europass

Tudor Constantin Badea

EXPERIENŢA PROFESIONALĂ

01/09/2021 – ÎN CURS – Brasov, România
CERCETĂTOR ŞTIINŢIFIC ÎN DOMENIUL BIOMEDICINEI – UNIVERSITATEA TRANSILVANIA / ICDT / FACULTATEA DE MEDICINA

Conduc un grup de cercetatori care studiaza dezvoltarea, functia si modificarile patologice ale celulelor retinale ganglionare in linii de soareci modificati genetic.

26/08/2010 – 15/08/2021 – Bethesda, Maryland 20892, Statele Unite
INVESTIGATOR – NATIONAL EYE INSTITUTE / NIH

Condus un grup de cercetatori care studiaza dezvoltarea, functia si modificarile patologice ale celulelor retinale ganglionare in linii de soareci modificati genetic.

29/06/2004 – 30/08/2010 – Baltimore, Maryland, Statele Unite
CERCETATOR POSTDOCTORAL – HOWARD HUGHES MEDICAL INSTITUTE / JOHNS HOPKINS UNIVERSITY SCHOOL OF MEDICINE

Studiat dezvoltarea si functia celulelor retinale ganglionare in soareci cu mutatii in factori de transcriptie Pou4f/Brn3

13/03/1995 – 29/12/1997 – Baltimore, Maryland, Statele Unite
CERCETATOR IN PATOLOGIE – DEPARTAMENTUL PATOLOGIE, UNIVERSITATEA MARYLAND, DIN BALTIMORE

Studiat reactiile celulelor somatice la atacul prin canale de complement in boli autoimune si inflamatorii.

07/03/1995 – 14/01/2001 – Cluj-Napoca, România
PREPARATOR UNIVERSITAR – DISCIPLINA DE IMUNOPATOLOGIE, UNIVERSITATEA DE MEDICINA SI FARMACIE, "IULIU HATIEGANU"

Tinut cursuri de imunologie pentru studenti UMF.

EDUCAŢIE ŞI FORMARE PROFESIONALĂ

10/06/1999 – 25/06/2004 – 725 N. Wolfe Street, Baltimore, Maryland, Statele Unite
PHD IN BIOCHIMIE, BIOLOGIE CELULARA SI MOLECULARA – Johns Hopkins University, School of Medicine

https://www.hopkinsmedicine.org/som/

29/12/1997 – 12/06/1999 – Department of Biological Sciences, 1212 Amsterdam Avenue, New York, New York, Statele Unite
MA IN STIINTE BIOLOGICE – Columbia University in the CIty of New York

31/08/1988 – 31/08/1994 – Str Babeş, Nr. 8, Cluj-Napoca, Cluj, România
MEDICAL DOCTOR – Universitatea de Medicina si farmacie "Iuliu Hatieganu", Facultatea de Medicina Generala

http://www.umfcluj.ro

COMPETENŢE LINGVISTICE

Limbă(i) maternă(e): **ROMÂNĂ**

Altă limbă (Alte limbi):

	COMPREHENSIUNE		VORBIT		SCRIS
	Comprehensiune orală	Citit	Exprimare scrisă	Conversaţie	
GERMANA	C2	C2	C2	C2	C2
ENGLEZA	C2	C2	C2	C2	C2
FRANCEZA	C2	C2	C1	C1	C1
ITALIANA	B1	B2	A2	A2	A2
SPANIOLA	B1	B1	A2	A2	A2

Niveluri: A1 şi A2 Utilizator de bază B1 şi B2 Utilizator independent C1 şi C2 Utilizator experimentat

COMPETENŢE DIGITALE

Competenţele mele digitale

MATLAB - nivel: intermediar | Python - Nivel Mediu | sisteme de operare (Windows linux macOS) | Microsoft Office, Open Office, Libre Office | Adobe Photoshop, Illustrator, Gimp, Inkscape | FIJI (Image J)

PROIECTE

01/10/2010 – 15/08/2021
RETINAL CIRCUIT DEVELOPMENT & GENETICS

https://grantome.com/grant/NIH/ZIA-EY000504-01
1ZIAEY000504-01 to 1ZIAEY000504-10
a) Development of Brn3a dependent RGC types. This year we have focused on several downstream targets of the transcription factor Brn3a, and have performed a more in depth characterization of their cellular and subcellular localization, and generated and/or employed combinatorial genetics to characterize their expression and function in RGC subtypes. In collaboration with Chai-An Mao at UT Health Science Center, we have defined the genetic interactions between Brn3a and Tbr1 in the development of specific RGC subtypes. Taking advantage of our previously published work on the partial expression overlap between Brn3a and the neurotrophin receptor Ret, we have uncovered a genetic interaction between the Neurotrophin receptor and the transcription factor, that results in a competitive mechanism between distinct RGC types during development. Manuscript is in preparation. In addition we are generating genetic tools for two further novel or recently described RGC markers that appear to be regulated by Brn3a. b) We have nearly completed our characterization of our novel Dre-dependent Brn3c-Cre conditional knock-out (manuscript in preparation) and are using our Brn3 genetic reporters to characterize further RGC subtypes, in collaboration with expert physiology and circuit groups. c) We have completed our survey of Copine expression in retina cell types, and find a high degree of expression overlap between Copines 5, 6 and 9 in Amacrines and RGCs, while Copine 4 seems to be more selective for RGCs. We are addressing the

biochemical and cell biological function of these genes using yeast two hybrid, pull-down mass spectrometry and gain and loss of function paradigms in vivo and in vitro (One paper published, one in preparation). d) We have implemented a newly develop spike sorting algorithm, in collaboration with computational biologists, and have carried out a large scale survey of RGC defects in Brn3b KO retinas (manuscript in preparation). e) We have completed an in depth analysis of visually evoked defense responses in global or retina specific Brn3b KO mice, and find suprprisngly specific defects in these animals (Manuscript is under review). f) We have followed up our collaboration on RGC-32 and generated a RGC-32 conditional mouse that will allow us to tease apart the cellular role of this cell cycle regulator in tissue remodeling, and experimental models of neuronal inflammatory diseases.

02/06/2022 – 31/12/2024

Dezvoltarea Si Functia Acuitatii Vizuale Centrale

https://uefiscdi-direct.ro/pce2021-public
Scopul nostru este sa înţelegem dezvoltarea, funcţia si tulburările patologice ale văzului central de înalta acuitate. La om, acuitatea vizuala maxima este localizata in fovee, o structura specializata a retinei, in care informaţia vizuala este transmisă punct-cu-punct de la fotoreceptor prin o celula bipolara la celula ganglionara retiniana (RGC). Progresul modest făcut in înţelegerea foveei si tratamentul bolilor asociate este datorat absentei unui model experimental animal accesibil genetic. Noi am descoperit o arie retiniana de mare rezoluţie (Aria Centralis, ArCe) la şoarece, si propunem sa ii studiem funcţia si dezvoltarea, pentru a o stabili ca un model patogenetic si terapeutic pentru văzul central si RGC cu acuitate vizuala crescuta. Vom folosi linii murine modificate genetic produse de noi pentru a identifica celulele RGC ale ArCe, descoperi proiecţiile lor in creier si participarea in vederea binoculara, si a studia etapele si mecanismele lor de dezvoltare embrionara. Vom supune şoareci cu defecte genetice in ArCe la teste de comportament vizual, pentru a înţelege implicarea ArCe in funcţia vizuala. Rezultatele obţinute vor stabili un model animal pentru studiul mecanismelor patogenetice si abordărilor terapeutice ale defectelor vizuale centrale. De asemenea, descoperirile noastre vor facilita metodele moderne de reparare a retinei bazate pe terapia cu celule stem sau reprogramare celulara, prin dezvăluirea etapelor si mecanismelor moleculare de dezvoltare.

COMPETENŢE DE MANAGEMENT ŞI CONDUCERE

Group Leader

Investigator principal conducand un grup de 5-10 persoane in activitati de cercetare biomedicala

PROFILE BIBLIOGRAFICE ONLINE

https://scholar.google.com/citations?user=enO60_gAAAAJ&hl=en

https://www.scopus.com/authid/detail.uri?authorId=7004147755

https://publons.com/wos-op/researcher/1366808/tudor-constantin-badea/

https://www.brainmap.ro/tudor-constantin-badea