



Lauren V. Schnabel



Stem Cell Therapies for Musculoskeletal Disorders

Research emphasis:

Dr. Schnabel's main interest is in the development and clinical application of regenerative therapies for the treatment of musculoskeletal disorders with the horse as an animal model. In particular, her laboratory is focused on understanding and manipulating the immunologic and immunomodulatory properties of bone marrow-derived mesenchymal stem cells (MSCs). The goal of the Schnabel laboratory is to generate non-immunogenic allogeneic MSCs, which are imperative for improving the quality and availability of MSC-based therapies. Dr. Schnabel and her laboratory are in a unique position to test MSC immunogenicity using their herd of MHC homozygote horses

Application :

- Stem Cell Immunology
- Equine Model
- Regenerative Medicine
- Clinical ;orthopedic Application

Collaboration potential:

- Large animal models (equine)
- Stem cell immunogenicity/allogeneic use
- Stem cell clinical applications (equine)
- Clinical orthopedic applications (equine)

Selected publications:

Pezzanite LM, Fortier LA, Antczak DF, Cassano JM, Brosnahan MM, Miller D, **Schnabel LV**. Equine allogeneic mesenchymal stromal cells elicit antibody responses in vivo. *Stem Cell Res Ther* 2015; 6(1):54.

Schnabel LV, Abratte CM, Schimenti JC, Felipe MJB, Cassano JM, Southard TL, Cross JA, Fortier LA. Induced pluripotent stem cells (iPSCs) have similar immunogenic and more potent immunomodulatory properties compared to bone marrow-derived stromal cells in vitro. *Regen Med* 2014; 9(5):621-635.

Schnabel LV, Pezzanite LM, Antczak DF, Felipe MJB, Fortier LA. Equine bone marrow-derived mesenchymal stromal cells are heterogeneous in MHC class II expression and capable of inciting an immune response in vitro. *Stem Cell Res Ther* 2014; Jan 24;5(1):13.

Schnabel LV, Fortier LA, McIlwraith CW, Nobert KM. Therapeutic use of stem cells in horses: which type, how, and when? *Vet J* 2013; 197(3): 570-577. *Invited Review*.

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