

## Supporting Information

### Preparation of tris(azole)phosphine gold(I) complexes: Digold(I) coordination and variation in solid state intermolecular interactions

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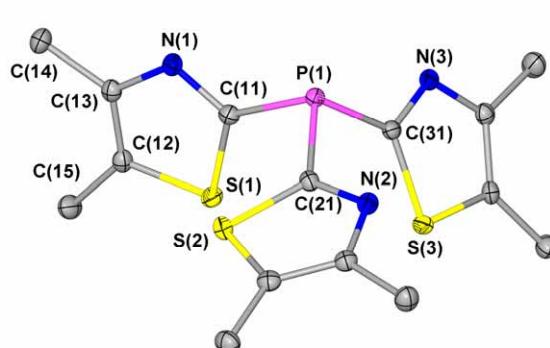


Fig. S1 Molecular structure of **1d**.

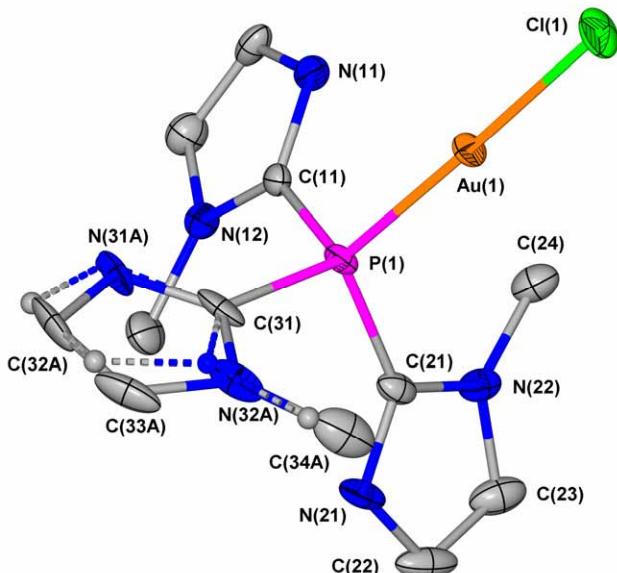


Fig. S2 Molecular structure of **2a**. The minor orientation of the methylimidazole ring containing C(31) is shown as spheres of arbitrary radius.

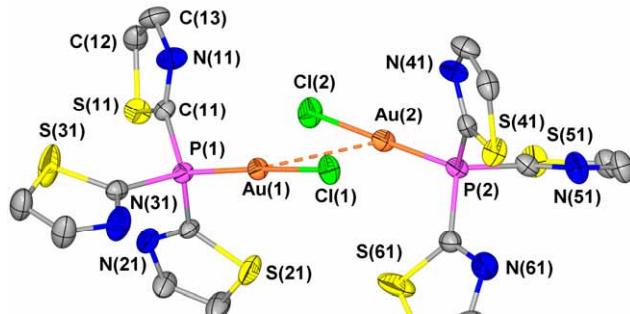


Fig. S3 Molecular structure of **2b(i)**.

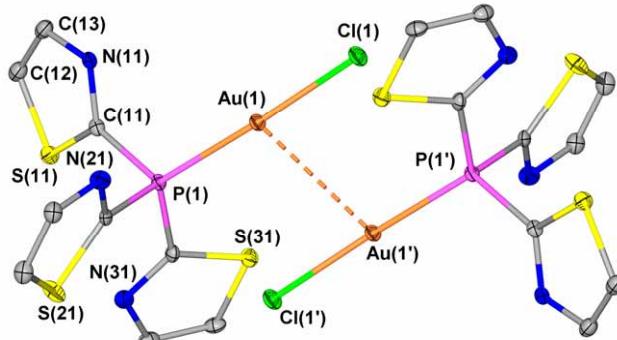


Fig. S4 Molecular structure of **2b(ii)**.

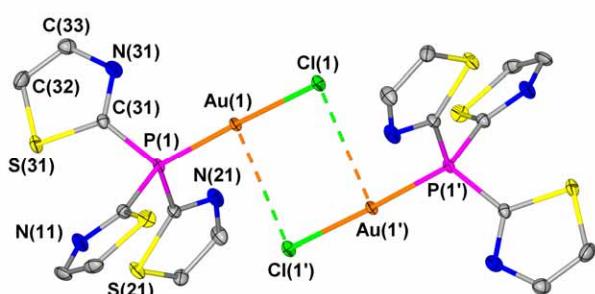
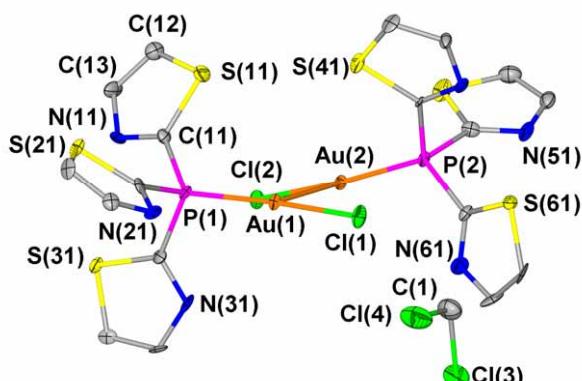
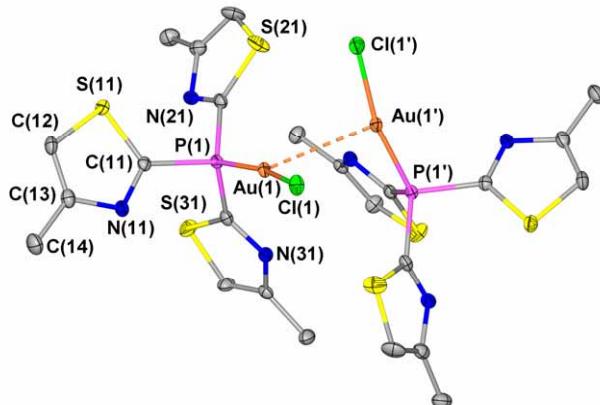


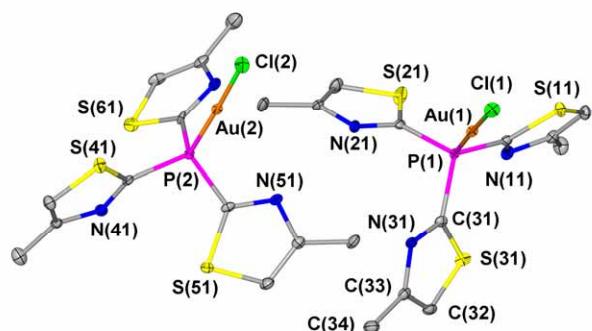
Fig. S5 Molecular structure of **2b(iii)**.



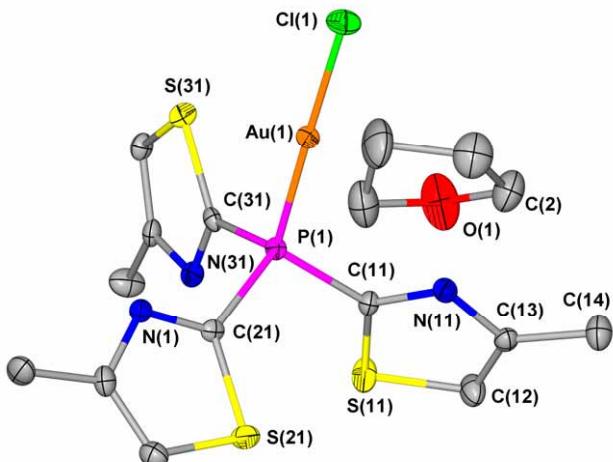
**Fig. S6** Molecular structure of **2b**·CH<sub>2</sub>Cl<sub>2</sub>.



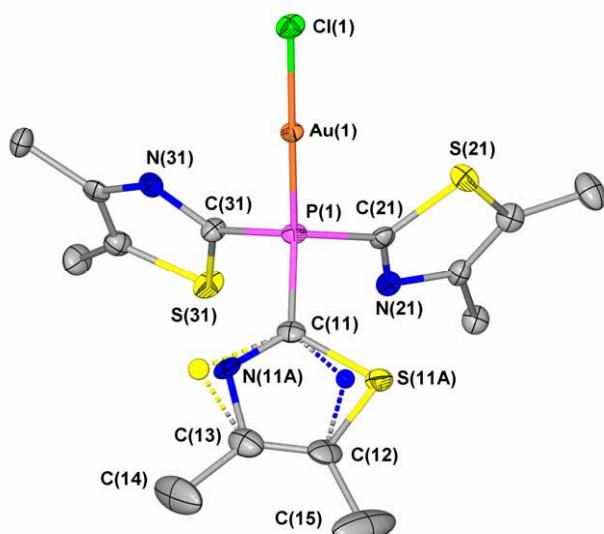
**Fig. S7** Molecular structure of **2c(i)**.



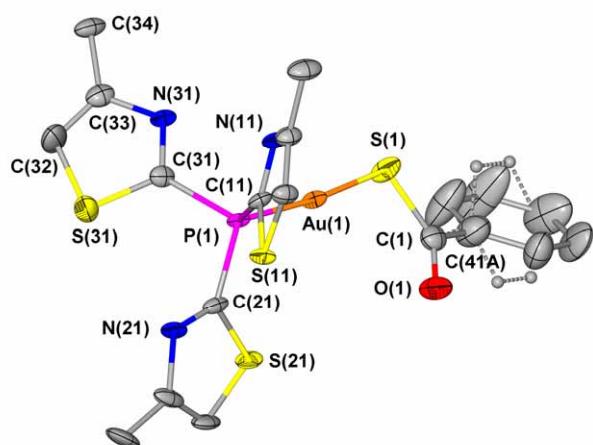
**Fig. S8** Molecular structure of **2c(ii)**.



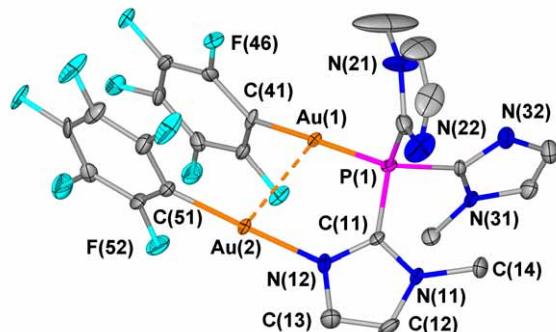
**Fig. S9** Molecular structure of **2c**·thf.



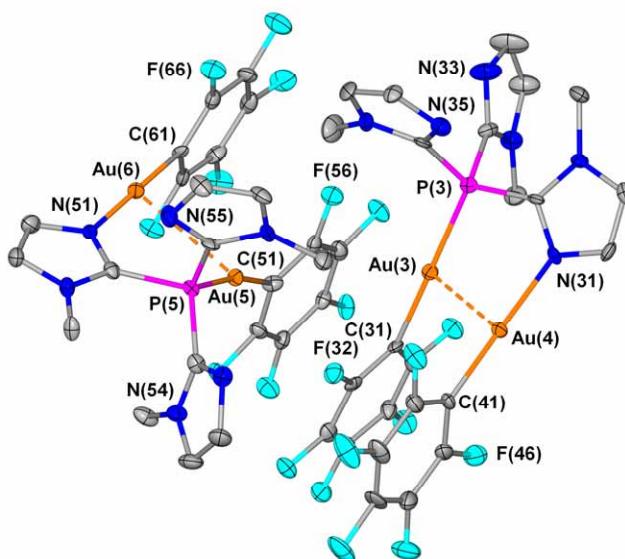
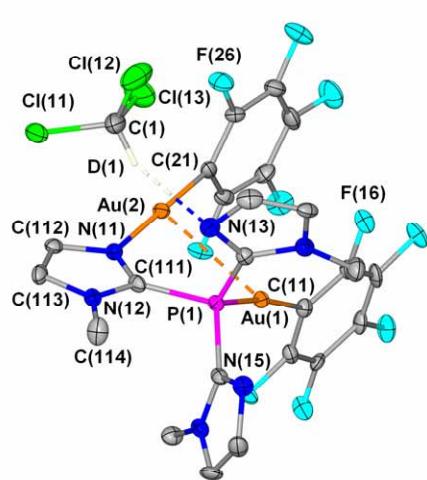
**Fig. S10** Molecular structure of **2d**. The minor orientation of the thiazole ring containing C(11) is shown as spheres of arbitrary radius.



**Fig. S11** Molecular structure of **3b**·0.5C<sub>6</sub>H<sub>14</sub>. The hexane solvent is not shown; the minor orientation of the phenyl ring is shown as spheres of arbitrary radius.



**Fig. S12** Molecular structure of **4**·Me<sub>2</sub>CO. The acetone solvent is omitted.



**Fig. S13** Molecular structure of **4**·0.83CDCl<sub>3</sub>. Only the deuteriotrichloromethane engaged in a hydrogen bond is displayed.