Strategies for Large-Scale Synthesis of Coelenterazine for *in Vivo* Applications

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Figure S1: $^1$H-NMR of 3,5-dibromo-2-aminopyrazine (5)
Figure S2: $^{13}$C-NMR of 3,5-dibromo-2-aminopyrazine (5)
Figure S3: $^1$H-NMR of 3-Benzyl-5-bromo-2-amino-pyrazine (6)

Figure S4: $^{13}$C-NMR of 3-Benzyl-5-bromo-2-amino-pyrazine (6)
Figure S5: $^1$H-NMR of 3-benzyl-5-(4-tert-butyldimethylsilyloxyphenyl)-2-pyrazineamine (8)

Figure S6: $^{13}$C-NMR of 3-benzyl-5-(4-tert-butyldimethylsilyloxyphenyl)-2-pyrazineamine (8)
Figure S7: $^1$H-NMR of (4-bromo-phenoxy)-tert-butyl-dimethyl-silane (10)

Figure S8: $^{13}$C-NMR of (4-bromo-phenoxy)-tert-butyl-dimethyl-silane (10)
Figure S9: $^1$H-NMR of 4-benzyloxybenzylchloride (19)

Figure S10: $^{13}$C-NMR of 4-benzyloxybenzylchloride (19)
Figure S11: $^1$H-NMR of 1,1-diethoxy-3-(4-benzyloxyphenyl)-2-propanone (20)
Figure S12: $^{13}$C-NMR of 1,1-diethoxy-3-(4-benzyloxypbenyl)-2-propanone (20)
Figure S13: $^1$H-NMR of 1,1-diethoxy-3-(4-hydroxyphenyl)-2-propanone (11)

Figure S14: $^{13}$C-NMR of 1,1-diethoxy-3-(4-hydroxyphenyl)-2-propanone (11)
Figure S15: $^1$H-NMR of Coelenterazine 6-(4-hydroxyphenyl)-2-[(4-hydroxy-phenyl)methyl]-8-(phenyl methyl)-imidazo[1,2-a]pyrazin-3(7H)-one (1)
Figure S16: MS (electrospray) of Coelenterazine 6-(4-hydroxyphenyl)-2-[(4-hydroxy-phenyl) methyl]-8-(phenyl methyl)-imidazo[1,2-a]pyrazin-3(7H)-one (1)

Scheme S1: Mechanistic paradigm for the reaction of compounds 8 and 11 to coelenterazine 1.