Electronic Supplementary Information

A series of iridophosphors with tunable excited states for hypoxia monitoring via time-resolved luminescence microscopy

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<table>
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<th>State</th>
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<th>Ir2</th>
<th>Ir3</th>
<th>Ir4</th>
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**Table S1** HOMOs and LUMOs distributions of Ir1–Ir4 at T₁ and S₁ states
**Fig. S1** Plots of average phosphorescence intensity as a function of oxygen contents in HeLa cells incubated with Ir1 (10 μM).
Fig. S2 (a) Confocal luminescence images in Hela cells incubated with Ir3 (10 μM) under different oxygen level; (b) Photoluminescence lifetime images in Hela cells incubated with Ir3 (10 μM) under different oxygen level.
NMR and MALDI-TOF spectra

Fig. S3 $^1$H NMR spectrum of 9-(5'-bromo-[2,2'-bipyridin]-5-yl)-9H-carbazole.
Fig. S4 $^{13}$C NMR spectrum of 9-(5'-bromo-[2,2'-bipyridin]-5-yl)-9H-carbazole.
Fig. S5 $^1$H NMR spectrum of ligand 1.
Fig. S6 $^{13}$C NMR spectrum of ligand 1.
Fig. S7 $^{19}$F NMR spectrum of ligand 1.
Fig. S8 $^1$H NMR spectrum of Ir1.
Fig. S9 $^{19}$F NMR spectrum of Ir1.
Fig. S10 $^1$H NMR spectrum of Ir2.
Fig. S11 $^{19}$F NMR spectrum of Ir2.
Fig. S12 $^1$H NMR spectrum of Ir3.
Fig. S13 $^{19}$F NMR spectrum of Ir3.
Fig. S14 $^1$H NMR spectrum of Ir4.
Fig. S15 $^{19}$F NMR spectrum of Ir4.
Fig. S16 MALIDI-TOF spectrum of Ir1.
Fig. S17 MALIDI-TOF spectrum of Ir2.
Fig. S18 MALIDI-TOF spectrum of Ir3.
Fig. S19 MALIDI-TOF spectrum of Ir4.
Fig. S20 The corresponding Stern–Volmer plots of Ir2–Ir4 (a-c) under the quenching by oxygen (red points stand for the values of \(I_0/I\) and corresponding \(K_{SV} = 0.129\) (a), 0.032 (b) and 0.017 (c), respectively; black points stand for the values of \(\tau_0/\tau\) and corresponding \(K_{SV} = 0.137\) (a), 0.031 (b) and 0.018 (c), respectively.).