

# Ana Martin-Villalba

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## Current Research

Around one milliard cells die daily in our body. This programmed cell death, apoptosis, is part of the natural tissue renewal and a way to prevent the development of cancer. It can however have undesired consequences: Following stroke or injury to the spinal cord non-injured cells near the site of injury are at risk of undergoing apoptosis – leading to neurological deficits like para-/hemiplegia.

We study the cellular and molecular mechanism orchestrating apoptosis in the CNS, during development and disease, including brain tumors, stroke and spinal cord injury.

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Home page Molecular Neurobiology

[www.dkfz.de/en/molekulare-neurobiologie](http://www.dkfz.de/en/molekulare-neurobiologie)

## Future Projects and Goals

In our lab we aim at influencing apoptosis-inducing factors to:

Fight brain tumors by targeting tumor stem cells  
Treat stroke and spinal cord injury  
Recruit endogenous neural stem cells to repair the brain.

## Selected Publications

- Letellier, E. & Martin-Villalba, A. (2007). Spinal cord injuries entering the Fas(t) lane. *Neurosurgery* 60, N6-N7.
- Zuliani, C., et al. (2006). Control of Neuronal Branching by the Death Receptor CD95 (Fas/Apo-1). *Cell Death Differ.* 13:31-40.
- Klussmann, S. and Martin-Villalba, A. Molecular Targets in Spinal Cord Injury. *J.Mol.Med.* 2-8-2005.
- Demjen, D., et al. (2004). Neutralization of CD95 ligand promotes regeneration and functional recovery after spinal cord injury. *Nat.Med.* 10, 389-395.
- Martin-Villalba A, et al. (2001). Synergistical therapeutical effect of anti-CD95Ligand and anti-TNF antibodies in ischemic brain damage. *Cell Death and Differentiation*, 8:679-86
- Jeremias I, Kupatt C, Martin-Villalba A, et al. (2000). Involvement of CD95-L, TRAIL and TNF- $\alpha$  in apoptotic cell death after myocardial infarction. *Circulation* 102: 915-20.