

CURRICULUM VITAE

Avihu Klar

1. PERSONAL INFORMATION

Date of Birth: 12.11.1957
Country of Birth: Israel
Work Tel: 02-6757133
E-Mail: aviuhu@mail.huji.ac.il



2. HIGHER EDUCATION

1979-1982 BsC at the Tel Aviv University, Life Sciences faculty.
1982-1985 MsC at the Weizmann Institute, department of chemical immunology, MsC under the supervision of Prof. Eli Canaani.
1985-1989 PhD at the Hebrew University, department of Biochemistry of the Cell, under the supervision of Howard Cedar & Prof. Prof. Menashe Marcus.
1989-1993 Post-doctoral fellowship at Columbia University, Centre for Neurobiology and Behavior. Host: Prof. Tom Jessell.

3. APPOINTMENTS AT THE HEBREW UNIVERSITY

1994- 2002 Lecturer at the Hebrew university, faculty of Medicine.
2002- 2010 Senior lecturer at the Hebrew university, faculty of Medicine.
2011 – 2020 Associate Professor at the Hebrew university, faculty of Medicine.
2020 Professor at the Hebrew university, faculty of Medicine.

4. PUBLICATIONS

Haimson, B., Meir, O., Sudakevitz-Merzbach, R., Elberg, G., Friedrich, S., Lovell, P.V., Paixao, S., Klein, R., Mello, C.V., and Klar, A. (2021). Natural loss of function of ephrin-B3 shapes spinal flight circuitry in birds. *Sci Adv* 7.
Haimson, B., Hadas, Y., Bernat, N., Kania, A., Daley, M.A., Cinnamon, Y., Lev-Tov, A., and Klar, A. (2021). Spinal lumbar dl2 interneurons contribute to stability of bipedal stepping. *Elife* 10.
Wang, X., Kohl, A., Yu, X., Zorio, D.A.R., Klar, A., Sela-Donenfeld, D., and Wang, Y. (2020). Temporal-specific roles of fragile X mental retardation protein in the development of the hindbrain auditory circuit. *Development* 147.

- Lahaie, S., Morales, D., Bagci, H., Hamoud, N., Castonguay, C.E., Kazan, J.M., Desrochers, G., Klar, A., Gingras, A.C., Pause, A., Cote, J.F., and Kania, A. (2019). The endosomal sorting adaptor HD-PTP is required for ephrin-B:EphB signalling in cellular collapse and spinal motor axon guidance. *Sci Rep* 9, 11945.
- Cohen, O., Vald, L., Yamagata, M., Sanes, J.R., and Klar, A. (2017). Roles of DSCAM in axonal decussation and fasciculation of chick spinal interneurons. *Int J Dev Biol* 61, 235-244.
- Kohl, A., Marquardt, T., Klar, A., and Sela-Donenfeld, D. (2015). Control of axon guidance and neurotransmitter phenotype of dB1 hindbrain interneurons by Lim-HD code. *J Neurosci* 35, 2596-2611.
- Mansour, A., Khazanov-Zisman, S., Y., N., Klar, A., and Ben-Arie, N. (2014). Noto3 plays an integral role in dorsoventral patterning of the spinal cord by segregating floor plate/p3 fates via Nkx2.2 suppression and Foxa2 maintenance. *Development*.
- Hadas, Y., Etlin, A., Falk, H., Avraham, O., Kobiler, O., Panet, A., Lev-Tov, A., and Klar, A. (2014). A 'tool box' for deciphering neuronal circuits in the developing chick spinal cord. *Nucleic acids research* 42, e148.
- Nitzan, E., Krispin, S., Pfaltzgraff, E.R., Klar, A., Labosky, P.A., and Kalcheim, C. (2013). A dynamic code of dorsal neural tube genes regulates the segregation between neurogenic and melanogenic neural crest cells. *Development (Cambridge, England)* 140, 2269-2279.
- Kohl, A., Hadas, Y., Klar, A., and Sela-Donenfeld, D. (2013). Electroporation of the hindbrain to trace axonal trajectories and synaptic targets in the chick embryo. *Journal of visualized experiments : JoVE*.
- Hadas, Y., Nitzan, N., Furley, A.J.W., Kozlov, S.V., and Klar, A. (2013). Distinct Cis Regulatory Elements Govern the Expression of TAG1 in Embryonic Sensory Ganglia and Spinal Cord. *PLoS One* 8, e57960.
- Escalante, A., Murillo, B., Morenilla-Palao, C., Klar, A., and Herrera, E. (2013). Zic2-dependent axon midline avoidance controls the formation of major ipsilateral tracts in the CNS. *Neuron* 18, 1392-1406.
- Kohl, A., Hadas, Y., Klar, A., and Sela-Donenfeld, D. (2012). Axonal patterns and targets of dA1 interneurons in the chick hindbrain *J Neuroscience* 32 5757-5771.
- Peterziel, H., Sackmann, T., Strelau, J., Kuhn, P.H., Lichtenthaler, S.F., Marom, K., Klar, A., and Unsicker, K. (2011). F-spondin regulates neuronal survival through activation of disabled-1 in the chicken ciliary ganglion. *Mol Cell Neurosci* 46, 483-497.
- Mansour, A.A., Nissim-Eliraz, E., Zisman, S., Golan-Lev, T., Schatz, O., Klar, A., and Ben-Arie, N. (2011). Foxa2 regulates the expression of Noto3 in the floor plate by a novel evolutionarily conserved promoter. *Mol Cell Neurosci* 46, 187-199.
- Palmesino, E., Rousso, D.L., Kao, T.J., Klar, A., Laufer, E., Uemura, O., Okamoto, H., Novitsch, B.G., and Kania, A. (2010). Foxp1 and Ihx1 coordinate motor neuron migration with axon trajectory choice by gating Reelin signalling. *PLoS Biol* 8, e1000446.
- Avraham, O., Zisman, S., Hadas, Y., Vald, L., and Klar, A. (2010). Deciphering axonal pathways of genetically defined groups of neurons in the chick neural tube utilizing in ovo electroporation. *J Vis Exp*.
- Avraham, O., Hadas, Y., Vald, L., Hong, S., Song, M.R., and Klar, A. (2010). Motor and Dorsal Root Ganglion Axons Serve as Choice Points for the Ipsilateral Turning of dI3 Axons. *J Neurosci* 30, 15546-15557.
- Avraham, O., Hadas, Y., Vald, L., Zisman, S., Schejter, A., Visel, A., and Klar, A. (2009). Transcriptional control of axonal guidance and sorting in dorsal interneurons by the Lim-HD proteins Lhx9 and Lhx1. *Neural Dev* 4, 21.
- Wilson, S.I., Shafer, B., Lee, K.J., and Dodd, J. (2008). A molecular program for contralateral trajectory: Rlg-1 control by LIM homeodomain transcription factors. *Neuron* 59, 413-424.
- Meyuhas, R., Pikarsky, E., Tavor, E., Klar, A., Abramovitch, R., Hochman, J., Lago, T.G., and Honigman, A. (2008). A Key role for cyclic AMP-responsive element binding protein in hypoxia-mediated activation of the angiogenesis factor CCN1 (CYR61) in Tumor cells. *Mol Cancer Res* 6, 1397-1409.

- Ly, A., Nikolaev, A., Suresh, G., Zheng, Y., Tessier-Lavigne, M., and Stein, E. (2008). DSCAM is a netrin receptor that collaborates with DCC in mediating turning responses to netrin-1. *Cell* 133, 1241-1254.
- Zisman, S., Marom, K., Avraham, O., Rinsky-Halivni, L., Gai, U., Kligun, G., Tzarfaty-Majar, V., Suzuki, T., and Klar, A. (2007). Proteolysis and membrane capture of F-spondin generates combinatorial guidance cues from a single molecule. *J Cell Biol* 178, 1237-1249.
- Schubert, D., Klar, A., Park, M., Dargusch, R., and Fischer, W.H. (2006). F-spondin promotes nerve precursor differentiation. *J Neurochem* 96, 444-453.
- Riskin, D.K., and Hermanson, J.W. (2005). Biomechanics: independent evolution of running in vampire bats. *Nature* 434, 292.
- Feinstein, Y., and Klar, A. (2004). The neuronal class 2 TSR proteins F-spondin and Mindin: a small family with divergent biological activities. *The Inter J of Bioch & Cell Biol* 36, 975-980.
- Mirski, R., Reichert, F., Klar, A., and Rotshenker, S. (2003). Granulocyte macrophage colony stimulating factor (GM-CSF) activity is regulated by a GM-CSF binding molecule in Wallerian degeneration following injury to peripheral nerve axons. *J Neuroimmunol* 140, 88-96.
- Jin, Z., Zhang, J., Klar, A., Chedotal, A., Rao, Y., Cepko, C.L., and Bao, Z.Z. (2003). *Irx4*-mediated regulation of *Slit1* expression contributes to the definition of early axonal paths inside the retina. *Development* 130, 1037-1048.
- Tzarfaty-Majar, V., López-Aleman, R., Feinstein, Y., Gombau, L., Goldshmidt, O., Soriano, E., Muñoz-Cánoves, P., and Klar, A. (2001). Plasmin-mediated release of the guidance molecule F-spondin from the extracellular matrix. *J Biol Chem* 276, 28233-28241.
- Tzarfaty-Majar, V., Burstyn-Cohen, T., and Klar, A. (2001). F-spondin is a contact-repellent molecule for embryonic motor neurons. *Proc Natl Acad Sci USA* 98, 4722-4727.
- Feinstein, Y., Borrell, V., Garcia, C., Burstyn-Cohen, T., Tzarfaty, V., Frumkin, A., Nose, A., Okamoto, H., Higashijima, S.-i., Soriano, E., and Klar, A. (1999). F-spondin and mindin: two structurally and functionally related genes expressed in the hippocampus that promote outgrowth of embryonic hippocampal neurons. *Development* 126, 3637-3648.
- Debby-Brafman, A., Burstyn-Cohen, T., Klar, A., and Kalcheim, C. (1999). F-spondin is expressed in somitic regions avoided by neural crest cells and inhibits neural crest migration in the avian embryo. *Neuron* 22, 475-488.
- Burstyn-Cohen, T., Tzarfaty, V., Frumkin, A., Feinstein, Y., Stoeckli, E., and Klar, A. (1999). F-spondin is required for accurate pathfinding of commissural axons at the floor plate. *Neuron* 23, 233-246.
- Burstyn-Cohen, T., Frumkin, A., Xu, Y.T., Scherer, S.S., and Klar, A. (1998). Accumulation of F-spondin in injured peripheral nerve promotes the outgrowth of sensory axons. *J Neurosci* 18(21), 8875-8885.
- Klar, A. (1996). Control of floor plate identity and function in the embryonic spinal cord. *Mammalian Development*, harwood academic publishers, 199-216.
- Ben-Shushan, E., Pikarsky, E., Klar, A., and Bergman, Y. (1993). Extinction of Oct-3/4 gene expression in embryonal carcinoma x fibroblast somatic cell hybrids is accompanied by changes in the methylation status, chromatin structure, and transcriptional activity of the Oct-3/4 upstream region. *Mol Cell Biol* 13(2), 891-901.
- Altaba, A.R.I., Cox, C., Jessell, T.M., and Klar, A. (1993). Ectopic neural expression of a floor plate marker in frog embryo injected with the midline transcription factor *Pintallavis*. *Proc Natl Acad Sci USA* 90, 8268-8272.
- Klar, A., Jessell, T.M., and Ruiz i Altaba, A. (1992). Control of floor plate identity and function in the embryonic nervous system. *Cold Spring Harb Symp Quant Biol* 57, 473-482.
- Klar, A., Baldassare, M., and Jessell, T.M. (1992). F-spondin: a gene expressed at high levels in the floor plate encodes a secreted protein that promotes neural cell adhesion and neurite extension. *Cell* 69, 95-110.
- Handeli, S., Klar, A., Meuth, M., and Cedar, H. (1989). Mapping replication units in animal cells. *Cell* 57, 909-920.

Canaani, E., Dreazen, O., Klar, A., Rechavi, G., Ram, D., Cohen, J.B., and Givol, D. (1983). Activation of the c-mos oncogene in a mouse plasmacytoma by insertion of an endogenous intracisternal A-particle genome. *Proc Natl Acad Sci U S A* *80*, 7118-7122.