Because of the anabolic potency of b2-agonists, the World Antidoping Agency prohibited their systemic use and added them to their doping list. This class of drug is acknowledged to induce significant changes in body composition. Chronic administration of specific beta-2 adrenergic agonists, especially clenbuterol and salmeterol, has been shown to increase skeletal muscle strength and size in several species following relatively short periods of administration. This anabolic effect on skeletal muscle was, however, only found with salbutamol after intravenous administration with implanted minipumps in model animals, possibly because of its short half-life of time of elimination. Regardless, the potential mechanism(s) by which beta-2 agonists mediates anabolic effects remain unclear. The present study therefore investigates potential androgenic activity of salbutamol in vitro and shows anabolic effects of salbutamol through androgen receptor agonistic activity. Further studies will be necessary to determine whether this mechanism could occur in vivo after salbutamol administration at considerably lower levels.

Katia Collomp
UFR STAPS, France; katia.collomp@univ-orleans.fr