

**PD Dr. RICHARD CARR****1) General information**

Date of birth: 15 January, 1970  
 Gender: Male  
 Address: Heidelberg University  
 Medical Faculty Mannheim  
 Department of Experimental Pain Research  
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 Email: richard.carr@medma.uni-heidelberg.de  
 Position: Group leader – Sensory biophysics  
 Children: Two (\* 2010; \* 2015)  
 Parental leave, if applicable: None

**2) University training and degree**

1992 - 1994 Bachelor of Science, Honours I, Physiology, Monash University, Melbourne, Australia  
 1988 - 1991 Bachelor of Applied Science, Biophysics, Swinburne University, Melbourne, Australia

**3) Advanced academic qualifications**

2010 Habilitation and Venia legendi in Physiology, Ludwig-Maximilian University, Munich, Germany  
 1999 Doctoral dissertation, PhD title: 'Action potential encoding in sensory receptors of skin and muscle'. Supervisor: Prof. Dr. Uwe Proske, Department of Physiology, Monash University, Melbourne, Australia.

**4) Postgraduate professional career**

Since 2011 Group leader, Experimental Pain Research, Medical Faculty Mannheim, Heidelberg University, Mannheim, Germany  
 2007 - 2010 Lecturer, Institute for Physiology, Department of Physiological Genomics, Ludwig-Maximilian University, Munich, Germany  
 2004 - 2007 Postdoctoral fellow with Prof. Dr. Karl Meßlinger, Institute for Physiology, University Erlangen-Nuremberg, Erlangen, Germany  
 2002 - 2004 Alexander von Humboldt Fellow, Institute for Physiology, University Erlangen-Nuremberg, Erlangen, Germany  
 2000 - 2002 Postdoctoral fellow with Prof. Dr. James Brock, Prince of Wales Medical Research Institute, Sydney, Australia

**5) Other**Awards and honours:

2008 Prize for Basic Research, German Pain Society (DGSS)  
 2002 Alexander von Humboldt Fellowship

1994 Graduate scholarship from the Australian Postgraduate Research Council

Panels and coordinating functions:

Since 2021 Reviewing Editor at Frontiers in Translational Medicine

Since 2020 Reviewing Editor at Pain

Since 2020 Faculty member at F1000

**6) Publications:**

**A)**

Liu S, Bonalume V, Gao Q, Chen JTC, Rohr K, Hu J & Carr R. Presynaptic GABA<sub>A</sub> in Nav1.8+ primary afferents is required for the development of punctate but not dynamic mechanocla allodynia following CFA inflammation. **Cells**; 11(15):2390, 2022.

Behrendt M, Solinski HJ, Schmelz M & Carr R. (2022). Bradykinin-induced sensitization of transient receptor potential channel melastatin 3 calcium responses in mouse nociceptive neurons. **Frontiers in Cellular Neuroscience** 16, 843225.

Bonalume V, Caffino L, Castelnovo LF, Faroni A, Liu S, Hu J, Milanese M, Bonanno G, Sohns K, Hoffmann T, De Col R, Schmelz M, Fumagalli F, Magnaghi V & Carr R. Axonal GABA<sub>A</sub> stabilizes excitability in unmyelinated sensory axons secondary to NKCC1 activity. **The Journal of Physiology**; 599, 4065-4084, 2021.

Klein AH, Vyshnevskaya A, Hartke TV, De Col R, Mankowski JL, Turnquist B, Bosmans F, Reeh PW, Schmelz M, Carr RW, Ringkamp M. Sodium Channel Nav1.8 Underlies TTX-Resistant Axonal Action Potential Conduction in Somatosensory C-Fibers of Distal Cutaneous Nerves. **The Journal of Neuroscience**; 37(20):5204-5214, 2017.

Tigerholm J, Petersson ME, Obreja O, Eberhardt E, Namer B, Weidner C, Lampert A, Carr RW, Schmelz M, Fransen E. C-fiber recovery cycle supernormality depends on ion concentration and ion channel permeability. **Biophysical Journal**; 108(5):1057-1071, 2015.

Sittl R, Lampert A, Huth T, Schuy ET, Link AS, Fleckenstein J, Alzheimer C, Grafe P, Carr RW. Anticancer drug oxaliplatin induces acute cooling-aggravated neuropathy via sodium channel subtype Na(V)1.6-resurgent and persistent current. **Proc Natl Acad Sci U S A**; 109(17):6704-6709, 2012.

De Col R, Messlinger K, Carr RW. Repetitive activity slows axonal conduction velocity and concomitantly increases mechanical activation threshold in single axons of the rat cranial dura. **The Journal of Physiology**; 590(4):725-736, 2012.

Carr RW, Pianova S, McKemy DD, Brock JA. Action potential initiation in the peripheral terminals of cold-sensitive neurones innervating the guinea-pig cornea. **The Journal of Physiology**; 587(Pt 6):1249-1264, 2009.

Zimmermann K, Leffler A, Babes A, Cendan CM, Carr RW, Kobayashi J, Nau C, Wood JN, Reeh PW. Sensory neuron sodium channel Nav1.8 is essential for pain at low temperatures. **Nature**; 447(7146):855-858, 2007.

**B)** other publications: -

C) Patents: -