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Azaborines are fascinating compounds because they possess valuable properties such as photochemical stability, have high molar absorption coefficient and high fluorescent quantum yields, as well as large Stokes shifts and tunable absorption/emission spectra. Here, we designed, synthesized, and will examine a novel reaction-based azaborine fluorescent probe capable of selectively detect carbon monoxide (CO) based on palladium-mediated carbonylation chemistry. This novel azaborine fluorescent probe will exhibit high selectivity for CO and display a robust turn-on fluorescent response in the presence of CO in aqueous buffer solution.