**RNDr. Roman Hobza, Ph.D.**

Narozen: 23.8.1976 ve Valticích

**Vzdělání**

2000-2004 Doktorské studium: Přírodovědecká fakulta MU Brno, obor: Genetika

Téma disertační práce:Struktura pohlavních chromozomů rostlin

1998-2000 Přírodovědecká fakulta MU Brno, obor: Molekulární biologie a genetika

Téma diplomové práce: Molekulární analýza meticilin rezistentních kmenů *Staphylococcus aureus*

1994-1998 Biologická fakulta JU České Budějovice

Téma diplomové práce:Studium kinetoplastové DNA trypanozom ptáků

**Praxe**

2000- dosud Oddělení vývojové genetiky rostlin, Biofyzikální ústav AV ČR, Brno

2011- dosud Centrum strukturní a funkční genomiky rostlin, Ústav experimentální botaniky

AVČR, Olomouc

2006 Roční postdoktorandský pobyt na ETH, Institute of Integrative Biology, Curych,

Švýcarsko

2001 UNC, North Carolina, USA

1995-1998 Laboratoř molekulární parazitologie, Parazitologický ústav AV ČR, České

Budějovice

**Pedagogická činnost**

Genetické inženýrství (semestrální kurz přednášek a cvičení, Agronomická fakulta, Mendelova univerzita, Brno)

Evoluční genomika (semestrální kurz přednášek, Přírodovědecká fakulta, MU, Brno; Přírodovědecká fakulta, JU, České Budějovice)

Struktura a evoluce genomů (semestrální kurz přednášek Farmaceutická fakulta, VFU, Brno)

**Výukové materiály:**

Kejnovský E & Hobza R. Evoluční genomika. Elportál, Brno, Masarykova univerzita. ISSN 1802spacer-128X, 2006.

**Školitel ukončených prací:** 7 bakalářských studentů, 3 diplomanti, 4 doktorandi

**Řešené tuzemské granty**

**Hlavní řešitel:**

2016-2018 Origin and evolution of sex chromosomes in the dioecious plant Rumex acetosa (Czech Science Foundation, grant # 16-08698S)

2012-2016 Sex chromosome evolution - chromosome-specific genomics in genus Silene (Czech Science Foundation, grant # P501/12/2220)

2009-2013 Isolation of sex linked genes to study evolution of sex chromosomes in plants (Czech Science Foundation, grant # GA522/09/0083)

2009-2011 Establishment of Silene vulgaris as a model for comparative genomics in genus Silene (The Czech Academy of Sciences Agency, grant # KJB600040901)

2009 -2011 Genus Silene as a model for mating system and adaptation mechanisms evolution - from ecology to plant genomics (The Czech Academy of Sciences Agency, grant # M200040905)

**Účast na mezinárodních projektech** (spoluřešitel)

2000-2002 Evolution of Plant Sex Chromosomes, National Science Foundation (in collaboration with Dr. Sarah Grant, University of North Carolina)

2007-dosud Evolution on a plant X chromosome, ETH Zurich Research Commission (in collaboration with Prof. Alex Widmer)

**Ocenění vědeckou komunitou**

2004 cena Biofyzikálního ústavu pro nejlepší PhD studenty

2004 nominace mezi pět finalistů pro cenu doktorandů “Česká hlava”

2008 Prémie Otto Wichterleho

**Vyžádané přednášky**

# 2016 21st International Chromosome Conference, Foz do Iguazu, Brazil

# 2016 Plant biology Europe EPSO/FESPB Congress, Praha, ČR

# 2014 International Chromosome Conference, Canterbury, UK

2013 Conference of Experimental Plant Biology, Košice, Slovakia

2011 Plant Genome Evolution, Amsterdam, The Netherlands

2010 12. Konference experimentální biologie rostlin, Praha, ČR

2008 Silene: from populations to genes, Ascona, Switzerland

2007 Dny fyziologie rostlin, Olomouc, ČR

2006 Institute of Integrative Biology, ETH Zurich, Switzerland

2005 Plant and Animal Genomes (PAG) XIIIth Conference, San Diego, USA

2005 Institute of Botany, University of Vienna, Austria

2003 Metodické dny experimentální biologie rostlin, Devět Skal, ČR

**Kapitoly v knihách**

1. “Plant Genome – Biodiversity and Evolution”, Sharma AK and Sharma A eds, Science Publishers, New Hampshire, USA (2007): Zluvova J, Janousek B, **Hobza R**, Mracek J, Widmer A, Vyskot B – Genus Silene (Caryophyllaceae): Evolutionary Diversification and Sex Chromosome Formation, volume 1, part E, chapter 8, pp. 173-225.

2. ”Floriculture, Ornamental and Plant Biotechnology: Advances and Topical Issues” (1st Edition), Teixeira da Silva JA ed, Global Science Books, London, UK (2006): **Hobza R**, Vyskot B: Chapter 25 - Sex Chromosomes in Plants, pp. 224-235

**Vybrané publikace od roku 2003**

**počet citací podle WoS = 1001 (H-index 20)**

Rodriguez JL, Hobza R, Vyskot B (2017) Epigenetic control of reproductive development. *Plant Systematics and Evolution. In press*.

Cegan R, Hudzieczek V, Hobza R (2017) [*De novo* transcriptome assembly of heavy metal tolerant *Silene dioica*.](https://www.ncbi.nlm.nih.gov/pubmed/28180085) *Genom Data*. 11:118-119.

Mahelka V, Krak K, Kopecký D, Fehrer J, Šafář J, Bartoš J, Hobza R, Blavet N, Blattner FR (2017) [Multiple horizontal transfers of nuclear ribosomal genes between phylogenetically distinct grass lineages.](https://www.ncbi.nlm.nih.gov/pubmed/28137844) *Proc Natl Acad Sci U S A*. 114:1726-1731.

Puterova J, Razumova O, Martinek T, Alexandrov O, Divashuk M, Kubat Z, Hobza R, Karlov G, Kejnovsky E (2017) [Satellite DNA and Transposable Elements in Seabuckthorn (Hippophae rhamnoides), a Dioecious Plant with Small Y and Large X Chromosomes.](https://www.ncbi.nlm.nih.gov/pubmed/28057732) *Genome Biology and Evolution*. doi: 10.1093/gbe/evw303. *In press*.

Hobza R, Kubat Z, Cegan R, Jesionek W, Vyskot B, Kejnovsky E (2015) [Impact of repetitive DNA on sex chromosome evolution in plants.](http://www.ncbi.nlm.nih.gov/pubmed/26474787) *Chromosome Research* 23: 561-70.

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Vyskot B, Hobza R (2015) [The genomics of plant sex chromosomes.](http://www.ncbi.nlm.nih.gov/pubmed/26025526) *Plant Science* 236:126-35.

Michalovova M, Kubát Z, Hobza R, Vyskot B, Kejnovsky E (2015) Fully automated pipeline for detection of sex linked genes using RNA-Seq data. *BMC Bioinformatics* 16:78.

Soukupova M, Nevrtalova E, Čížková J, Vogel I, Cegan R, Hobza R, Vyskot B (2014) The X-chromosome is necessary for somatic development in the dioecious *Silene latifolia*: cytogenetic and molecular evidence and sequencing of a haploid genome. *Cytogenetic and Genome Research* 143: 96-103.

Baloun J, Nevrtalova E, Kovacova V, Hudzieczek V, Cegan R, Vyskot B, Hobza R (2014) [Characterization of the HMA7 gene and transcriptomic analysis of candidate genes for copper tolerance in two *Silene vulgaris* ecotypes.](http://www.ncbi.nlm.nih.gov/pubmed/24973591) *Journal of Plant Physiology* 171:1188-96.

Kralova T, Cegan R, Kubat Z, Vrana J, Vyskot B, Vogel I, Kejnovsky E, Hobza R (2014) Identification of a novel retrotransposon with sex chromosome specific distribution in *Silene latifolia. Cytogenetic and Genome Research* 143: 87-95.

Nevrtalova E, Baloun J, Hudzieczek V, Cegan R, Vyskot B, Dolezel J, Safar J, Milde D, Hobza R (2014) [Expression response of duplicated metallothionein 3 gene to copper stress in Silene vulgaris ecotypes.](http://www.ncbi.nlm.nih.gov/pubmed/24748066) *Protoplasma* 251:1427-39.

Kubat Z, Zluvova J, Vogel I, Kovacova V, Cermak T, Cegan R, Hobza R, Vyskot B, Kejnovsky E (2014) Absence of retrotransposon on plant Y chromosome caused by sRNA mediated silencing. *New Phytologist* 202: 662-67.

Steflova P, Hobza R, Vyskot B, Kejnovsky E (2014) Strong accumulation of chloroplast DNA in the Y chromosomes of *Rumex acetosa* and *Silene latifolia*. *Cytogenetic and Genome Research* 142:59-65.

Steflova P, Tokan V, Vogel I, Lexa M, Macas J, Novak P, Hobza R, Vyskot B, Kejnovsky E (2013) Contrasting patterns of transposable element and satellite distribution on sex chromosomes (XY1Y2) in the dioecious plant *Rumex acetosa.*  Genome Biology and Evolution 5: 769-782

Kejnovsky E, Michalovova M, Steflova P, Kejnovska I, Manzano S, Hobza R, Kubat Z, Kovarik J, Jamilena M, Vyskot B (2013) Expansion of microsatellites on evolutionary young Y chromosome. *PLoS One* 8(1): e45519.

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Cegan R, VyskotB, KejnovskyE, KubatZ, BlavetH, ŠafářJ, DoleželJ, BlavetN, HobzaR (2012) Genomic diversity in two related plant species with and without sex chromosomes - *Silene latifolia* and *S. vulgaris. PLOS One*. 7: e31898.

Neumann P, Navrátilová A, Koblížková A, Kejnovský E, Hřibová E, Hobza R, Widmer A, Doležel J, Macas J. (2011) [Plant centromeric retrotransposons: a structural and cytogenetic perspective.](http://www.ncbi.nlm.nih.gov/pubmed/21371312) *Mobile DNA*. 2011 2:4.

Cegan R, Marais GA, Kubekova H, Blavet N, Widmer A, Vyskot B, Dolezel J, Safar J, Hobza R (2010) [Structure and evolution of *Apetala3*, a sex-linked gene in *Silene latifolia*.](http://www.ncbi.nlm.nih.gov/pubmed/20718967) *BMC Plant Biology* 10: 180.

Kejnovsky E, Hobza R, Kubat Z, Cermak T, Vyskot B (2009) The role of repetitive DNA in structure and evolution of sex chromosomes in plants. *Heredity* 102: 533-541.

Hobza R, Widmer A (2008) Efficient molecular sexing in dioecious *Silene latifolia* and *S. dioica* and paternity analysis in F1 hybrids. *Molecular Ecology Resources* 8: 1274–1276*.*

Cermak T, Kubat Z, Hobza R, Koblizkova A, Widmer A, Macas J, Vyskot B, Kejnovsky E (2008) Survey of repetitive sequences in Silene latifolia with respect to their distribution on sex chromosomes. *Chromosome Research* 16: 961-976.

Mrackova M, Nicolas M, Hobza R, Negrutiu I, Monéger F, Widmer A, Vyskot B, Janousek B(2008) Independent origin of sex chromosomes in two species of the genus *Silene*. *Genetics* 179: 1129-1133.

Kubat Z, Hobza R, Vyskot B, Kejnovsky E (2008) Microsatellite accumulation on the Y chromosome in *Silene latifolia. Genome* 51:350-356.

Marais G, Nicolas M , Bergero R, Chambrier P, Kejnovsky E, Monéger F, Hobza R, Widmer A, Charlesworth D (2008) Evidence for degeneration of the Y chromosome in the dioecious plant *Silene latifolia. Current Biology* 18: 545-549.

Hobza R, Kejnovsky E, Vyskot B, Widmer A (2007) The role of chromosomal rearrangements in the evolution of Silene latifolia sex chromosomes*. Molecular Genetics and Genomics* 278: 633-638.

Yu Q, Shaobin H, HobzaR, FeltusFA, WangX et al. (2007) Chromosomal location and gene paucity of the male specific region on papaya Y chromosome. *Molecular Genetics and Genomics* 278: 177-185*.*

Kejnovsky E, Hobza R, Kubat Z, Widmer A, Marais GA, Vyskot B (2007) High intrachromosomal similarity of retrotransposon long terminal repeats: Evidence for homogenization by gene conversion on plant sex chromosomes? *Gene* 390: 92-97*.*

Kejnovsky E, Kubat Z, Hobza R, Lengerova M, Sato I, TabataS, FukuiK, MatsunagaS, VyskotB (2006) Accumulation of chloroplast DNA sequences on the Y chromosome of *Silene latifolia. Genetica* 128: 167-175.

Kejnovsky E, Kubat Z, Macas J, Hobza R, Mracek J, Vyskot B (2006) Retand: A novel family of gypsy-like retrotransposons harboring an amplified tandem repeat. *Molecular Genetics and Genomics* 276: 254-263*.*

Hobza R, Hrusakova P, Safar J, Bartos J, Janousek B, Zluvova J, Michu E, Dolezel J, Vyskot B (2006) MK17, a specific marker closely linked to the gynoecium suppression region on the Y chromosome in Silene latifolia. *Theoretical and Applied Genetics* 113: 280-287*.*

Hobza R, Lengerova M, Svoboda J, Kubekova H, Kejnovsky E, Vyskot B (2006) An accumulation of tandem DNA repeats on the Y chromosome in Silene latifolia during early stages of sex chromosome evolution. *Chromosoma* 115: 376-382*.*

Zluvova J, Lengerova M, Markova M, Hobza R, Nicolas M, Vyskot B, Charlesworth D, Negrutiu I, Janousek B (2005) The inter-specific hybrid *Silene latifolia x S. viscosa* reveals early events of sex chromosome evolution. *Evolution and Development* 7: 327-336.

Vyskot B, Hobza R (2004) Gender in plants: sex chromosomes are emerging from the fog. *Trends in Genetics* 20: 432-438.

Lengerova M, Kejnovsky E, Hobza R, Macas J, Grant SR, Vyskot B (2004) Multicolor FISH mapping of the dioecious model plant, *Silene latifolia. Theoretical and Applied Genetics* 108: 1193-1199.

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Moore RC, Kozyreva O, Lebel-Hardenack S, Siroky J, Hobza R, Laporte V, Charlesworth D, Vyskot B, Grant SR (2003) Genetic and functional analysis of *DD44*, a sex-linked gene from the dioecious plant *Silene latifolia*, provides clues to early events in sex chromosome evolution. *Genetics* 163: 321-334.