(resident) 1 h daily for a week was used. Bodyweight was measured and blood samples were collected throughout the experiment. Changes in plasma microRNA expression was determined by qPCR.

Results: Rats exposed to social stress showed reduced weight gain compared to controls. Preliminary results suggested that social stress increased the plasma expression of miR-146a-5p, miR-30c-5p and miR-223-3p.

Conclusions: The data showed that social stress gives reduced weight gain and increased expression of several circulating microRNAs. How this affects the development of persistent pain remains to be investigated.

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Characterization of released exosomes from satellite glial cells under normal and inflammatory conditions

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Aims: Satellite glial cells (SGCs) are non-neuronal cells that entirely surround neurons within sensory ganglia. This unique structure allows SGC-neuron interactions. Altered cross-talk following nerve injury or inflammation is thought to contribute to pathogenesis of chronic pain. Release of extracellular vesicles in form of exosomes has been found to play a key role in cell-cell communication. However, release of exosomes from SGCs and their potential role in modulating pain remain unknown. Hence, this study aimed at identifying and characterizing shed exosomes from SGCs under normal and inflammatory conditions.

Methods: Fresh primary cultures of rat trigeminal ganglia (TG) were prepared from adult male Sprague–Dawley rats. Danish Animal Inspectorate approved the study protocol. Primary SGCs were kept in culture up to 21 days and were characterized by morphology and immunohistochemistry. Cultured SGCs were monitored under normal and LPS (50 ng/mL) treatment. Collection of conditioned media was performed over time and exosomes were isolated. Particle size distribution and total protein were determined by NTA and LC–MS/MS, respectively.

Results: SGCs formed small clusters, spread outwards to areas devoid of cells but remained spindle-like in appearance with larger cell bodies. The primary cultures of SGCs were clearly GS positive with a low expression of GFAP. LPS treatment led to higher GFAP expression. Particle size distribution showed that two third of the particles were in the exosomal size range. Upon LPS-stimulation, four proteins (histone H2B, ubiquitin-60S ribosomal, myosin-9, elongation factor 1-alpha) were found exclusively expressed compared to normal treated SGCs.

Conclusions: For the first time it was demonstrated that SGCs shed extracellular vesicles in exosomal size range. Mysoin-9 was identified as a possible novel marker of SGCs activation under inflammatory conditions. This protein plays a role in cell-cell adhesion and possibly contributes to SGC-SGC cross-talk upon inflammation which may consequently influence the excitability of nearby neurons.

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Cell-based platform for studying trigeminal satellite glial cells under normal and inflammatory conditions

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Aims: Satellite glial cells (SGCs) in sensory ganglia contribute to the pathogenesis of chronic pain. *In vitro*, providing enough fresh primary SGCs poses some practical limitations; hence, frozen stocks of primary cells for culture could be an attractive alternative for cell-based studies or drug screening. This study was designed to investigate the morphology and marker expression of frozen and freshly isolated trigeminal SGCs under normal and inflammatory conditions.

Methods: SGCs from trigeminal ganglia of three male Sprague–Dawley rats and three frozen (sub cultured and passaged) batches of stored primary SGCs were cultured. Their morphology was observed by phase microscopy and the phenotype was characterized by immunocytochemistry of glutamine synthetase (GS) and glial fibrillary acidic protein (GFAP). Lipopolysaccharide (LPS) was used to simulate a state of neurogenic inflammation *in vivo*. A pilot test was performed to determine the optimal concentration of LPS to activate SGCs based on GFAP expression. A long-term activation of the SGCs with 50 ng/mL LPS was chosen for further characterization.

Results: The fresh and frozen primary SGCs elicited similar phenotypes based on GS marker expression. However, frozen primary SGCs differed in terms of size and morphology. GFAP was constantly expressed in frozen primary SGCs regardless of LPS stimulation. Activation of primary fresh SGCs with LPS spread the GFAP expression from around the cell body throughout the longer processes and activation was only seen in the LPS treatment.

Conclusions: The phenotypic marker, GS was independent of culture conditions. There was no difference in upregulation of GFAP in thawed SGCs regardless of LPS stimulation. This indicates that freeze-thawing might activate SGCs and therefore frozen and passaged cells cannot be suitable for use in cell-based models for inflammation. Fresh primary cells are therefore optimal for studying SGCs under normal and inflammatory conditions.

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Tramadol in postoperative pain – 1 mg/ml IV gave no pain reduction but more side effects in third molar surgery

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Aims: Does pre-emptive single dose intravenous tramadol produce a safe and effective postoperative analgesia?

Methods: Randomized, placebo controlled, single blinded clinical trial of pre-emptive intravenous tramadol 1 mg/kg in combination with IV midazolam in patients with dental fear. A "Pain diary" evaluates the efficacy. The safety is evaluated perioperative monitoring (SpO_2 and BP).

Results: Pain scored by VAS showed no differences between the groups. It took longer time to first rescue pill in tramadol vs. control group (157 vs. 110 min, $p = 0.049$). Desaturation ($SpO_2 < 90\%$) was more commonly found in tramadol vs. placebo and control