Leishmaniosis is a neglected tropical disease, an illness that kills up to 30,000 people yearly. Existing drugs have serious drawbacks in terms of safety, resistance, stability, difficulty of administration and cost. Thus, there is a need for new treatments.

Within the framework of an Open Synthesis Network (OSN) between the University of Geneva and the Drugs for Neglected Diseases initiative (DNDi), we aimed at synthetizing new aminopyrazole analogues for early stage discovery for new treatments for leishmaniosis. The two key reactions are reductive amination, during which a first structural diversification occurs and the last coupling by amidation that led to the final expected compounds. Compounds biological activity has been assessed on Leishmania infantum and cytotoxicity on human and murine fibroblasts. The synthesis, SAR and biological activity will be discussed.

The open source nature of this project aimed at deepening the learning of laboratory work in the context of students R&D practical work. The collaborative spirit of the students has led to the successful synthesis output and the development of a scientific rigor of work, which includes the preparation and the follow-up plans of experiment.