

LABORATORY OF PRECLINICAL STUDIES



ABOUT US

The Animal Research Facility is designed to provide all experiments on animals (mice, rats, hamsters, gerbils, guinea-pigs, rabbits, pigs, sheeps and goats) and works as a support of other teams. In addition, there are established animal models allowing to do contract research and scientific cooperation, especially in regenerative medicine and experimental surgery.

The section for small animals allows housing in conventional conditions and in the barrier. This experimental facilities includes fully equipped laboratory allowing to perform all the »in vivo« experiments, including surgical procedures. The section for the large animals includes clean rooms, in which there are two fully equipped operating theatres and experimental ICU.

MEMBERS

- Pavel Klein, Ph.D., M.Sc. – Research Group Leader
- Ilona Lacinová
- Markéta Navrátilová
- Ivana Ocskaiová

WE OFFER

- Model of healing of cutaneous wounds in non-diabetic and diabetic rats (both DMI and DMII).
- Porcine model of healing of normal cutaneous wounds.
- Porcine model of healing of full-thickness cutaneous wounds experimentally infected with bacterial biofilm.
- Porcine model of osteochondral defect in knee joint.
- Porcine models of fractures of femur.
- In vivo testing of materials for stomatology and maxillofacial surgery.
- In vivo testing of materials for soft tissue augmenations.
- In vivo testing of wide spectrum of implants and prostheses.
- Murine models of experimental infection of Cryptosporidium (both for basic research and evaluation of antiprotozoal drugs).

SELECTED PUBLICATIONS

- Bobula T., Běťák J., Buffa R., Moravcová M., Klein P., Židek O., Chadimová V., Pospíšil R., Velebný V.: Solidstate photocrosslinking of hyaluronan microfibrils, *Carbohydrate Polymers* 2015, 125: 153–60.
- Kučera L., Wiunfurterová R., Dvořáková J., Kučera J., Pravda M., Foglarová M., Švík K., Klein P., Velebný V.: Chondrocyte Cultivation in Hyaluronan-Tyramine Cross-Linked Hydrogel. *International Journal of Polymeric Materials* 2015, 64 (13): 661-74.
- Kučera J., Sojka, M., Pavlík, V., Szuszkiewicz, K., Velebný, V., Klein, P.: Multispecies biofilm in an artificial wound bed - a novel model for in vitro assessment of solid antimicrobial dressings. *Journal of Microbiological Methods* 2014, 103:18-24.
- Klein, P., Kleinová, T., Volek, Z., Šimůnek, J.: Effect of *Cryptosporidium parvum* infection on the absorptive capacity and paracellular permeability of the small intestine in neonatal calves. *Veterinary Parasitology* 2008, 152 (1-2): 53-9.
- Klein, P.: Preventive and therapeutic efficacy of halofuginone-lactate against *Cryptosporidium parvum* in spontaneously infected calves: A centralised, randomised, double-blind, placebo-controlled study. *The Veterinary Journal* 2008, 177(3):429-31.
- Klein, P., Cirioni, O., Giacometti, A., Scalise, G.: In vitro and in vivo activity of aurintricarboxylic acid preparations against *Cryptosporidium parvum*. *Journal of Antimicrobial Chemotherapy* 2008, 62(5):1101-4.
- Widmer, G., Klein, P., Bonilla, R.: Adaptation of *Cryptosporidium* oocysts to different excystation conditions. *Parasitology* 2007, 134:1583-8.
- Klein, P., Moravcová, J., Kleinová, T., Volek, Z., Skřivanová, V.: Assessment of intestinal permeability in preruminant calves by lactulose/mannitol test. *Journal of Animal and Feed Sciences* 2007; 16(1): 43-52.
- Klein, P.: Preparation of the formaurindicarboxylic acid base and its derivations and use. US 8030353 B2
- Bobula, T., Pospíšil, R., Buffa, R., Růžicková, J., Moravcová, M., Klein, P., Velebný, V.: Photoreactive derivative of hyaluronic acid, method of preparation thereof, 3d-crosslinked derivative of hyaluronic acid, method of preparation and use thereof. WO 2014082608 A1.
- Šmejkalová, D., Huerta-Angeles, G., Bobek, M., Hermannová, M., Vištejnová, L., Novotný, J., Příkopová, E., Nešporová, K., Němcová, M., Šlezingerová, K., Kulhánek, J., Čožíková, D., Šógorková, J., Kučera, J., Klein, P., Velebný, V.: C6-c18-acylated derivative of hyaluronic acid, method of preparation thereof, nanomicellar composition on its basis, method of preparation thereof and method of preparation stabilized nanomicellar composition, and use thereof. WO 2014082609 A1.
- Ščudlová, J., Běťák, J., Wolfová, L., Buffa, R., Šlezingerová, K., Klein, P., Matějková, I., Bobek, M., Pitucha, T., Velebný, V., Šuláková, R.: Fibres based on hydrophobized derivatives of hyaluronan, method of their preparation and use, textiles on base thereof and use thereof. WO2014082611 A8.
- Běťák, J., Buffa, R., Němcová, M., Pitucha, T., Kulhánek, J., Matějková, I., Nováková, J., Vištejnová, L., Klein, P., Kubičková, G., Broulíková, M., Felgrová, M., Velebný, V.: Fibres sans fin à base d'hyaluronane sélectivement oxydé en position 6 du groupe n-acétyl-d-glucosamine, leur préparation et utilisation, filés, fibres courtes, fils et tissus constitués de celles-ci et procédé pour la modification de celles-ci. WO 2014082610 A1.

