulatory genes in the flanking region of the *hrp*-cluster of *Xanthomonas campestris* pv. Vesicatoria"; supervisor: Prof. Ulla Bonas.
1989-1995:	**Studies in Biologie** at the Ludwig-Maximilians University München, an der University Paris XI in Orsay, France. Subjects: Genetics, Plant Physiology, Biochemistry and Ecologie.

Funding

February 2026 - January 2030: **ANR Project** "aShield - Insect's Appendages: roleS in Habitat Interactions and External Local Defence mechanisms" at the Institut Sophia Agrobiotech, INRAe, France together with Dr. Thomas Chertemps (University of Sorbonne, Paris) and Fabrice Neiers (University of Bourgogne, Dijon).

2024: **ANR-DFG Project** „Xenobiotics Control in Insect Legs" for a PhD-student and a post-doc and consumables. Budget pending

November 2023 – October 2026:
SPP-DFG Project (MO1714/15-1) „Timing of Chitin/Chitosan Assembly in Insects" for a PhD-student and consumables. Budget € 166.160

January 2022 – December 2023:

DAAD/Procop mobility grant for travelling between Dijon/France and Tübingen/Germany. Budget € 12.000

January 2022 – December 2024:
DFG Project (MO1714/7-2) „Proximate und ultimate Gründe der Faserorientierung in der Kutikula von Insekten" for a PhD-student and consumables. Budget € 228.850

January 2021 – December 2023:
Sino-German Mobility Program (M-0357) for travelling between Taiyuan (Shanxi University) and Tübingen (University of Tübingen). Budget: to be calculated. Budget € 139.000

January 2019 – December 2020:

DAAD/Procop mobility grant for travelling between Dijon/France and Tübingen/Germany. Budget € 12.000

January 2019 - December 2021:
ICEPHA „Graduate Program" of the University Tübingen and of the Margarete-Fischer-Bosch Institute for Clinical Pharmacology, Stuttgart, for the project: „The fruit fly *Drosophila melanogaster* as an in vivo tool to test human membrane transporters in anti-cancer drug development" for a PhD-student and consumables. Budget € 153.000

January 2018 - December 2020:
DFG Project (MO1714/10-1) „Molekulare Verankerung of Resilin in der elastischen Kutikula der Insekten" for a PhD-student and consumables. Budget € 233.500

January 2018 - December 2020:
DFG Project (MO1714/9-1) „Bildung der Kutikulalipide in Insekten und der Einfluß der Kutikulalipide auf ökologische Anpassungsfähigkeit der Insekten" " for a PhD-student and consumables. Budget € 238.400

March 2016 - February 2019:
DFG Project (MO1714/7-1) „Aufklärung der Mechanismen der Chitinfaser-Orientierung in Arthropodenkutikula" for a PhD-student and consumables. Budget € 128.600

March 2015 - February 2016:
DFG Project (MO1714/6-1) „Konstruktion einer Lipid-basierten Barriere gegen Austrocknung in der Taufliege *Drosophila melanogaster*" for a PhD-student and

consumables. Budget € 67.050

October 2014 - September 2017:
ICEPHA „Graduate Program" of the University Tübingen and of the Margarete-Fischer-Bosch Institute for Clinical Pharmacology, Stuttgart, for the project: „The model of the fruit fly *Drosophila melanogaster* as a novel and highly innovative test system for human membrane transporters in anti-cancer drug development" for a PhD-student and consumables. Budget € 153.000

October 2009 - September 2014:
Heisenberg Stipend der DFG (MO1714/3-1&2). Budget € 300.000.

October 2009 - September 2014:
DFG Grant (MO1714/2-1) for two PhD-students and consumables. Budget € 476.000

April 2009 - March 2010:
Guest scientist stipend of the **Wenner-Gren Stiftung** for collaboration with the laboratory of Dr. Anne Uv an der University Göteborg in Schweden. Budget € 24.000

July 2007 - June 2009:
SFB Grant (446/4-07) for a PhD-student and consumables. Budget € 90.000

October 2006 - September 2009:
DFG Forschungsmittel (MO1714/1-1/2), for two PhD-students and consumables. Budget € 350.000

publications

Pre-doctoral publication

1 Bonas U, Fenselau S, Horns T, Marie C, **Moussian B**, Pierre M, Wengelnik K & Van den Ackerveken G. hrp and avirulence genes of *Xanthomonas campestris* pv. *vesicatoria* controlling the interaction with pepper and tomato. In: Advances in Molecular Genetics of Plant-Microbe-Interactions. M. Daniels, J. A. Downie, A. E. Osbourn (eds.). Kluwer Academic Publishers. 1994; Vol. 3: 57-64.

Doctoral publications

2 Endrizzi K, **Moussian B**, Haecker A, Levin JZ & Laux T. The *SHOOT MERISTEMLESS* gene is required for maintenance of undifferentiated cells in *Arabidopsis* shoot and floral meristems and acts at a different regulatory level than the meristem genes *WUSCHEL* and *ZWILLE*. Plant Journal. 1996 Dec;10(6):967-79.

3 **Moussian B**, Schoof H, Haecker A, Jürgens G & Laux T. Role of the *ZWILLE* gene in the regulation of central shoot meristem cell fate during *Arabidopsis* embryogenesis. EMBO Journal. 1998 Mar 16;17(6):1799-809.

4 **Moussian B**, Haecker A & Laux T. *ZWILLE* buffers meristem stability in *Arabidopsis thaliana*. Development Genes & Evolution. 2003 Nov;213(11):534-40.

Publications since 1999

Original articles

5 Charatsi I, Luschnig S, Bartoszewski S, Nüsslein-Volhard C & **Moussian B**. Krapfen/dMyd88 is required for the establishment of dorsoventral pattern in the *Drosophila* embryo. Mechanisms of Development. 2003 Feb;120(2):219-26.

6 Luschnig S, **Moussian B**, Krauss J, Desjeux I, Perkovic J & Nüsslein-Volhard C. An F1 genetic screen for maternal-effect mutations affecting embryonic pattern formation in *Drosophila melanogaster*. Genetics. 2004 May;167(1):325-42.

7 **Moussian B**, Schwarz H, Bartoszewski S & Nüsslein-Volhard C. Involvement of chitin in exoskeleton morphogenesis in *Drosophila melanogaster*. Journal of Morphology. 2005 Apr;264(1):117-30.

8 **Moussian B**, Söding J, Schwarz H & Nüsslein-Volhard C. Retroactive, a membrane-anchored extracellular protein related to vertebrate snake neurotoxin-like proteins, is required for cuticle organization in the larva of *Drosophila melanogaster*. Developmental Dynamics. 2005 Apr 20;233(3):1056-1063.

9 **Moussian B**, Tang E, Helms S, Tonning A, Schwarz H, Nüsslein-Volhard C & Uv AE. *Drosophila* Knickkopf and Retroactive are needed for epithelial tube growth and cuticle differentiation through their specific requirement for chitin filament assembly. Development. 2006 Jan;133(1):163-71.

10 Tonning A, Helms S, Schwarz H, Uv AE & **Moussian B**. Hormonal regulation of *mummy* is needed for apical extracellular matrix formation and epithelial morphogenesis in *Drosophila*. Development. 2006 Jan;133(2):331-41.

11 **Moussian B**, Seifarth C, Müller U, Berger J & Schwarz H. Cuticle differentiation during of *Drosophila* embryogenesis. Arthropod Structure & Development. 2006 Sept;35(3):137-152.

12 **Moussian B**, Veerkamp J, Müller U & Schwarz H. Assembly of the *Drosophila* larval exoskeleton requires controlled secretion and shaping of the apical plasma membrane. Matrix Biology. 2007 Jun;26(5):337-47.

13 Haecker A, Qi D, Lilja T, **Moussian B**, Andrioli LP, Luschnig S & Mannervik M. *Drosophila* brakeless interacts with atrophin and is required for tailless-mediated transcriptional repression in early embryos. PLoS Biology. 2007 Jun;5(6):e145.

14 Haecker A, Bergman M, Neupert C, **Moussian B**, Luschnig S, Aebi M & Mannervik M. Wollknauel is required for embryo patterning and encodes the Drosophila ALG5 UDP-glucose:dolichyl-phosphate glucosyltransferase. Development. 2008 May;135(10):1745-9.

15 Havemann J, Müller U, Berger J, Schwarz H, Gerberding M & **Moussian B**. Cuticle differentiation in the embryo of the amphipod crustacean *Parhyale hawaiensis*. Cell & Tissue Research. 2008. May;332(2):359-70.

16 Gangishetti U, Breitenbach S, Zander M, Shaik Saheb K, Müller U, Schwarz H & **Moussian B**. Effects of Benzoylphenylurea on chitin synthesis and orientation in the cuticle of the *Drosophila* Larva. European Journal of Cell Biology. 2009 March;88(3):167-180.

17 Meyer F & **Moussian B**. *Drosophila* CollagenXV/XVIII modulates motor axon pathfinding accuracy. Development, Growth & Differentiation. 2009 Jun;51(5):483-98.

18 Kim S, Gailite I, **Moussian B**, Luschnig S, Goette M, Fricke K, Honemann-Capito M, Grubmüller H & Wodarz A. Kinase-activity-independent functions of atypical protein kinase C in *Drosophila*. Journal of Cell Science. 2009 Oct 15;122(Pt 20):3759-71.

19 Norum M, Tång E, Chavoshi T, Schwarz H, Linke D, Uv A & **Moussian B**. Trafficking through COPII stabilises cell polarity and drives secretion during *Drosophila* epidermal differentiation. PLoS One. 2010 May 24;5(5):e10802.

20 Chavoshi TM, **Moussian B** & Uv A. Tissue-autonomous EcR functions are required for concurrent organ morphogenesis in the *Drosophila* embryo. Mechanisms of Development. 2010 May-Jun;127(5-6):308-19.

21 Stein D, Charatsi I, Delotto R, Luschnig S & **Moussian B**. Localization and Activation of the *Drosophila* Protease Easter Require the ER Resident Saposin-Like Protein Seele. Current Biology. 2010 Nov 9;20(21):1953-8.
22 Shaik KS, Pabst M, Schwarz H, Altmann F & **Moussian B**. The Alg5 ortholog Wollknäuel is essential for correct epidermal differentiation during *Drosophila* late embryogenesis. Glycobiology. 2011 Jun;21(6):743-56.
23 Chaudhari SS, Arakane Y, Specht CA, **Moussian B**, Boyle DL, Park Y, Kramer KJ, Beeman RW & Muthukrishnan S. Knickkopf protein protects and organizes chitin in the newly synthesized insect exoskeleton. Proceedings of the National Academy of Sciences of the USA. 2011 Oct 11;108(41):17028-33.
24 Shaik KS, Meyer F, Vázquez AV, Flötenmeyer M, Cerdán ME & **Moussian B**. □-Aminolevulinate synthase is required for apical transcellular barrier formation in the skin of the *Drosophila* larva. European Journal of Cell Biology. 2012 Mar;91(3):204-15.
25 Gangishetti U, Veerkamp J, Bezdan D, Schwarz H, Lohmann I & **Moussian B**. Grainy head and ecdysone cooperate during differentiation of the *Drosophila* skin. Insect Molecular Biology. 2012 Jun;21(3):283-95.

26 Letizia A, Ricardo S, **Moussian B**, Martín N, Llimargas M. A functional role of the extracellular domain of Crumbs in cell architecture and apicobasal polarity. J Cell Sci. 2013 May 15;126(Pt 10):2157-63.
27 Meyer F, Flötenmeyer M & **Moussian B**. The sulfonylurea receptor Sur is dispensable for chitin synthesis in *Drosophila melanogaster* embryos. Pest Management Science. 2013 Oct;69(10):1136-40.
28 Chaudhari SS, Arakane Y, Specht CA, **Moussian B**, Kramer KJ, Muthukrishnan S & Beeman RW. Retroactive maintains cuticle integrity by promoting the trafficking of Knickkopf into the procuticle of *Tribolium castaneum*. PLoS Genetics. 2013 9(1): e1003268

29 Shaik KS, Wang Y, Aravind L, **Moussian B**. The Knickkopf DOMON domain is essential for cuticle differentiation in Drosophila melanogaster. Arch Insect Biochem Physiol. 2014 Jun;86(2):100-6.

30 Chaudhari SS, **Moussian B**, Specht CA, Arakane Y, Kramer KJ, Beeman RW, Muthukrishnan S. Functional specialization among members of Knickkopf family of proteins in insect cuticle organization. PLoS Genet. 2014 Aug 21;10(8):e1004537.
31 Wang Y, Odemer R, Rosenkranz P & **Moussian B**. Putative orthologues of genetically identified *Drosophila melanogaster* chitin producing and organising genes in *Apis mellifera*. Apidologie. 2014 Nov; 45(6):733-747.

32 Chanut-Delalande H, Hashimoto Y, Pelissier-Monier A, Spokony R, Dib A, Kondo T, Bohère J, Niimi K, Latapie Y, Inagaki S, Dubois L, Valenti P, Polesello C, Kobayashi S, **Moussian B**, White KP, Plaza S, Kageyama Y & Payre F. Pri peptides are mediators of ecdysone for the temporal control of development. Nat Cell Biol. 2014 Nov;16(11):1035-44.
33 **Moussian B**, Letizia A, Guillermo Martínez-Corrales G, Rotstein B, Casali A & Llimargas M. Deciphering the genetic programme triggering timely and spatially regulated chitin deposition. PLoS Genet. 2015 Jan 24;11(1):e1004939.
34 Chaudhari SS, Noh MY, **Moussian B**, Specht CA, Kramer KJ, Beeman RW, Arakane Y & Muthukrishnan S. Knickkopf and retroactive proteins are required for formation of laminar serosal procuticle during embryonic development of Tribolium castaneum. Insect Biochem Mol Biol. 2015 Mar 4. pii: S0965-1748(15)00047-8. doi: 10.1016/j.ibmb.2015.02.013.
35 Wang Y, Zuber, R, Oehl K, Norum M & **Moussian B**. Report on *Drosophila melanogaster* larvae without functional tracheae. J Zoology. 2015 Jun;296(2):139-45.
36 Byri S, Misra T, Syed ZA, Bätz T, Shah J, Boril L, Glashauser J, Aegerter-Wilmsen T, Matzat T, **Moussian B**, Uv A & Luschnig S. The Triple-Repeat Protein Anakonda Controls Epithelial Tricellular Junction Formation in *Drosophila*. Dev Cell. 2015 Jun 8;33(5):535-48.

37 Wang Y, Cruz T, Irion U & **Moussian B**. Differentiated muscles are mandatory for gas-filling of the *Drosophila* airway system. Biol Open. 2015 Nov 30;4(12):1753-61.
38 Öztürk-Çolak A, **Moussian B**, Araújo SJ & Casanova J. A feedback mechanism converts individual cell features into a supracellular ECM structure in *Drosophila* trachea. Elife. 2016 Feb 2;5. pii: e09373. doi: 10.7554/eLife.09373.
39 Wang Y, Pulfermuller A, Cruz T, Grégoire S, Ferveur J-F & **Moussian B**. Inhibition of fatty acid desaturases in *Drosophila melanogaster* larvae blocks feeding and developmental progression. Arch Insect Biochem Physiol. 2016 May;92(1):6-23.
40 Wang Y, Yu Z, Zhang J & **Moussian B**. Regionalization of surface lipids in insects. Proceedings B. 2016 May 11;283(1830).
41 Yu Z, Zhang X, Wang Y, **Moussian B**, Zhu KY, Li S, Ma E & Zhang J. LmCYP4G102: An oenocyte-specific cytochrome P450 gene required for cuticular waterproofing in the migratory locust, *Locusta migratoria*. Sci Rep. 2016 Jul 22;6:29980. doi: 10.1038/srep29980.
42 Kakanj P, **Moussian B**, Grönke S, Bustos V, Eming SA, Partridge L & Leptin M. Insulin and TOR signal in parallel through FOXO and S6K to promote epithelial wound healing. Nat Commun. 2016 Oct 7;7:12972.
43 Hamp J, Löwer A, Dottermusch-Heidel C, Beck L, **Moussian B**, Flötenmeyer M & Önel SF. *Drosophila* Kette coordinates myoblast junction dissolution and the ratio of Scar-to-WASp during myoblast fusion. J Cell Sci. 2016 Sep 15;129(18):3426-36
44 Yu R, Liu W, Li D, Zhao X, Ding G, Zhang M, Ma E, Zhu KY, Li S, **Moussian B*** & Zhang J*. Helicoidal organization of chitin in the cuticle of the migratory locust requires the function of the chitin deacetylase 2 enzyme (LmCDA2). J Biol Chem. 2016 Nov 18;291(47):24352-24363. * Corresponding authors
45 Wang Y, Zuber R, Laudahn L, Berger J & **Moussian B**. Cuticular body hairs mediate clumping of small *Camponotus floridanus* larvae. Arthropod Struct Dev. 2017 Jan;46(1):108-115.
46 Wang Y, Carballo RG & **Moussian B**. Double cuticle barrier in two global pests, the whitefly *Trialeurodes vaporariorum* and the bedbug *Cimex lectularius*. J Exp Biol. 2017 Apr 15;220(Pt 8):1396-1399.
47 Yu Z, Wang Y, Zhao X, Liu X, Ma E*, **Moussian B*** & Zhang J*. The ABC transporter ABCH-9C is needed for cuticle barrier construction in *Locusta migratoria*. Insect Biochem Mol Biol. 2017 Jun 10;87:90-99. * Corresponding authors

48 Li K, Zhang X, Zuo Y, Liu W, Zhang J* & **Moussian B***. Timed Knickkopf function is essential for wing cuticle formation in *Drosophila melanogaster*. Insect Biochem Mol Biol. 2017 Aug 15;89:1-10. * Corresponding authors
49 Tempesta C, Hijazi A, **Moussian B** & Roch F. Boudin trafficking reveals the dynamic internalisation of specific septate junction components in *Drosophila*. PLoS One. 2017 Oct 4;12(10):e0185897.
50 Zhao X, Qin Z, Liu W, Liu X, **Moussian B**, Ma E, Li S & Zhang J. Nuclear receptor HR3 controls locust molt by regulating chitin synthesis and degradation genes of Locusta migratoria. Insect Biochem Mol Biol. 2017 Nov 4. pii: S0965-1748(17)30178-9. doi: 10.1016/j.ibmb.2017.11.001.

51 Zuber R, Norum M, Wang Y, Oehl K, Gehring N, Accardi D, Bartozsewski S, Berger J, Flötenmeyer M & **Moussian B.** The ABC transporter Snu and the extracellular protein Snsl cooperate in the formation of the lipid-based inward and outward barrier in the skin of *Drosophila*. Eur J Cell Biol. 2017 Dec 27. pii: S0171-9335(17)30185-1.

52 Wang Y, Berger J & **Moussian B**. Trynity models a tube valve in the *Drosophila* larval airway system. Dev Biol. 2018 May 15;437(2):75-83. doi: 10.1016/j.ydbio.2018.02.019.
53 Pan PL, Ye YX, Lou YH, Lu JB, Cheng C, Shen Y, **Moussian B** & Zhang CX. A comprehensive omics analysis and functional survey of cuticular proteins in the brown planthopper. Proc Natl Acad Sci U S A. 2018 May 15;115(20):5175-5180.

54 Zhang T, Liu W, Li D, Gao L, Ma E, Zhu KY, **Moussian B***, Li S* & Zhang J*. LmCht5-1 promotes pro-nymphal molting during locust embryonic development. Insect Biochem Mol Biol. 2018 Sep 6;101:124-130. * Corresponding authors
55 Yu RR, Liu WM, Zhao XM, Zhang M, Li DQ, Zuber R, Ma EB, Zhu KY, **Moussian B*** & Zhang JZ*. LmCDA1 organizes the cuticle by chitin deacetylation in *Locusta migratoria*. Insect Mol Biol. 2018 Nov 24; 28(3):301-312. * Corresponding authors
56 Wang Y, Maier A, Gehring N & **Moussian B**. Inhibition of fatty acid desaturation impairs cuticle differentiation in *Drosophila melanogaster*. Arch Insect Biochem Physiol. 2019 Apr;100(4):e21535. doi: 10.1002/arch.21535.
57 Li DT, Chen X, Wang XQ, **Moussian B** & Zhang CX. The fatty acid elongase gene family in the brown planthopper, *Nilaparvata lugens*. Insect Biochem Mol Biol. 2019 May;108:32-43. doi: 10.1016/j.ibmb.2019.03.005.
58 Zuber R, Shaik KS, Meyer F, Ho HN, Speidel A, Gehring N, Bartoszewski S, Schwarz H & **Moussian B**. The putative C-type lectin Schlaff ensures epidermal barrier compactness in *Drosophila*. Sci Rep. 2019 Mar 29;9(1):5374. doi: 10.1038/s41598-019-41734-9.
59 Zhang M, Ji Y, Zhang X, Ma P, Wang Y, **Moussian B*** & Zhang J*. The putative chitin deacetylases serpentine and vermiform have non-redundant functions during Drosophila wing development. Insect Biochem Mol Biol. 2019 May 17. pii: S0965-1748(18):30334-5. doi: 10.1016/j.ibmb.2019.05.008. * Corresponding authors
60 Zhao X, Gou X, Liu W, Ma E, **Moussian B**, Li S, Zhu K & Zhang J. The wing-specific cuticular protein LmACP7 is essential for normal wing morphogenesis in the migratory locust. Insect Biochem Mol Biol. 2019 Sep;112.
61 Dong W, Dobler R, Dowling DK & **Moussian B**. The cuticle inward barrier in *Drosophila melanogaster* is shaped by mitochondrial and nuclear genotypes and a sex-specific effect of diet. PeerJ. 2019 Oct 4;7:e7802.
62 Zhang XB, Dong W, Li KX, Wang JJ, Shen J*, **Moussian B*** & Zhang JZ*. Flexible manipulation of Omb levels in the endogenous expression region of *Drosophila* wing by combinational overexpression and suppression strategy. Insect Sci. 2020 Feb; 27(1):14-21. doi: 10.1111/1744-7917.12705. * Corresponding authors
63 Wang Y, Norum M, Oehl K, Yang Y, Zuber R, Yang J, Farine JP, Gehring N, Flötenmeyer M, Ferveur JF & **Moussian B**. Dysfunction of Oskyddad Causes Harlequin-type Ichthyosis-Like Defects in *Drosophila Melanogaster*. PLoS Genet. 2020 Jan 13; 16(1):e1008363.
64 Li DT, Dai YT, Chen X, Wang XQ, Li ZD, **Moussian B** & Zhang CX. Ten Fatty acyl-CoA Reductase Family Genes Were Essential for the Survival of the Destructive Rice Pest, *Nilaparvata Lugens*. Pest Manag Sci 2020 Jan 28.
65 Dong W, Gao YH, Zhang XB, **Moussian B*** & Zhang JZ*. Chitinase10 controls chitin amounts and organization in the wing cuticle of *Drosophila*. Insect Sci. 2020 Mar 4. * Corresponding authors
66 Zhao X, Yang Y, Niu N, Zhao Y, Liu W, Ma E, **Moussian B** & Zhang J. The fatty acid elongase gene LmELO7 is required for hydrocarbon biosynthesis and cuticle permeability in the migratory locust, *Locusta migratoria*. Journal of Insect Physiology, 04 Apr 2020:104052
67 Zhang R, Zhao X, Liu X, Zhang X, Yu R, Ma E, **Moussian B**, Zhu K & Zhang J. Effect of RNAi-mediated silencing of two Knickkopf family genes (LmKnk2 and LmKnk3) on cuticle formation and insecticide susceptibility in *Locusta migratoria*. Pest Manag Sci. 2020 May 1. doi: 10.1002/ps.5879.
68 Sviben S, Spaeker O, Bennet M, Albéric M, Dirks JH, **Moussian B**, Fratzl P, Bertinetti L & Politi Y. Epidermal Cell Surface Structure and Chitin-Protein Co-assembly Determine Fiber Architecture in the Locust Cuticle. ACS Appl Mater Interfaces. 2020 Jun 10;12(23):25581-25590.
69 Zhao Y, Liu W, Zhao X, Yu Z, Guo H, Yang Y, Zhang J, **Moussian B*** & Zhang J*. Apolipophorin-II/I Contributes to Cuticular Hydrocarbon Transport and Cuticle Barrier Construction in *Locusta migratoria*. Front Physiol. 2020 Jul 8;11:790. * Corresponding authors

70 Yang Y, Zhao X, Niu N, Zhao Y, Liu W, **Moussian B** & Zhang J. Two fatty acid synthase genes from the integument contribute to cuticular hydrocarbon biosynthesis and cuticle permeability in *Locusta migratoria*. Insect Mol Biol. 2020 Aug 2.
71 Wang Y, Farine J-P, Yang Y, Yang J, Tang W, Gehring N, Ferveur J-F & Moussian B. Transcriptional Control of Quality Differences in the Lipid-Based Cuticle Barrier in *Drosophila suzukii* and *Drosophila melanogaster*. Front Genet. 2020 Aug 6;11:887.
72 Ma R, Haji-Ghassemi O, Ma D, Jiang H, Lin L, Yao L, Samurkas A, Li Y, Wang Y, Cao P, Wu S, Zhang Y, Murayama T, **Moussian B**, Van Petegem F & Yuchi Z. Structural basis for diamide modulation of ryanodine receptor. Nat Chem Biol. 2020 Aug 17. doi: 10.1038/s41589-020-0627-5.
73 Zhang M, Ma PJ, Zhang TT, Gao ZM, Zhao P, Liu XJ, Zhang XY, Liu WM, Yu RR, **Moussian B*** & Zhang JZ*. Roles of LmCDA1 and LmCDA2 in cuticle formation in the foregut and hindgut of *Locusta migratoria*. Insect Sci. 2020 Oct 10. * Corresponding authors
74 Zuber R, Wang Y, Gehring N, Bartoszewski S & **Moussian B**. Tweedle proteins form extracellular 2D-structures defining body and cell shape in *Drosophila melanogaster*. Open Biol. 2020 Dec;10(12):200214. doi: 10.1098/rsob.200214.
75 Lerch S, Zuber R, Gehring N, Wang Y, Eckel B, Klass K-D, Lehmann F-O & **Moussian B**. Resilin matrix distribution, variability and function in *Drosophila*. BMC Biol. 2020 Dec 14;18(1):195. doi: 10.1186/s12915-020-00902-4.
76 Wang Y, Misto M, Yang J, Gehring N, Yu X & **Moussian B**. Toxicity of Dithiothreitol (DTT) to *Drosophila melanogaster*. Tox Rep. 2021 8: 124-130. doi: 10.1016/j.toxrep.2020.12.014.
77 Li DT, Guo JS, Wang XQ, **Moussian B** & Zhang CX. Three-dimensional reconstruction of pore canals in the cuticle of the brown planthopper. Sci China Life Sci. 2021 Feb 4. doi: 10.1007/s11427-020-1857-7.
78 Wang XQ, Guo JS, Li DT, Yu Y, Hagoort J, **Moussian B** & Zhang CX. Three-dimensional reconstruction of a whole insect reveals its phloem sap-sucking mechanism at nano-resolution. Elife. 2021 Feb 23;10:e62875.
79 Shen Y, Lu JB, Chen YZ, **Moussian B** & Zhang CX. A lateral oviduct secreted protein plays a vital role for egg movement through the female reproductive tract in the brown planthopper. Insect Biochem Mol Biol. 2021 Feb 24:103555. doi: 10.1016/j.ibmb.2021.103555.
80 Mokeev V, Flaven-Pouchon J, Wang Y, Gehring N & **Moussian B.** Ratio between *Lactobacillus plantarum* and *Acetobacter pomorum* on the surface of *Drosophila melanogaster* adult flies depends on cuticle melanisation. BMC Res Notes. 2021 Sep 8;14(1):351. doi: 10.1186/s13104-021-05766-7.
81 Lu JB, Guo JS, Chen X, Cheng C, Luo XM, Zhang XY, **Moussian B**, Chen JP, Li JM & Zhang CX. Chitin synthase 1 and five cuticle protein genes are involved in serosal cuticle formation during early embryogenesis to enhance eggshells in *Nilaparvata lugens*. Insect Sci. 2022 Apr;29(2):363-378. doi: 10.1111/1744-7917.12937.
82 Yu RR, Zhang R, Liu WM, Zhao XM, Zhu KY, **Moussian B** & Zhang JZ. The DOMON domain protein LmKnk contributes to correct chitin content, pore canal formation and lipid deposition in the cuticle of *Locusta migratoria* during moulting. Insect Mol Biol. 2022 Apr;31(2):127-138. doi: 10.1111/imb.12745.
83 Toto NA, Elhenawy HI, Eltaweil AS, El-Ashram S, El-Samad LM, **Moussian B** & El Wakil A. *Musca domestica* (Diptera: Muscidae) as a biological model for the assessment of magnetite nanoparticles toxicity. Sci Total Environ. 2022 Feb 1;806(Pt 4):151483. doi: 10.1016/j.scitotenv.2021.151483.
84 Dong W, Zhang X, Kong Y, Zhao Z, Mahmoud A, Wu L, **Moussian B** & Zhang J. CYP311A1 in the anterior midgut is involved in lipid distribution and microvillus integrity in *Drosophila melanogaster*. Cell Mol Life Sci. 2022 Apr 28;79(5):261. doi: 10.1007/s00018-022-04283-5.

85 El-Samad LM, El-Gerbed MS, Hussein HS, Flaven-Pouchon J, Wakil AE & **Moussian B**. Imidacloprid-induced pathophysiological damage in the midgut of *Locusta migratoria* (Orthoptera: Acrididae) in the field. Environ Sci Pollut Res Int. 2022 Mar 30. doi: 10.1007/s11356-022-19804-9.

86 Kakanj P, Bhide S, **Moussian B** & Leptin M. Autophagy-mediated plasma membrane removal promotes the formation of epithelial syncytia. EMBO J. 2022 Mar 9:e109992. doi: 10.15252/embj.2021109992.

87 Flaven-Pouchon J & **Moussian B**. Fluorescent Microscopy-Based Detection of Chitin in Intact *Drosophila melanogaster*. Front Physiol. 2022 Apr 26;13:856369. doi: 10.3389/fphys.2022.856369.

88 Lerch S, Yang Y, Flaven-Pouchon J, Gehring N & **Moussian B**. Resilin is needed for wing posture in *Drosophila suzukii*. Arch Insect Biochem Physiol. 2022 May 23:e21913. doi: 10.1002/arch.21913.

89 Gao L, Zang X, Qiao H, **Moussian B** & Wang Y. Xenobiotic responses *of Drosophila melanogaster* to insecticides with different modes of action and entry. Arch Insect Biochem Physiol. 2022 Aug 8:e21958. doi: 10.1002/arch.21958.

90 Pang M, Peng R, Wang Y, Zhu Y, Wang P, **Moussian B**, Su Y, Liu X & Ming D. Molecular understanding of the translational models and the therapeutic potential natural products of Parkinson's disease. Biomed Pharmacother. 2022 Nov;155:113718. doi: 10.1016/j.biopha.2022.113718.

91 Dong W, Flaven-Pouchon J, Gao YH, Song CY, El Wakil A, Zhang JZ & **Moussian B.** Chitinase 6 is required for procuticle thickening and organ shape in *Drosophila* wing. Insect Sci. 2023 Apr 17;30(2):268-278. doi: 10.1111/1744-7917.13115.

92 Xing W, Lin L, Wang Z, Xiong L, Hadiatullah H, Chen W, You S, **Moussian B**, Wang Y & Yuchi Z. Expression and purification of snustorr snarlik protein from *Plutella xylostella*. Protein Expr Purif. 2023 Jun;206:106256. doi: 10.1016/j.pep.2023.106256.

93 Zhao Y, Liu W, Zhao X, Yu Z, Guo H, Yang Y, **Moussian B**, Zhu KY & Zhang J. Lipophorin receptor is required for the accumulations of cuticular hydrocarbons and ovarian neutral lipids in *Locusta migratoria*. Int J Biol Macromol. 2023 Feb 17;236:123746. doi: 10.1016/j.ijbiomac.2023.123746.

94 Yang J, Flaven-Pouchon J, Yang Y, Gehring N & **Moussian B**. The greenhouse and field insecticide Spirotetramat differentially affects the surface barrier efficiency in non-target *Drosophila melanogaster*. Entomologia Generalis. 2023. In print. DOI: 10.1127/entomologia/2022/1732

95 Zhang X, Ji Y, **Moussian B**, Yang S, Zhang J, Zhang T, Zhang M. Serpentine and Vermiform Are Produced Autonomously to Fulfill Their Function in *Drosophila* Wings. Insects. 2023 Apr 23;14(5):406. doi: 10.3390/insects14050406.

96 Arafat EA, El-Samad LM, **Moussian B**, Hassan MA. Insights into spermatogenesis in the migratory locust, *Locusta migratoria* (Linnaeus, 1758) (Orthoptera: Acrididae), following histological and ultrastructural features of the testis. Micron. 2023 Sep;172:103502. doi: 10.1016/j.micron.2023.103502.

97 Arafat EA, El-Sayed DS, Hussein HK, Flaven-Pouchon J, **Moussian B**, El-Samad LM, El Wakil A, Hassan MA. Entomotherapeutic Role of *Periplaneta americana* Extract in Alleviating Aluminum Oxide Nanoparticles-Induced Testicular Oxidative Impairment in Migratory Locusts (*Locusta migratoria*) as an Ecotoxicological Model. Antioxidants (Basel). 2023 Mar 6;12(3):653. doi: 10.3390/antiox12030653.

98 Yu X, Li Y, Tian X, Zang X, Yang S, Qiao H, Zhu C, **Moussian B**, Wang Y. Pb exposure causes non-linear accumulation of Pb in *D. melanogaster* controlled by metallothionein B and exerts ecological effects. Sci Total Environ. 2023 Jul 25;900:165680. doi: 10.1016/j.scitotenv.2023.165680.

99 Yang J, Flaven-Pouchon J, Wang Y, **Moussian B**. Spirotetramat reduces fitness of the spotted-wing Drosophila, *Drosophila suzukii*. Insect Sci. 2023 Oct 18. doi: 10.1111/1744-7917.13283.
100 Zang X, Gao L, Tian, X, Qiao H, Zhu C, Chen N, Ren B, **Moussian B**. Wang Y. Exposure to chlorantraniliprole alters the environmental adaptability of insecticide resistant insects. Entomologia Generalis, Volume 43 Number 5 (2023), p. 1031 – 1040.
101 Yang J, Wang Y, El Wakil A, **Moussian B**. Extra-corporeal detoxification in insects. Heliyon. 2024 Mar 21;10(7):e28392. doi: 10.1016/j.heliyon.2024.e28392. eCollection 2024 Apr 15.
102 Yang Y, Flaven-Pouchon J, Cortot J, Ferveur JF, **Moussian B**. Colorimetric surface lipid quantification in *Drosophila*. Arch Insect Biochem Physiol. 2024 Feb;115(2):e22091. doi: 10.1002/arch.22091.
103 Ferveur JF, Cortot J, **Moussian B**, Cobb M, Everaerts C. Replenishment of *Drosophila* Male Pheromone After Mating. J Chem Ecol. 2024 Jan 25. doi: 10.1007/s10886-023-01468-5.
104 Zhang X, Liu M, Cheng A, **Moussian B**, Zhang J, Dong W. Role of CYP311A1 in wing development of *Drosophila melanogaster*. Insect Sci. 2024 Mar 6. doi: 10.1111/1744-7917.13342.
105 Gallois M, Menoret D, Marques-Prieto S, Montigny A, Valenti P, **Moussian B**, Plaza S, Payre F, Chanut-Delalande H. Pri peptides temporally coordinate transcriptional programs during epidermal differentiation. Sci Adv. 2024 Feb 9;10(6):eadg8816. doi: 10.1126/sciadv.adg8816. Epub 2024 Feb 9.
106 Flaven-Pouchon J, Froschauer C, **Moussian B**. Dynamics of cuticle-associated transcript profiles during moulting of the bed bug *Cimex lectularius*. Insect Biochem Mol Biol. 2024 Mar 19;168:104112. doi: 10.1016/j.ibmb.2024.104112.
107 Dong W, Song CY, Liu MQ, Gao YH, Zhao ZW, Zhang XB, **Moussian B**, Zhang JZ. Osiris17 is essential for stable integrin localization and function during insect wing epithelia remodeling. Int J Biol Macromol. 2024 Apr;263(Pt 2):130245. doi: 10.1016/j.ijbiomac.2024.130245. Epub 2024 Feb 16.
108 Zhang X, Wang Y, Wang L, Zhang Y, Xing X, Zhao Z, Dong W, **Moussian B**, Zhang J. Determination of the larval precursor configuration of the *Drosophila* adult hindgut by G-TRACE analysis. Insect Biochem Mol Biol. 2024 Mar 27;168:104114. doi: 10.1016/j.ibmb.2024.104114. Online ahead of print.PMID: 38552809.
109 Lehmann FO, Gorb S, **Moussian B**. Spatio-temporal distribution and genetic background of elastic proteins inside the chitin/chitosan matrix of insects including their functional significance for locomotion. Insect Biochem Mol Biol. 2024 Mar 12;168:104089. doi: 10.1016/j.ibmb.2024.104089.
110 Liu X, Li Y, Gao Y, El Wakil A, **Moussian B**, Zhang J. RNA interference-mediated silencing of coat protein II (COPII) genes affects the gut homeostasis and cuticle development in *Locusta migratoria*. Int J Biol Macromol. 2024 Mar 26;266(Pt2):131137. doi: 10.1016/j.ijbiomac.2024.131137.
111 Liu X, Gao Y, Li Y, El Wakil A, **Moussian B**, Zhang J. Syntaxin5 is essential for survival by ensuring midgut epithelial homeostsis and regulating feeding in *Locusta migratoria*. Pestic Biochem Physiol. 2024 Jun;202:105934. doi: 10.1016/j.pestbp.2024.105934. Epub 2024 Apr 30.

Review articles

112 **Moussian B** & Roth S. Dorsoventral axis formation in the *Drosophila* embryo – Shaping and Transducing a Morphogen Gradient. Review. Current Biology. 2005 Nov;15(11):887-899.
113 **Moussian B** & Uv AE. An ancient control of epithelial barrier formation and wound healing. Bioassays. 2005 Oct;27(10):987-90.
114 **Moussian B**. The role of GlcNAc in formation and function of extracellular matrices. Comparative Biochemistry & Physiology, Part B. 2008 Feb;149(2):215-226.
115 Uv A & **Moussian B**. The apical plasma membrane of *Drosophila* embryonic epithelia. European Journal of Cell Biology. 2010 Feb-Mar;89(2-3):208-11.

116 **Moussian B**. Recent advances in understanding mechanisms of insect cuticle differentiation. Insect Biochemistry & Molecular Biology. 2010 May;40(5):363-75.
117 **Moussian B** & Schwarz H. Preservation of plasma membrane ultrastructure in *Drosophila* embryos and larvae prepared by high-pressure freezing and freeze-substitution. Drosophila Information Service. 2010 93:215-219.
118 **Moussian B.** The apical plasma membrane of chitin-synthesizing epithelia. Insect Science. 2013 Apr;20(2):139-46.
119 Çolak A, **Moussian B** & Araújo S**.** *Drosophila* chitinous aECM and its cellular interactions during tracheal development. Developmental Dynamics. 2016 Mar;245(3):259-67.
120 Muthukrishnan S, Arakane Y, Yang Q, Zhang CX, Zhang J, Zhang W & **Moussian B**. Future questions in insect chitin biology: A microreview. Arch Insect Biochem Physiol. 2018
121 Wang Y, **Moussian B**, Schaeffeler E, Schwab M & Nies AT. The fruit fly *Drosophila melanogaster* as an innovative preclinical ADME model for solute carrier membrane transporters with consequences for pharmacology and drug therapy. Drug Discov Today. 2018 Oct;23(10):1746-1760.
122 Wang Y, Gao L & **Moussian B**. *Drosophila*, chitin and insect pest management. Curr Pharm Des. 2020 Jul 20.
123 Wang Y, Ferveur JF & **Moussian B**. Eco-genetics of desiccation resistance in *Drosophila*. Biol Rev Camb Philos Soc. 2021 Mar 22. doi: 10.1111/brv.12709.
124 Gao L, Qiao H, Wei P & **Moussian B**, Wang Y. Xenobiotic responses in insects. Arch Insect Biochem Physiol. 2022 Mar;109(3):e21869. doi: 10.1002/arch.21869.
125 Lehmann FO, Gorb S & **Moussian B**. Spatio-temporal distribution and genetic background of elastic proteins inside the chitin/chitosan matrix of insects including their functional significance for locomotion. Insect Biochem Mol Biol. 2024 May;168:104089. doi: 10.1016/j.ibmb.2024.104089. Epub 2024 Mar 12.

Book chapters

126 Schwarz H & **Moussian B**. Electron-microscopic and genetic dissection of arthropod cuticle differentiation. In "Modern Research and Educational Topics in Microscopy" Vol 3 (Méndez-Vilas A. & Díaz J., eds): Formatex, Badajoz. 2007 Oct:316-325.
127 **Moussian B.** Chapter 5: Biopolymers from Animals. In: Characterization of Polymer Blends. 2013 Wiley-VCH Verlag.
128 **Moussian B.** The Arthropod Cuticle. In: Arthropod Structure and Development: Major Features and Evolutionary Patterns. 2013 Springer Verlag.
129 **Moussian B.** Molecular Model of Skeletal Organization and Differentiation. In: Extracellular Composite Matrices in Arthropods. Editors: Cohen, Ephraim, **Moussian, Bernard** (Eds.). 2016 Springer Verlag.
130 **Moussian B.** Composite Eggshell Matrices: Chorionic Layers and Sub-chorionic Cuticular Envelopes. In: Extracellular Composite Matrices in Arthropods. Editors: Cohen, Ephraim, **Moussian, Bernard** (Eds.). 2016 Springer Verlag.
131 **Moussian B.** Chitin: Structure, Chemistry and Biology. Adv Exp Med Biol. 2019;1142:5-18. doi: 10.1007/978-981-13-7318-3_2.
132 **Moussian B**. & Casadei N. Identification and Functional Characterization of Argonaute (Ago) Proteins in Insect Genomes. Methods Mol Biol. 2022;2360:9-17. doi: 10.1007/978-1-0716-1633-8_2.

Popular science

133 van der Zee M, Armitage S & **Moussian B**. From Tübingen to York: Molecular Biology and Ecology of the Cuticle. Antenna. Special Edition 2014:30-31.
134 **Moussian B**. Objective: Moulting Cars. Antenna. 2015.
135 **Moussian B**. Taking peer review seriously. EMBO Rep. 2016 Apr 7
136 Fabritius HO & **Moussian B**. The arthropod cuticle - A never-ending endeavour. Arthropod Struct Dev. 2017 Jan;46(1):2-3.