# Anthranilic acid derivatives as novel ligands for farnesoid X receptor (FXR)


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Nuclear farnesoid X receptor (FXR) has important physiological roles in various metabolic pathways including bile acid, cholesterol and glucose homeostasis. The clinical use of known synthetic non-steroidal FXR ligands is restricted due to toxicity or poor bioavailability. Here we report the development, synthesis, in vitro activity and structure-activity relationship (SAR) of anthranilic acid derivatives as novel FXR ligands. Starting from a virtual screening hit we optimized the scaffold to a series of potent partial FXR agonists with appealing drug-like properties. The most potent derivative exhibited an EC50 value of 1.5ś0.2 $\mu$M and 37ś2% maximum relative FXR activation. We investigated its SAR regarding polar interactions with the receptor by generating derivatives and computational docking.
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