Electronic Supplementary Information for:

**Analytically useful blue chemiluminescence from a water-soluble iridium(III) complex containing a tetraethylene glycol functionalised triazolylpyridine ligand**


**Figure S1.** Photoluminescence emission spectrum of [Ir(dfppy)$_2$(STP)] (blue line) and [Ir(dfppy)$_2$(BPS)]$^-$ (green line), in aqueous solution at a concentration of 10 µM.

**Figure S2.** Chemical structure and selected properties of [Ir(ppy-SO$_3$)$_2$(pt-TEG)]$^-$.

- green emitter ($\lambda_{\text{max}} = 482, 512$ nm)
- soluble in water
- $E_{\text{ox}} = 1.09$ V vs Ag/AgCl
**Figure S3.** Photoluminescence of [Ir(df-ppy)$_2$(pt-TEG)]$^+$ (left), [Ir(ppy-SO$_3$)$_2$(pt-TEG)]$^-$ (middle), and [Ru(bpy)$_3$]$^{2+}$ (right) at 1 mM in aqueous solution under ultraviolet light (LED: $\lambda_{\text{max}} = 370$ nm).
**Figure S4.** Compounds selected for the comparison of the chemiluminescence intensities.

![Compounds](image)

**Figure S5.** Relative chemiluminescence (signal-to-blind) response for $[\text{Ru(bpy)}_3]^{2+}$ and $[\text{Ir(df-ppy)}_2(\text{pt-TEG})]^+$ at 1 mM reagent concentration, with cerium(IV) sulfate (1 mM) and various pharmaceuticals and related compounds (10 μM), using flow injection analysis methodology.

![Graph](image)
**Figure S6.** Chemiluminescence responses (signal/blank ratios) of various loop diuretics and related compounds:
(1) furosemide, (2) 4-chloro-3-sulfamoyl-benzoic acid, (3) N-benzyl-4-chloro-sulfamoylanthranillic acid, (4) piretanide, (5) bumetanide, at 1 μM, with [Ru(bpy)$_3$]$_2^{2+}$ (red columns) and [Ir(df-ppy)$_2$(pt-TEG)]$^+$ (blue columns), using flow injection analysis methodology. Reagent concentration: 0.1 mM. Oxidant: 1 mM cerium(IV) sulfate in 0.05 M H$_2$SO$_4$.

**Figure S7.** Calibrations for furosemide prepared using flow injection analysis methodology with 0.1 mM [Ir(df-ppy)$_2$(pt-TEG)]$^+$ (blue plot) or [Ru(bpy)$_3$]$_2^{2+}$ (red plot) and 1 mM cerium(IV) sulfate in 0.05 mM H$_2$SO$_4$.
Each point is an average of three replicate injections. The precision was evaluated using a $3 \times 10^{-7}$ M furosemide solution ($n = 5$), which showed a relative standard deviation of less than 2% with both reagents. The limits of detection ($1 \times 10^{-8}$ M and $7 \times 10^{-8}$ M, respectively) were established using a smaller range calibration at low concentrations.